RESEARCH REPORT

Investigation into the Causes of Rising Mortgage Debt and Implications on the Mortgage Market

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INVESTIGATION INTO THE CAUSES OF RISING MORTGAGE DEBT AND IMPLICATIONS ON THE MORTGAGE MARKET

For
Canada Mortgage and Housing Corporation

By
The Corporate Research Group Ltd.
In association with

Fuller Information
and
Jacobson Consulting Limited

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EXECUTIVE SUMMARY

This study looks at the rising level of mortgage debt in Canada and its implications. The Bank of Canada has noted, with some concern, the rising level of household debt in general and mortgage debt in particular. CMHC has attributed the rise in the latter to mortgages on other than primary residences, and has pointed out that aggregate trends do not take into account the correlation between debts and corresponding assets. By the same token, the *National Housing Act* (NHA) was changed in 1992 to allow residential mortgages of 95 per cent of the lending value, and first-time owners are allowed to use some of their Registered Retirement Savings Plan (RRSP) funds. These changes should have increased the aggregate demand for mortgage loans. This study extricates the statistical evidence related to the growth in mortgage debt and interprets what the trends are indicating.

Perhaps because of the highly pragmatic nature of the research question, there is a very limited theoretical framework that can be gleaned from the literature. The approach taken in this study could best be described as "decomposition." The research question has been broken into elements and data sought on each of those factors individually. For each element, the implications for the core problem are derived. At the end, the strands are bought together.

This is a data-based study at a specific time and is limited by the information available at the time of writing, some of which is dated. Because of the topicality of the problem and the data limitations mentioned, the conclusions drawn here should be reviewed as more information becomes available, particularly the 1996 Survey of Family Expenditures (FAMEX).

The study found:

- Despite the rising level of consumer debt, the state of the household balance sheet, on a national accounts basis, is strong.

- The rising level of consumer debt is principally due to a rising level of mortgage debt, almost exclusively loans by the chartered banks. However, included in the mortgage debt numbers is an unknown quantity, which represents rental properties, cottages, nursing homes, retirement communities and other non-primary residences. A conservative estimate of these portions, taken together, would be approximately one third, in line with the tenure breakdown of the housing stock.

- Despite the use of an estimate of household mortgage indebtedness inflated by mortgages on properties other than principal residences, the mortgage loans outstanding remain well secured by the housing wealth of the country, which continues to rise, albeit at a more modest pace that in previous decades.

- At the household level, using data from the FAMEX from 1982 to 1992, there is no evidence that households have become appreciably more mortgage-indebted over that period. The 1996 survey, when it becomes available, will show the effect of the program-driven, high-ratio mortgages on the overall picture.

- According to industry sources interviewed for this study, credit, is to some extent, supply-enabled, in the sense that the availability of credit and its terms and conditions help shape the debt load assumed by individuals and households.

- There is no evidence of a direct link between high aggregate mortgage debt and the rising level of bankruptcy. Homebuyers who go bankrupt are most likely to be first-time buyers with unresolved debt management issues.

- The most recent data on assets and debts at the household level are for 1984. Clearly, there could have been many changes in both savings, borrowing and expenditure behaviour since then and the economic context is quite different. Without current data, it is not possible to say how assets and debts are correlated at the household level. To date, the debate about rising mortgage debt has been framed in terms of aggregate data, which can be misleading since they do not indicate the extent to which assets counterbalance the debts.

- Finally, some portion of the growth in aggregate debt could be expected given the underlying demographics—the baby boom generation has been moving through its peak borrowing years. As this group moves into its saving period, a smaller group will replace it. At the same time, the baby boom generation also stands to inherit a substantial amount of wealth from its prewar parents' generation. The conjuncture of these elements should mean that the high consumer debt will start to decrease.

SOMMAIRE

Cette étude a pour objet d'examiner la dette hypothécaire en hausse au Canada et ses implications. La Banque du Canada a remarqué, non sans inquiétude, la hausse de la dette globale des ménages et de la dette hypothécaire en particulier. La SCHL attribue la hausse de cette dernière dette, aux prêts hypothécaires obtenus pour des résidences secondaires et signale que les tendances remarquées ne prennent pas en compte la corrélation entre les dettes et les actifs correspondants. Par ailleurs, la Loi nationale sur l'habitation (LNH) a été modifiée en 1992 afin d'autoriser les prêts hypothécaires résidentiels à 95 % de la valeur d'emprunt et les accédants à la propriété sont désormais autorisés à utiliser les fonds de leur REER aux fins de la mise de fonds. Ces changements expliquent probablement la raison de la hausse de la demande générale de prêts hypothécaires. Dans cette étude, on examine la preuve statistique liée à la croissance de la dette hypothécaire et on donne une interprétation des tendances récentes.

En raison peut-être de la nature hautement pragmatique de ce dossier de recherche, la documentation actuelle n'apporte qu'une orientation théorique très limitée dans ce domaine. On peut décrire la méthode utilisée dans cette étude comme étant une méthode de « décomposition ». Ce dossier de recherche a été réparti en éléments sur chacun desquels on a recherché des données. Pour chaque élément, on dérive les implications pour le problème de base. Toutes les données sont finalement réunies.

Cette étude a été réalisée dans les limites des informations disponibles au moment de la rédaction de ce rapport, certaines étant malheureusement anciennes. Étant donné l'actualité du problème et les contraintes susmentionnées, il faudra réexaminer les conclusions exposées ci-après à mesure que l'on obtiendra de l'information additionnelle, particulièrement provenant de l'Enquête sur les dépenses des familles.

Les principales constatations de l'étude sont les suivantes :

- Malgré la hausse de la dette des consommateurs, le bilan des ménages est positif à l'échelon national.

- La hausse de la dette des consommateurs est principalement attribuable à la hausse de la dette hypothécaire, provenant presqu'exclusivement de prêts de banques à charte. Cependant, on trouve dans cette dette globale un montant attribuable à une quantité inconnue de prêts pour des propriétés locatives, des châlets, des centres d'hébergement, des collectivités de retraite et autres résidences non principales. Tous ces prêts représentent approximativement environ un tiers des prêts hypothécaires, conformément à la répartition par mode d'occupation du parc de logements.

- Même si l'on a utilisé dans cette étude une estimation de la dette des ménages, augmentée par les prêts pour des propriétés autres que les propriétés principales, les prêts hypothécaires sont encore bien protégés par l'avoir des ménages au Canada, lequel ne cesse de croître, bien qu'à un rythme plus lent que pendant les décennies précédentes.

- D'après les enquêtes sur les dépenses des familles de 1982 à 1992, on ne possède pas de preuve que les ménages ont sensiblement assumé plus de dettes hypothécaires pendant cette période. Lorsqu'elle deviendra disponible, l'enquête de 1996 montrera l'effet global du programme axé sur les prêts hypothécaires à taux élevé.

- Selon les sources de l'industrie auprès desquelles des entrevues ont été menées aux fins de cette étude, le crédit dépend dans une certaine mesure de la demande, en ce sens que la disponibilité du crédit et ses conditions aident à déterminer la dette qu'assument les personnes et les ménages.

- Rien ne prouve qu'il existe un lien direct entre une dette hypothécaire élevée et la hausse du nombre des faillites. Les propriétaires-occupants qui font faillite sont plus vraisemblablement des accédants à la propriété aux prises avec des problèmes de gestion de la dette non réglés.

- Les données les plus récentes sur les actifs et les dettes des ménages datent de 1984. Depuis, les comportements d'économie, d'emprunt et de dépenses ont pu grandement évoluer et le contexte économique est bien différent. Sans données récentes, il n'est pas possible de dire s'il existe un lien entre les biens et les dettes concernant les ménages. Jusqu'à présent, le débat sur la croissance de la dette hypothécaire s'est déroulé dans le cadre de données regroupées, ce qui peut être trompeur, puisque celles-ci n'indiquent pas dans quelle mesure les biens compensent les dettes.

- Enfin, on pourrait s'attendre à la croissance d'une partie de la dette globale, étant donné les données démographiques sous-jacentes - la génération du baby-boom a traversé ses années d'emprunt maximum. À mesure que ce groupe entrera en période d'économies, il sera remplacé par un plus petit groupe. En même temps, la génération du baby-boom héritera d'une partie importante de la richesse de la génération d'avant-guerre. La conjoncture de ces éléments de vrait signifier que la dette élevée des consommateurs commencera à décroître.

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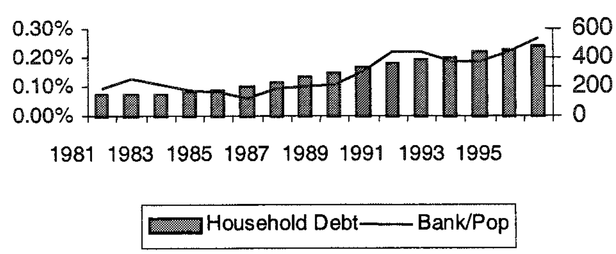
1. INTRODUCTION

Canada Mortgage and Housing Corporation (CMHC) commissioned this study of the causes and effects of rising mortgage debt in Canada. The impetus was the upward trend in consumer debt in general, and mortgage debt in particular, as a percentage of personal disposable income recorded in the National Accounts. At the same time, the level of personal bankruptcies has been growing to unprecedented levels, on a per capita basis. Taking these indicators together led the Bank of Canada to "recognize" the increased vulnerability to changes in economic conditions which a higher level of debt involves."[1]

Figure 1: Total Household Debt and Bankruptcies per Capita



Sources:
Household Debt - The Bank of Canada Review; Bankruptcies per capita based on data from Industry Canada and Statistics Canada.

CMHC engaged the Corporate Research Group, along with Fuller Information and Jacobson Consulting Limited, to study the issue. In posing the research problem, several hypotheses were presented as possible explanations for the phenomenon of rising mortgage debt.

These included:

- ageing baby boomers moving through their homebuying/peak debt years;
- first-time buyers encouraged into the market by the lower down payment requirements under CMHC's First Home Loan Insurance Program (FHLI) and the RRSP Homebuyers Plan;
- increasing levels of mortgage debt on non-primary residences included in the mortgage loans outstanding (MLO) totals;
- a generally increasing appetite for credit by households and tolerance of higher debt levels by financial institutions; and
- the increasing use of real estate to leverage credit.

To provide further direction to the project, several specific questions were posed by the study team.

- What is contributing to the rise in the total residential mortgage debt?
- What is the state of the household balance sheet?

- Has the consumer's ability to pay become more vulnerable?

- What are the current and potential impacts of rising or higher mortgage debt levels?

- What is the impact of weak or non-inflationary house prices on mortgage debt?

To address the research problem, and provide answers to these specific questions, the study team:

- investigated related research;
- identified relevant data sources;
- developed a methodology to analyze and answer the study's primary questions; and
- identified further areas of research.

The project identified multiple lines of evidence that exhibited potential for shedding light on the research questions. The academic and applied literature was examined for a theoretical base and to identify empirical studies relevant to the issue. Statistics Canada survey data, collected over the last two decades, was used to develop a profile of the housing-specific asset and debt situation of Canadian households. To provide context, macroeconomic data sources were compared and contrasted to understand that part of the statistical record. Expert opinion was also canvassed in a variety of forums. A focus group was held with lending practitioners, including those involved in problem debt resolution. Economists, public servants, analysts and others likely to have informed views on the issue were also interviewed. All the above evidence was assembled, analyzed and digested to arrive at conclusions on the central issues of the research.

The topical nature of the issue, and the fact that its examination is largely presented in statistical terms, raises the possibility that the conclusions may need to be modified when new evidence becomes available. In particular, the 1996 census and the Survey of Family Expenditures (FAMEX) surveys will provide the first indication of what has happened to mortgage indebtedness since the end of the 1991 recession, the introduction of the FHLI and other institutional changes. These new data are important building blocks in understanding mortgage indebtedness and its influence on the current state of the household balance sheet.

Road Map

Each section of the report deals with a subset of the questions above. Each can be read meaningfully on its own but provides support for the overall report. Because many of the same factors and data series are used to answer these questions (e.g., demographics, lending data) there is some overlap and repetition between sections.

The background and literature section deals with the relevant literature that pertains to the study. In the section on contributors in the rise in total mortgage debt, the issue of the trend in MLOs is examined. The MLO figures are compared and contrasted with those in related series for the level of congruence between them. In the state of the household balance sheets section, the macroeconomic context as it pertains to the personal sector is presented, based mainly on series from national accounts and the national balance sheets. It addresses the macro question regarding the personal sector in the aggregate. In the vulnerability of consumers' ability to pay section, the analytical focus moves to the level of the individual household. Using the FAMEX surveys for the last 15 years, it examines how the mortgage indebtedness of households has been changing. Next, the possible future implication of rising mortgage debt levels is examined in the context of mortgage claims and the risk to housing markets. Finally, the conclusions from each chapter are brought together.

2. BACKGROUND AND LITERATURE

Because of the highly specific nature of the research question—the rising level of aggregate household and mortgage debt—very little literature was found that bears directly on this subject. There is, however, tangential economic theory and applied research.

Definitions

Mortgage debt is measured by the total value of MLOs. This is defined as: "estimated amounts of residential mortgages outstanding at major private lenders and issued under the NHA-insured mortgage-backed securities program."[2]

Year-to-year changes in MLOs can be characterized as:

$$
\begin{aligned}
MLO_t = \; & MLO_{t-1} \\
& + \text{New Approvals}_t \quad \text{(first and subsequent mortgages)} \\
& + \text{Refinancings}_t \\
& - \text{Repayments}_t \quad \text{(regular, pre-payments and defaults)}
\end{aligned}
$$

The MLO residential total includes first and subsequent mortgages on owner-occupied dwellings, mortgages on rental properties (held by individuals or corporations), investor mortgages, mortgages on cottages and recreational properties, some mortgages on assisted housing, and so on. The total figure, published by the Bank of Canada, is based on information received from the Office of the Superintendent of Financial Institutions (OSFI) and Statistics Canada. The Bank of Canada, unfortunately, does not break the total into its components.

There are monthly data on new mortgage approvals, published by CMHC. This includes mortgages insured under the NHA as well as conventional[3] lending based on a monthly survey of the major lending groups (banks, trust and loan companies and life insurance companies). The survey does not cover credit unions and caisse populaires.[4] The institutions covered by the survey accounted for about 73 per cent of MLOs in 1996.

Since there are no annual data available on all components of the MLO total, a trend analysis cannot be developed to identify which components are most important in changing the total number.

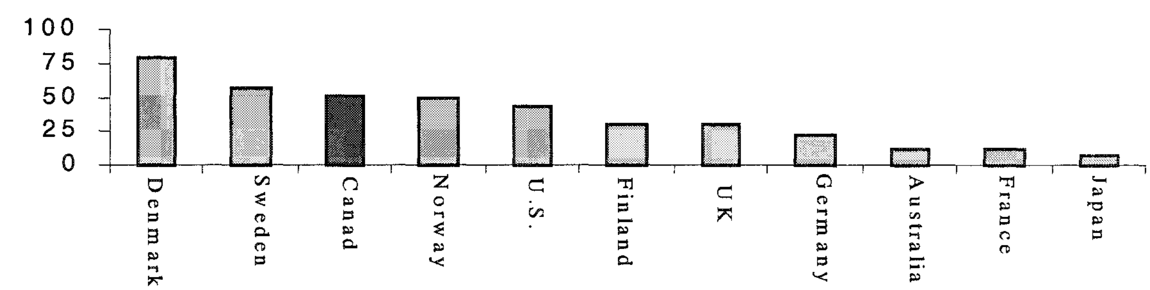
The total MLO figure can be broken into the type of lender holding the mortgage but not the type or tenure of property on which the mortgage is held. Similarly, the Bank of Canada does not provide the number of mortgages included. Finally, the MLO totals from the Bank of Canada refer to institutional mortgages only and not to private placements.

International Comparisons

No international literature was found that cited rising mortgage debt as an area of concern in other countries. A study in 1986[5] looked at the change in housing debt as a percentage of gross domestic product (GDP) over the period 1981-86, in a number of advanced countries. In all cases the trend was upward. In 1986, the ratio of housing finance to GDP in Canada was 33.1 per cent, compared to 18.6 per cent in Australia, 19.45 per cent in Japan, 38.8 per cent in the United States and 40.7 per cent in the United Kingdom. The study did not detail the data sources so it is not clear how precisely the calculation was done. Using currently available estimates of GDP (which would have been revised since 1986) and the MLO for the same year, the 1986 ratio would, today, be recalculated at 28.3 per cent. Whether this difference arises from a revision in the numbers or as a result of not using MLOs as the numerator in the 1986 study figure is not clear. Suffice it to say that in the early '80s, according to this one study, Canada was not at the top end of the range.

Another study[6] for the year 1990 compared mortgage debt to GDP. It showed the United Kingdom at 58.3 per cent, United States at 45.2 per cent, and Japan at 25.1 per cent. That year in Canada, the MLO/GDP ratio was 37.2 per cent. In 1996, the ratio of MLOs/GDP in Canada was 44.8 per cent.

Figure 2: Mortgage as a Percentage of the Value of Housing, 1992



Source:
Bank for International Settlements, 63rd Annual Report.

The Bank of International Settlements[7] has prepared a chart (Figure 2) comparing the ratio of mortgage debt to the market value of housing in a number of developed countries. Canada ranked among the highest, being outstripped only by other northern countries (Norway, Sweden and Denmark). Unfortunately, the report provides no detail on exactly how the figures were derived or even sources for additional information. Of particular interest in these charts is the fact that Australia, with a higher rate of homeownership than Canada, had a ratio of mortgage to real estate value of only slightly above 10 per cent. The United States was about 10 percentage points below Canada (in the lower 40 per cent range), the United Kingdom around 30 per cent.

The total of MLOs is available for the United States. Given the proximity of the two economies, not only geographically but also structurally, it may be instructive to compare the U.S. and Canadian totals to see whether the Canadian number is in line with the situation south of the border. In 1994, the last year for which numbers are available,[8] the value of U.S. MLOs was $3,156 billion compared to $332 billion in Canada. Assuming a 10 to 1 ratio for the two economies, Canada appears to have a slightly higher level of mortgage debt. However, for climactic and other reasons, housing values are lower in the United States, on average, so the mortgage totals in relation to housing asset values do not vary greatly. In 1991, the census and data published by the Canadian Real Estate Association (MLS) put the average value of the Canadian home in the area of C$145,000. The same year, the average existing home in the United States sold for US$100,000. Two years later, according to the Annual Housing Survey, U.S. homeowners were even more modest in their appraisal of the value of their homes when they put the median value at US$86,500, although the median can be expected below the average given the skewed right distribution of house values.

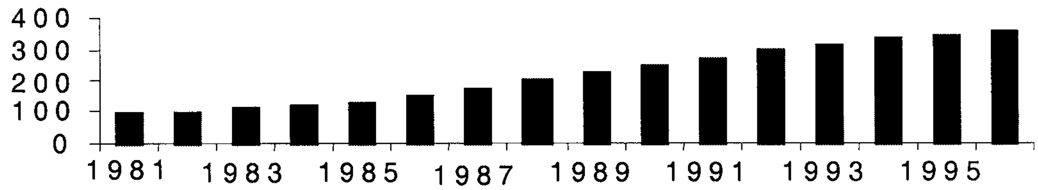
Because of the unique nature of national mortgage and housing markets, the experience of other countries will have, at best, limited relevance to Canada. For instance, the 1995 Insight Canada study[9] draws on U.K. experience in the 1980s when the social housing stock was being privatized. This was the most radical change in homeownership pattern of any country studied. The mortgage arrangements, tax regulations and building societies in the United Kingdom also make the experience different from anything Canada has seen in the last decade.

In summary, this brief review suggests that the level of mortgage debt is high in Canada, both in historical terms and compared to other countries. Questions to be answered by subsequent sections of this report include finding out what is behind the rising level of debt and what are the implications for the personal sector and housing markets.

3. CONTRIBUTORS TO THE RISE IN TOTAL MORTGAGE DEBT

This section examines the rising level of mortgage debt in Canada through the 1980s and 1990s. Mortgage debt, for the purposes of this study, is measured by the total of MLOs. These data are collected by the Office of the Superintendent of Financial Institutions (for all federally chartered lenders) and by Statistics Canada (for smaller lenders, including credit unions). The Bank of Canada assembles and publishes this information, including estimates for elements not gathered in the formal process.

Figure 3: Value of Mortgage Loans Outstanding in Canada, 1981-1996



Source:
The Bank of Canada.

The initial question is whether, and to what extent, the increase in this series is congruent with other related series, such as the value of the dwellings themselves, and how it relates to inflation and other indicators. The loan totals include all residential mortgages—first residences, cottages, rental and recreation properties and even some social housing projects. Unfortunately, the numbers cannot be disaggregated to highlight the contribution of each element. However, the focus of this study is on the household, and data are available on the value of the mortgage debt outstanding on the principal residence from Statistics Canada sample surveys.

Several factors have been identified as possible causes of rising mortgage debt including:

- demographics (in particular the progress of the baby boom generation through the housing cycle);
- structural changes in consumers' attitude toward, and their treatment of, debt;
- consumers' purchases and debt consolidation;
- rental mortgages;
- investor mortgages;
- social housing mortgages; and
- other factors such as changes in lenders' underwriting practices.

These factors are discussed below.

Demographics

Demography, as an explanation for rising aggregate mortgage debt, could mean simply that a rising population could result in more households and hence more homeowners. If these owners had the same propensity to hold a mortgage, the increase in the level of mortgage debt would be proportional to the change in the population. However, rates of household formation and propensities to own could also change, as could the probability to hold a mortgage. If these factors were in flux, the level of mortgage debt would change at a rate different from the rate of change in the population. For instance, owners could hold larger mortgages (e.g., if changes in lending regulations permitted that to happen) both in an absolute sense and as a percentage of income. The latter two measures, which could indicate vulnerability in the household sector, will be considered later in this report.

This section focusses on the elements driving up the overall level of mortgage debt, without looking at, for the moment, whether the level is feasable or sustainable.

The most popular explanation of the driving force behind the level of mortgage debt appears to be demographics. Both the Department of Finance[10] and the Bank of Canada[11] favour this as the cause.

However, as the Royal Bank has pointed out recently,[12] other factors also play a role in housing demand. Even David Foot,[13] the well-known author and demographic determinist, has admitted that demographics explain, at best, two thirds of everything.

Nonetheless, demography is the starting point for explaining housing demand. Demography means not only the overall size of the population, but also its age distribution, propensity to form households, tenure choice and so on. Life-cycle schematas are often adopted as a means of illustrating age-related events. The following table shows the typical housing cycle for a homeowner.

Table 1: A Notional Life-Cycle Framework for Homeowners

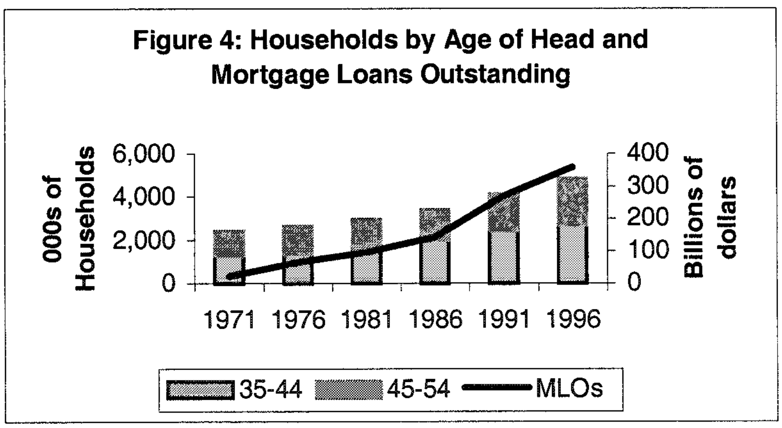
AGE	Stage	Tenure	Income	Borrowing/Saving
0-25	Youth	Living with parents	Low	N/A
25-35	Young adult	Renting	Rising	Consumer loans
35-45	Forming household	Buying first home	Rising	Mortgage/large ticket items
45-60	Middle age	Paying off home	Peaking	Paying down debt/saving for retirement
60+	Retirement	De-housing	Declining	Dis-saving

The schema represents the general pattern expected in time-series data. CMHC has developed a methodology to link demographics to housing demand in the Potential Housing Demand Model.

In this model, the population is formed into households using age-specific "headship" rates, developed using historical trends. Once formed into households by type, the number of dwellings of a given form and tenure required to house these households is calculated using, again, historical propensities.

The most significant feature of Canada's population since the war has been the size (relatively and absolutely) of the immediate postwar generation (the so-called baby boom). This is the largest single age cohort that the country has experienced, and, given its size in relation to the proceeding and following generations, the progressive ageing of this dominant cohort has major implications for housing markets. To the extent that this large generation shares the same generalized propensity toward ownership a peak in the number of owners and a commensurate rise in mortgage debt as the baby boom reaches middle age (peaking at the turn of the millennium) is expected.

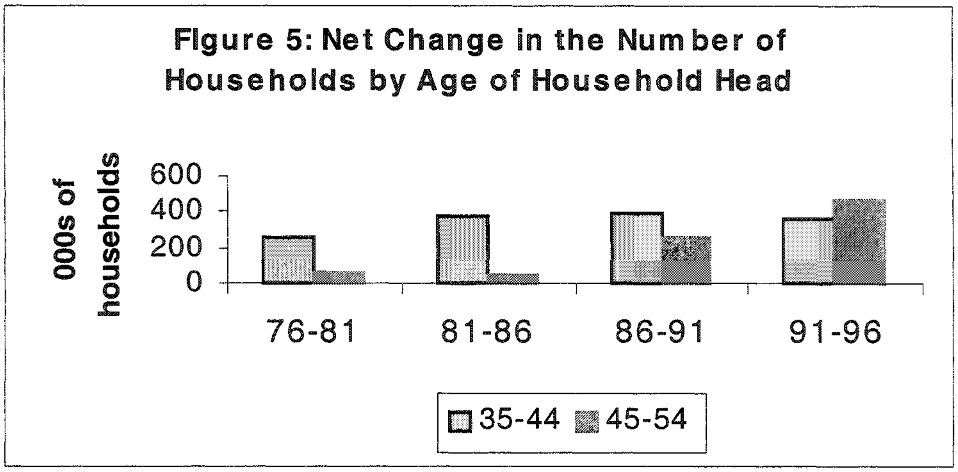
Figure 4 compares the growth in households in the prime homebuying age groups to the level of mortgage debt outstanding. Since the mid-1980s, the growth rate of MLOs has clearly outstripped that of the prime homeownership cohorts.



Source:
MLOs – Bank of Canada; Households by age – CMHC.

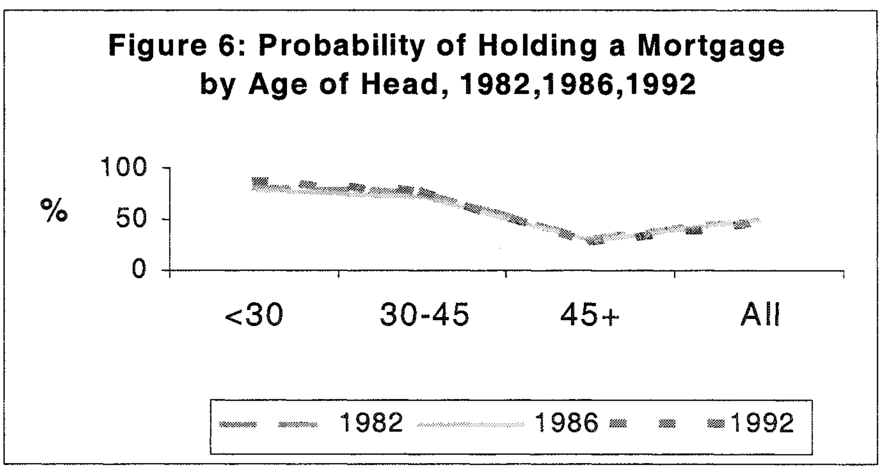
Figure 5 shows the growth in the number of households by age of head over the last two decades. It shows that much of the growth since the mid-1980s has been in the age groups where households are most likely to become homeowners (i.e., ages 35 to 54).

As the household head ages, and income increases, there is more chance that the mortgage debt is repaid. Assuming this profile remains constant, as the homeowners born at the peak of the baby boom reach 45 years of age (1996 and beyond), the degree of mortgage indebtedness should begin to recede.



Source:
Canadian Housing Statistics.

From the FAMEX survey, the age distribution of the holders of mortgage debt on owner-occupied homes can be derived (Figure 6). The chart shows that there has been relatively little change in the probability of holding a mortgage debt by age since the three lines are virtually indistinguishable.



Source:
Statistics Canada FAMEX Survey, 1982, 1986 and 1992.

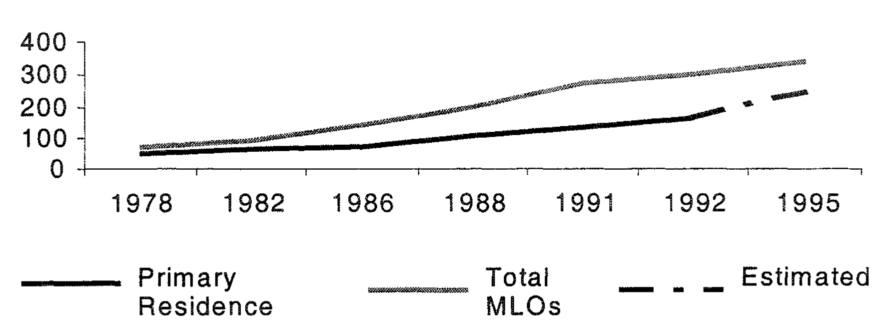
According to the 1991 census, 62.8 per cent of the 10,018,265[14] households owned the home in which they lived, compared to 62.1 per cent of 8,756,675 in 1981. This represents an increase of 823,000 in owner-occupied units. At the same time, the median value of those units rose from $60,407 to $144,435. So, other things being equal, a rise in the level of mortgage debt could be expected when the mortgages on the owner-occupied stock went from $329 billion to $909 billion, using the census owners' estimate to value their stock. The percentage of owners with a mortgage remained about 50 per cent of all owners during this period. Over the 1981 to 1991 period, the combined effect of the increasing number of ownership units and the higher value translated into a 176 per cent increase in the value of the owner-occupied stock. Over the same period, MLOs rose by 178 per cent. If the ownership stock is fairly valued by the census respondents at $909 billion, then this comparison shows that the mortgage debt is not overwhelming when compared to the value of the housing stock.

The 1996 census housing data will not be available until mid-1998, but information from the Household Facilities and Equipment (HFE)[15] indicates that the number of all households has been increasing by between 150,000 and 200,000 annually, and owners would make up more than 60 per cent of the increase each year. HFE indicates that the ownership rate increased somewhat over the first years of the decade to 64.4 per cent in 1994. At the same time the mortgage indebted portion of households also rose to 32 per cent from 31.5 per cent in 1984. Statistically, these numbers are stable. In other words, roughly half of households owning the home they occupy are mortgage free.

In the absence of more current information, an attempt can be made to estimate the portion of growth in MLOs from 1992-95 attributable to demographic factors using the 1995 HFE survey. According to that survey, there were 3,703,737 owners with mortgages in 1995, with an average income of $61,488.

FAMEX (1982, 1986 and 1992) along with the Survey of Household Income, Facilities and Equipment (HIFE)/SCS 1988 and 1991 can be used to create a series of the total value of mortgages outstanding on owner-occupied homes as shown in Figure 6.[16] However, the series only goes as far as 1992. To extend the series beyond that, first, the number of mortgage holders was obtained from HIFE. Then the value of those mortgages was derived using the relationship established from the FAMEX surveys of mortgage value as a multiple of income. From FAMEX data, the mortgage debt outstanding value of a household is roughly equivalent to its annual income. It has also been rising at a rate of one percentage point each year. This relationship was used to estimate the value of the homeownership mortgages outstanding for 1995, given the number and average income of mortgage holders, as shown in Figure 7.

Figure 7: Primary Residence and Total Mortgage Debt



Sources:
MLOs – *Bank of Canada Review;* Homeowner – mortgages - FAMEX 1982, 1986 and 1992; HIFE/SCS 1988 and 1991, HIFE 1995.

The figure shows a growing gap between the owner-occupied mortgage and total mortgage debt during the 1980s. This gap then began to close in the 1990s, reflecting the growing volume of homebuyers. The number of mortgage holders, according to HIFE, rose from 3.1 million in 1991 to 3.7 million in 1995. There were 350,000 owners approved under the FHLI program between its inception in 1992 and 1995 with a loan value of $32 billion. These estimates suggest that the growing volume of mortgage debt was accounted for, to a considerable extent, by the new programs designed to encourage and improve access to homeownership. In other words, these programs were effective.

Other Components of Mortgage Debt

As mentioned already, there are other components of the total MLO number besides mortgages on owner-occupied dwellings. Unfortunately, these other elements are not as well served by statistical sources. Similarly, there is no cross-sectional survey, or even annual flow data, available on many of these elements. This report cannot, therefore, be as precise in evaluating the impact of these elements on the overall level of mortgage debt.

Social housing mortgages

The social housing stock in Canada consists of 657,000 dwelling units,[17] representing about six per cent of all residential units. Half this stock is federal–provincial, meaning that a government, at one level or another, holds any existing mortgage. Of the non-profit stock, the construction started in the 1950s, so much of it would likely now be mortgage free. In the early years, governments—federal, provincial or in combination—supplied the mortgage funding. Beginning in the late 1970s, with the introduction of the new non-profit program, mortgage insurance was provided to private lenders to supply the financing. Governments continued to provide the operating subsidy to ensure the viability of the projects. Roughly 120,000 units were approved under this program. This total would be included in the MLO mortgage value total. To put the scale into perspective, this number of units has to be set against the 2.2 million units that CMHC insured over that same period. So throughout the 1980s, there would have been financing for about 12,000 new assisted housing units on average each year.[18] This would have contributed to the overall mortgage debt outstanding, but only modestly, given the quantity involved. Since 1992, no new projects have been approved under this program.

Starting in 1993, CMHC introduced direct lending to "act as a break-even lender to non-profit and co-operative groups and to provincially and privately financed public housing projects."[19] Under this arrangement, bonds are raised on international markets to provide financing. These amounts would not appear in the institutional MLO figures. They are reported separately by CMHC.[20] Since social housing mortgages have a five-year term, it can be expected that all the social housing stock will shift from private lenders to direct lending by 1998. Since the annual level of this activity is $2 billion, it can be inferred that the social housing portfolio is approximately $10 billion ($2 billion a year for five years). Based on this rough calculation, $10 billion would be the amount of social housing mortgages included in the total MLO figure of $300 billion, or about three per cent. Clearly, this cannot have been a major driving force in the growth in mortgage debt.

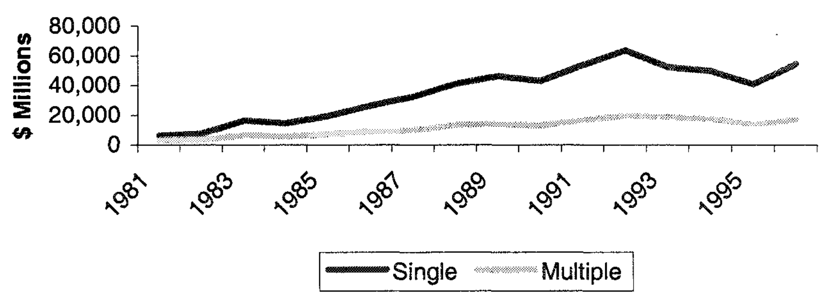
Rental and investor mortgages

In a recent article,[21] CMHC's Market Analysis Centre hypothesized that the growth in mortgage debt was "led by a significant amount of investment related activity." This section examines the statistical sources relevant to this component.

The MLO figures produced by the Bank of Canada do not provide the tenure of the structures. While CMHC does release approval data for both insured and conventional loans broken down by type of dwelling, their data are not classified by tenure or type of mortgage holder. In other words, only a single/multiple dwelling breakdown is provided.

Figure 8 shows the trend in mortgage approvals since 1981, broken down by type of dwelling (i.e., single/multiple). It cannot be assumed that all multiples are rentals since these data can include condominiums. However, given the tenure split of the stock from the census, it can be safely inferred that rentals would be the major portion of the multiple dwellings. Figure 8 illustrates the fact that mortgages on multiples (as a proxy for rentals) have been a steady (but not growing) component of new mortgage approvals over the period. Based on this observation, it is unlikely that new mortgage approvals for multiples have been driving the MLO figure upward.

Figure 8: Single and Multiple Mortgage Approvals



Source:
Canadian Housing Statistics, various years.

There are no figures available on total mortgage indebtedness on rental properties. However, the rental stock did go up over the period 1981 to 1991, from 3.1 million to 3.7 million units, according to the census of Canada. Over the same period, the average monthly rent per unit increased from $296 to $580. Applying a gross rent multiplier of five, the value of the stock would have risen from $67 billion to $130 billion. Conservatively estimating that this stock is mortgaged to 50 per cent of its value, rental mortgages would have been at least $65 billion in 1991.

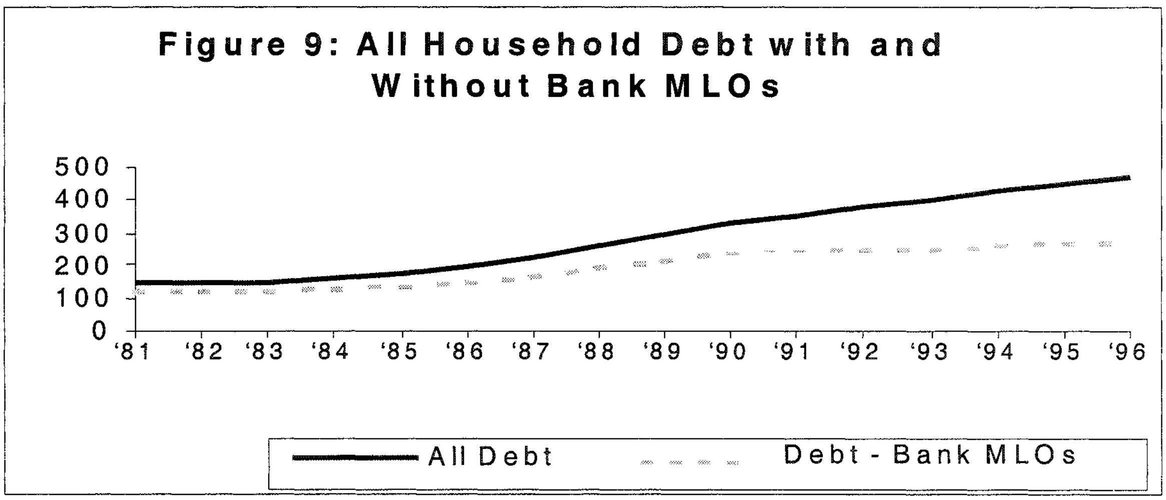
It should be noted that, unlike homeowner mortgages, the interest paid on rental mortgages is tax deductible as a business expense. This could mean that rental entrepreneurs, whether individuals or corporations, have little incentive to pay down their mortgage, and certainly not in any accelerated way.

More important from the perspective of this study is the fact that mortgage approvals for multiple units have not been increasing (Figure 8). So despite the fact that rental mortgages may account for a significant share of total MLOs, they have not been increasing and are likely not responsible for the rising mortgage debt over the last two decades.

Supply side factors and changes in borrower behaviour

One of the issues confronting this study is the extent to which mortgage debt is supply enabled.

Figure 9 shows that, in the absence of the portion of mortgage debt held by banks, the total debt line for households flattens out in the early 1990s. The Bank of Canada recently tried to explain the growing appetite of banks for mortgage loans.[22] The Bank of Canada points out the following demand side influences to explain the phenomenon: "favourable demograhics .... generally robust economic conditions, and the appeal of housing as a hedge against persistent inflation." The Bank's share of the residential mortgage market rose from 10 per cent in 1971 to over 50 per cent in 1996. The Bank of Canada cites the "extensive branch network" as a possible explanation.



Source:
The Bank of Canada.

There were also institutional changes over that period. Under Bank of International Settlements rules, adopted in 1988, insured mortgages do not have to be backed by assets while other mortgages need an asset ratio of only four per cent. This would clearly make mortgages more attractive in comparison with other lines of the lending business, especially given the spread between mortgage and borrowing rates. In addition, with the advent of mortgage-backed securities (MBSs), banks had the additional flexibility to securitize mortgages they originate. Mortgages rose from seven per cent in 1971 to 30 per cent in 1996 of all bank assets and now constitute their largest elements, replacing securities. On the other hand, the Bank of Canada notes that consumer lending by banks actually declined. One possible inference would be that banks may have been encouraging their customers' appetite for mortgages because of their greater security and asset value.

Another possible explanation for the rise in mortgage debt lies in the area of lending policies and trends. Mortgage borrowing is controlled by guidelines and regulations that dictate the amount of debt a borrower can undertake. Changes in these regulations could increase the amount of mortgage debt consumed by the same basic population.

Legislation and regulation determine qualifying criteria for those assuming a mortgage in terms of gross debt service (GDS) to income and loan to value ratios. These policies are set by government and lenders, and have been changing, particularly since 1992, when the government introduced the First Home Loan Program.

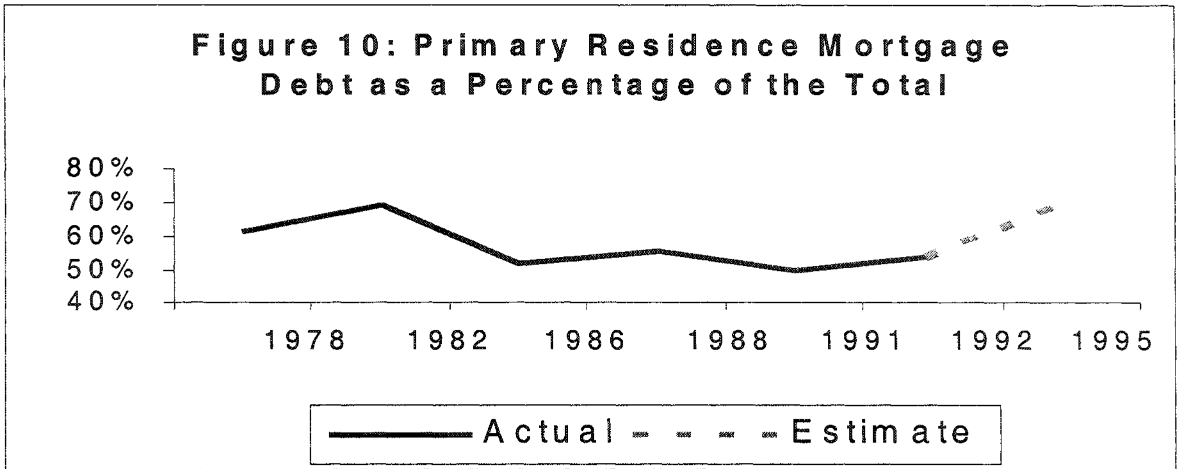
If lenders increasingly favoured the mortgage business, either absolutely, or in relation to other forms of debt, that could also be a factor in increasing mortgage debt. To the extent that the intermediaries set the terms and conditions of mortgage lending and put up the funds, mortgage lending can be seen to be supply enabled. If demographics set the baseline for demand, by setting the terms, lenders were in a position to develop the demand.

On the borrowers' side, there have also been changes. New instruments, such as lines of credit, have appeared on the market. Also, motor vehicles are being leased rather than financed by borrowing. In fact, some 50 per cent of new automobiles are leased, according to Dennis DesRosiers.[23] But these innovations alone would not serve to increase the amount of householder borrowing—quite the contrary, in fact. However, the Department of Finance has estimated that consumer debt per household has remained constant over the last two decades and now stands at $8,000 in 1986 dollars ($12,000 in current dollars). What has been changing is the balance between consumer debt and mortgage debt.

In countries, such as the United States and United Kingdom, where mortgage interest payments are tax deductible, there is an incentive for households to roll all their borrowing into their mortgage. In fact, Jones[24] noted a tendency to do the same thing in Canada, despite the lack of a tax incentive. Mortgages have a lower interest rate than most other types of consumer loans and, to get a small business loan, it may be necessary in some instances to use the house as collateral.

So there have been supply and demand factors, over the last few years that tend to favour mortgages vis-à-vis other forms of borrowing. The exact importance of these factors cannot be quantified at this time, but they do provide further reasons why mortgage debt has grown even beyond levels predicted by demographics.

The total value of the mortgage balances on principal dwellings in 1992 was $150 billion, a little more than half the MLO value reported by the financial institutions (see Figure 10). The chart shows the mortgage balances from the FAMEX and HIFE surveys, compared to the Bank of Canada's reported MLOs for the same year. (The total mortgage pool could be even larger if private placements are included.)



Sources:
MLOs - the Bank of Canada; Owner-occupied mortgage totals from FAMEX and HIFE/SCS, various years.

How can the difference between the total value of mortgage debt be reconciled with the portion that appears attributable to first residences, according to Statistics Canada surveys? Statistics Canada surveys contact individual households, which consult their mortgage documents. So there is no reason for, or evidence of, systematic underreporting on the households' side. Rental dwellings are not included as principal residences but are in the totals. However, it has been pointed out that multiple dwellings do not appear to be major part of the approvals. But approvals data refer to first mortgages only. Also, rental entrepreneurs have no incentive to pay down their mortgage balances. It makes more sense to leave the mortgage on the property until it is sold to maximize cash flow. Likewise, the total MLOs would include any mortgages on the more than 600,000 vacation homes across the country.

Discussion

The level of mortgage debt is high by historical standards. Moreover, the growth in mortgage debt in recent years has been faster than predicted by purely demographic trends. Some of this has been occasioned by government initiatives to increase the level of homeownership. The value of residential real estate has also risen, but less than the level of indebtedness. In 1995, the total mortgage debt outstanding was reported to be $342 billion. The owner portion of that total was estimated at $241 billion. It is not possible, given the numbers available from the Bank of Canada, to be precise about the other components of the mortgage debt. It has been shown earlier that social housing mortgages would not account for more than $10 billion. The same could be said for mortgages on recreational dwellings (cottages, ski chalets and the like) which amount to about 600,000 units, coincidentally, the same number as the social housing stock.

The major unknown is the level of indebtedness of the rental stock. Given the earlier estimate that the rental stock was worth approximately $130 billion in 1991, it would account for the major component of the MLO after the homeownership portion.

Table 2: Components of Mortgage Debt, 1995 (estimated)

Component	$ Billions
Homeowner	241.0
Rental	80.0
Social Housing	10.0
Other*	11.0
Total	**342.0**

Note:
Includes recreational dwellings.

Unfortunately, the MLO number is an amalgam of all residential mortgages—owner occupied, rental, cottages, etc., and no breakdown is provided. CMHC approval data are not broken down by tenure and are partial, since they do not cover mortgages approved by caisse populaires and credit unions.

On the supply side, given that all the growth was explained by the increased activity of the banks, it is possible that institutional factors played a significant role.

4. THE STATE OF THE HOUSEHOLD BALANCE SHEET

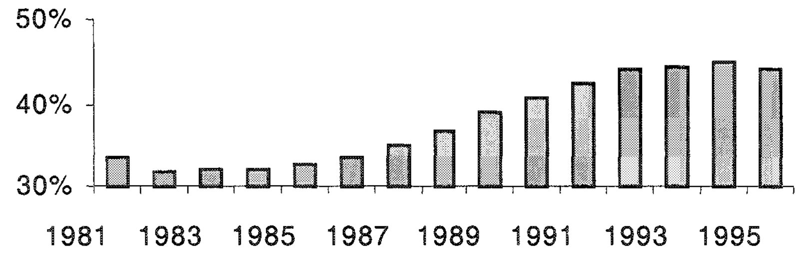
In this section the personal sector balance sheet is examined as if it were that of an individual household. The reader is cautioned that aggregation and other statistical problems can invalidate the results of this type of analysis since it does not account for covariance terms. Also, the household balance sheet approach is a macroeconomic analysis, based on the national account framework. While it has proven useful for economic forecasting at the national level, it was not designed for analysis at the household level. It does, however, take into account the correlation of assets and debts among households. The accounting framework and statistical systems and conventions are not based on reporting from the household level. Rather they are based on aggregates and estimates at the sectoral level (e.g., the financial sector). Nonetheless, it can serve to highlight potential problems of indebtedness at the overall level in the system.

One of the most comprehensive reviews of the household balance sheet is done annually by the Department of Finance.[25] It is a macro level review, based primarily on indicators from the System of National Accounts. The summary in the 1997 review makes the following points.

- Real debt per household is at record levels, mainly due to mortgage debt.
- The increase in the latter is attributed to demographic factors.
- Personal sector assets have increased more than debt, so there has been an increase in net worth.
- There has been a shift in assets from liquid to non-liquid (e.g., insurance and pension funds) although the Bank of Canada believed that, as of 1992, the relative importance of liquid assets was increasing. The Bank[26] has noted a shift toward "deposits and annuity contracts, away from marketable securities, such as stocks and bonds."
- Although the savings rate appears to be decreasing, when the effect of inflation is removed, the savings rate has changed little over the last three decades.

While attributing all the mortgage debt to the personal sector may be conceptually correct in a national accounts sense, it is not all owed by households. The mortgage outstanding figures include rental mortgages, mortgages on social housing projects, etc. Nonetheless, despite using an inflated view of the mortgage debt of households, the Department of Finance found that the rise in mortgage debt corresponded to an increase in housing wealth. The ratio of mortgage debt to house value, according to the Department of Finance, was 34 per cent at the end of 1996, the same as the end of 1972. This calculation was done using MLS average prices that would be more appropriate for the owner-occupied part of the stock. Alternatively, the value of the MLOs could be compared to the value of the residential balance sheet as shown in Figure 11.

Figure 11: MLOs as a Percentage of the Value of Residential Real Estate



Source:
MLOs - The Bank of Canada; Value of residential stock - Statistics Canada's National Balance Sheet.

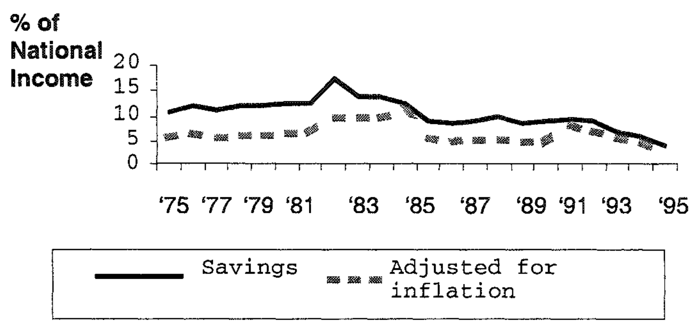
Using this measure, the value of the mortgages is a slightly higher portion of the property value than that obtained by the Department of Finance. It increased sharply in the late 1980s, a period of high real interest rates and rising house prices. The Department of Finance attributes the rise in the ratio to the FHLI program that has facilitated homeownership for younger households through lower down payments. However, that program was only introduced in 1992 and the increase had begun to flatten by then. It should also be remembered that FHLI was aimed at the modest end of the price spectrum, and price increases in houses have been moderate in the last few years compared to the 1980s and 1970s. There was a pronounced run-up in the ratio of mortgage loans outstanding to the value of the residential stock between 1986 and 1992. During this period, house prices, particularly in markets such as Toronto and Vancouver, rose sharply while average family incomes remained relatively flat.

The Department of Finance attributes the rise in ownership rate to a change in the age distribution of the population. Because the share of the population between the ages of 25 and 44 has been increasing, the Department believes that this increases the number of owners, which it calculates on a per capita basis. In fact, ownership is more properly based on the propensity to form households and to own homes. The raw numbers in an age category may not be instructive if "headship" rates and other housing-specific parameters are not taken into account.

According to the FAMEX data, the value of all mortgages outstanding doubled between 1986 and 1992, which exceeded the growth in the number of owners. As a result, the average mortgage increased from $33,000 in 1986 to almost $56,000 in 1992. Adjusting for inflation,[27] the real increase was 31 per cent in the average value of the mortgages outstanding. It should also be noted, however, that the average income of owners with mortgages rose from $47,000 in 1986 to almost $62,000 in 1992, so the average value of the outstanding mortgage was less than a year's salary. For mortgages, applicants are usually able to borrow between two and two and a half times their annual salary. So a mortgage debt equivalent to one times a salary would be considered well within the household's carrying capacity.

Mortgage debt is solely responsible for the rise in total household debt. Consumer debt, according to the Department of Finance, has not changed over the last two decades and now stands at $8,000 per household in 1996 dollars. In current dollars, it was about $12,000. The fact that the level of consumer debt has not changed is, at first blush, a good indicator of stability. However, the level should have gone down to reflect the increase in car leases. According to the *Bank of Canada Review* source notes[28] the consumer debt figures include only "credit extended to individuals." Where car leases involve borrowing by the dealer, those loans would be reflected in the business or corporate sector. In fact, many automobile manufacturers have their own financing arm (e.g., GMAC) to finance the lease. According to Dennis DesRosiers[29] some 50 per cent of automobiles are now leased rather than purchased.

Figure 12: Savings Rate Before and After Inflation



Source:
Department of Finance, based on the National Accounts.

The Department of Finance believes that the savings rate "is not unusually low compared to the last three decades." The view that the savings rate has declined does not make any adjustment for changes in the level of inflation. In earlier, more inflationary years, the interest income contained some compensation for the loss in capital. Treating this as a capital repayment, rather than income or savings, reduces the apparent drop in the savings rate between 1982 and 1996. Within the national accounts framework, savings are a residual for the amount of current income that is not consumed. It can even be negative in any one year. It does not include unrealized capital gains from other assets. As the Department of Finance noted: "National Income and Expenditure Accounts tend to significantly underestimate total personal savings."

The Department of Finance made several conclusions on debt in the personal sector.

- The debt burden should not be a strong impediment to consumption growth.
- The continued growth in real net wealth (including gains in existing assets) can be expected to support future consumption and restrain upward pressure on the interest rate.
- The decline in household liquidity could limit the willingness of households to assume any more debt.
- If all the outstanding debt in the personal sector at the end of 1996 were to be repaid, households would be left with $13,000, on average, in liquid assets without relying on non-

liquid assets, including their houses. This assumes that private households owe all the debt, which is not quite accurate as seen earlier, since some portion of mortgages is held by the corporate and non-profit sectors.

DRI[30] also noted a decrease in the growth in debt, which is borne out by the latest figures from StatsCan on the National Balance Sheets. DRI attributes the change to demographic factors— "Middle age bulge slims debt."

As Montplaisir noted earlier, any difficulties stem from "the distribution of assets and debts among households." While this is a key consideration, unfortunately, the last assets and debts survey was in 1984 and, as such, recent information is not available. Montplaisir also saw the household sector as a net source of capital.

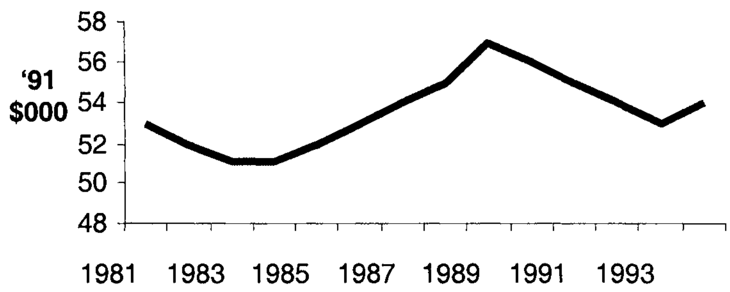
Personal Incomes

Much of the concern for financial stability in the personal sector stems not from weaknesses in the balance sheet but from uncertainty around incomes. Industry Canada has noted more frequent income interruptions as a possible factor in explaining the prevailing high levels of personal bankruptcies. However, this is not based on any substantive research that has examined the root causes of the problem. Human Resources Development Canada[31] has looked at the issue of incomes in some detail. It found that unemployment is mainly a problem for youth. In fact, average job tenure for older workers is increasing, as layoffs are done on the last in, first out (LIFO) principle. They found that real earnings for older workers are actually increasing, as is the number of permanent jobs with salaries in excess of $36,000.

In posing the problem of debt vs. income, personal disposable income, on a national accounts basis, has been used as the denominator. This is not the most appropriate measure when it comes to evaluating mortgage debt, since it is an average for every individual person in the population (including children). Mortgage debt is assumed by householders, often in their 30s, typically with two incomes. For this study, census family income has been selected as the more appropriate measure of income.

Figure 13 track family incomes in the 1980s and early 1990s, expressed in 1991 dollars. It shows that, despite the fluctuations caused by the two recessions, incomes are now above the levels of the early 1980s and rising again after a period of decline caused by the 1991 recession.

Figure 13: Census Family Income



Source:
Statistics Canada's Survey of Consumer Finances.

Discussion

Even in aggregate terms, the state of the household balance sheet is sound. The Department of Finance, the Bank of Canada and others see the personal sector as a source of economic growth. And, in fact, according to commentators such as DRI and Professor David Foot, the situation will only get better as the baby boomers reach the traditional saving years. However, this is a macro analysis on the gross level. It does not speak to the condition of individual households. In the next section, the vulnerability of the individual household is examined using FAMEX data.

5. THE CONSUMERS' ABILITY TO PAY

In this section, the researchers look at the questions raised regarding the ability of individual households to carry their debt load, particularly for housing.

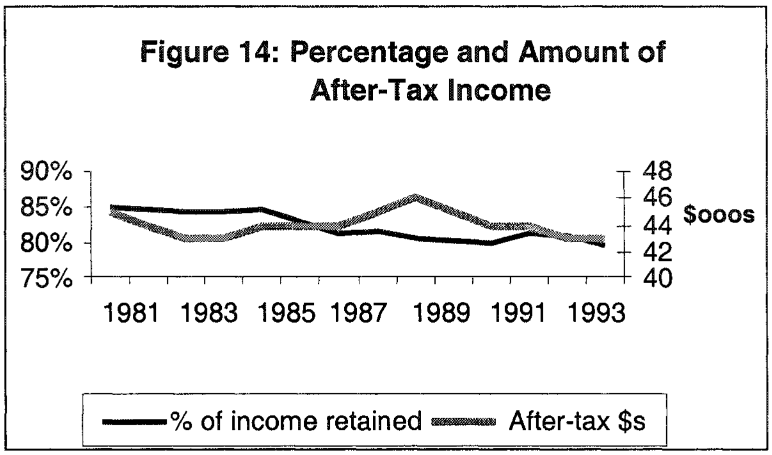
The following questions were posed to the project.

- What is the trend in life-cycle earnings?
- What is the best measure of household income?
- What is the impact of changes in taxation?
- How are debt obligations, such as car leases, accounted for?
- How has low inflation affected the ability to pay?

The affordability calculation involves both a numerator and denominator. It is measured by dividing monthly carrying costs (gross debt services or GDS and including principal, interest and taxes) by family income. When a family first qualifies for a loan, 32 per cent is regarded as the maximum portion of income it can dedicate to housing and still have sufficient remaining for other required expenditures. In the 1960s, the initial GDS ratio was set at 25 per cent of the income of the principal wage earner to carry the loan payments. Now it is 32 per cent of the total household income. So mortgage debt has been rising, relative to income, for a long time and for policy reasons. No literature was found to support this major shift. This may mean that the work was not released publicly, because of its commercial implications. More likely though, a more pragmatic approach was adopted wherein limits were allowed to inch upward based on monitoring of default levels.

Clearly, any decline in incomes would have an impact on affordability as would increased interest rates. Also, any differential in the movement of the housing price compared to income would have an effect on the consumer's ability to pay. Zorn,[32] speaking of the U.S. experience, said that the formal lending criteria are not always applied, particularly for second-time homebuyers. This was in sharp contrast to remarks at the focus group, held as part of this study. The lending officers and mortgage brokers stated that computer programs were used to qualify borrowers, based on inflexible criteria. This effectively takes the responsibility away from the loans officer. While the criteria are inflexible, they are not invariant (for instance, CMHC changed the qualifying criteria for insuring 95 per cent mortgages while the study was in progress).

Statistics Canada publishes annual income data for households before and after taxes. Although before-tax income is always used in qualifying mortgage applicants, after-tax income could be a better measure of income movements. Figure 14 shows the decrease in the portion of income retained after taxes for economic families (an economic family being a group of people sharing a dwelling and pooling income). This would clearly have an impact on affordability. Of course, these are averages of all households including those with mortgages. Statistics Canada does not publish separate series by tenure in their regular publications. The effect of higher tax rates on households with mortgages could be examined using the micro data files such as HIFE. The effect on GDS, in particular, would require the use of FAMEX (since HIFE does not have the shelter cost of owners).



Source:
Statistics Canada Survey of Consumer Finances.

FAMEX is the best source for any sign of stress at the household level caused by high housing expenditure. This survey is carried out on a periodic basis to reweight the Consumer Price Index. Households included in the survey report on the disposition of their current income. Unlike other Statistics Canada surveys used for housing affordability analysis, the income and expenditure relate to the same year. How appropriate is it to use FAMEX to shed some light on this issue? The first symptom of high debt levels was a comparison of total consumer and mortgage debt to personal disposal income per capita on a national accounts basis. It is clearly necessary, given the focus of this research, to look at mortgage debt at the household level where it can be compared to the ability to pay. For macro-economic analyses dealing with the resources available to the personal sector, personal disposable income per capita may be more appropriate. However, in housing applications, including the assessment of affordability, the before-tax income of the household is used. The income used to qualify households for mortgages is that of the husband and wife in a two-partner household. Effectively, this is household income.

FAMEX survey results for 1982, 1986 and 1992 were examined for signs of changing mortgage indebtedness. The survey's focus is on the disposition of the current year's income. There is no detail on the value of accumulated assets, with the exception of the dwelling. The survey gathers information concerning expenditures on housing, divided into interest payments, principal and property taxes. It also asks for the value of the outstanding mortgage and the owners' estimate of the value of the property. With this information, household mortgage indebtedness can be examined and related to the value of the asset subject to the mortgage.

The FAMEX analyses focus on mortgage indebtedness and how that may have been changing over time. The following indicators were calculated:

- GDS (in dollars) including principal, interest and property taxes;
- GDS as a percentage of income;
- mortgage balance as a percentage of income; and
- mortgage equity (i.e., value of dwelling minus the mortgage balance) as a percentage of income.

These indicators were derived over a variety of dimensions. The FAMEX survey has a relatively small sample size of about 14,000 households. This limits the number of variables that can be analyzed at the same time, while maintaining a reliable statistical base. In terms of geography, for instance, the survey is limited to a regional analysis. Individual cities, which could well be the ideal platform for a housing analysis, are not identified on the microdata file. Because of the small sample size, anomalies may appear in the data. One outlier, with an extremely large or small value, could distort the average for an entire class (e.g., owners in the first quintile in 1986). All the statistics calculated from the survey are subject to sampling error.[33] The advantage of using three successive surveys, as here, is that one can look for trends over the three surveys and the effect of one cell is not given undue weight.

The dimensions on which we subdivided the population included:

- regions;
- income quintiles; and
- age of household head (i.e., less than 30, 30 to 45, 45 and over) to address the issue of life-cycle earnings.

Table 3: Percentage of Owners with Mortgages by Age, 1982-1992

Age	1982	1986	1992
<30	81.97	78.59	86.93
30-<45	75.58	71.8	77.73
45 & +	30.7	28.11	28.29
Total	**49.44**	**51.14**	**47.91**

Source:
FAMEX microdata files, various years.

The present study looked for the effects of increasing mortgage debt. These could be expected to show up, if at all, in certain subsets of the population. The lower quintiles of the income range are more likely to experience financial distress in tough times. Younger households are newer to the housing market and will not have had the opportunity to profit from earlier appreciation of house values. Also, if interest rates are on the rise, younger households will be hardest hit, since their mortgage will be a larger share of the house value and debt servicing a higher portion of their income. Industry Canada has pointed out that bankruptcies are more likely in the younger age groups (i.e., less than 40 years of age).

There are three major tenure groups that split the population into thirds (owners with mortgages, owners without mortgages and renters). This study looked mainly at owners with mortgages, since the concern was for the role of mortgage debt.

The percentage of owners in the population has risen slightly according to FAMEX, from 62.74 in 1982 to 63.31 in 1992. This change would be within the standard error of the variables. By quintile, the picture is more mixed. The first quintile is down, the second is up slightly, the third is up, and the fourth and fifth are up the most.

The percentage of owners with mortgages is down over the period from 51.51 per cent in 1982 to 49.44 per cent in 1992. Only the lowest quintile experienced higher levels of mortgage debt over the period. Although the changes would include sample variation, the level of mortgage indebtedness is consistent with other surveys.

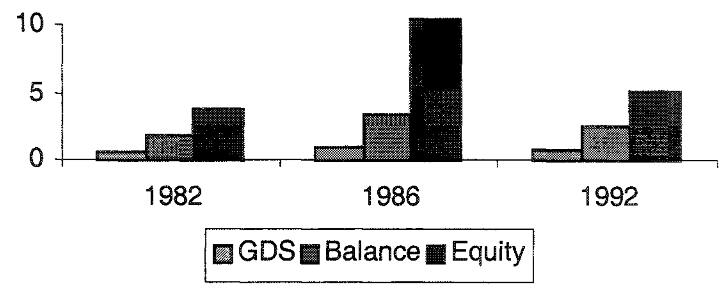
House values rose over the period from $55,117 to $136,393. Converting these figures to 1991 dollars (from 1982 dollars) would make them $83,104 and $134,370, respectively. So the "real" increase in house values was about 62 per cent.

The shelter cost paid by all owners (as a group) and owners with mortgages rose over the decade to 1992, but not as much as house values. Nonetheless, GDS to income did grow over the period. Despite that, only the lowest two quintiles have average GDS ratios over the qualifying level of 32 per cent. There was no change in the average GDS for owners with mortgages since 1986, but the distribution between quintiles changed. The average for the lowest and third quintiles dropped, while the other three averages rose.

Over the 1980s, mortgage balances as a portion of income, on average, for owners with mortgages for all quintiles. The pace of that change has decreased since 1986. However, home equity is much higher than the mortgage balance. This indicates that there is a fair degree of equity among owners, even for those with mortgages. Over the period, there was a slight increase of income in terms of households whose mortgage balance exceeded their annual income. In 1992, that had reached the third quintile. To put that in context, however, existing GDS ratios would translate into a mortgage loan that would be two and a half to three times salary, depending on the interest rate.[34] Home equity as a portion of income is much higher for all owners than for owners with mortgages, almost twice as much in 1992.

Figure 15 shows mortgage elements as a multiple of income for the lowest income quintile of owners with mortgages from 1982 to 1992. This group is most vulnerable to financial difficulty. The figures show that equity rose to 1986 and has shrunk since then, as has mortgage balances. Equity remains well above the mortgage balance, and was more than five times income in 1992.

Figure 15: Mortgage Elements as a Multiple of Income, First Quintile Households



Source:
FAMEX microdata files, various years.

The GDS to income ratio rose over the period. This group (lowest quintile) includes seniors with small mortgages but high property taxes (relative to incomes). In some cases, these households depend on income of others outside the household or abroad, in the case of immigrants.

Owners with mortgages put less money into their RRSPs and other savings than is true for all owners on average. This may only be indicative of the fact that owners with mortgages tend to be younger and less inclined to save for retirement.

Table 4 shows the regional breakdown for younger household. Seventy-six per cent of all owning households, headed by persons aged 30 to 45, had mortgages in 1982; this percentage dropped to 72 per cent in 1986 and rose again to 78 per cent in 1992. The increase was most striking in the Atlantic Provinces and Québec, and a smaller rate of increase was seen in British Columbia. Ontario stayed the same over the period while the percentage over the Prairie Provinces actually dropped

Table 4: Percentage of Owners with Mortgages by Region, 1982-1992

	1982	1986	1992
Atlantic	56.93	54.97	69.93
Québec	77.08	73.75	81.00
Ontario	80.00	74.53	80.00
Prairies	74.46	69.52	71.84
British Columbia	75.02	77.27	79.42
Total	75.58	71.80	77.73

Note:
Owners 30 to 45 years of age.

To complete the regional analysis, indicators of mortgage debt were examined by age group. The national average over all age groups for the GDS to income measure dropped slightly over the decade from 23.2 to 22.65 per cent. The national averages by age group showed a mixed trend. The average GDS ratio for the youngest age group actually dropped over the decade, while the averages for the other two age groupings rose. The older group average was pulled up by British Columbia. In fact, only British Columbia and Alberta showed an upward rise in their average GDS. This reflected their higher rate of escalation in house prices in those regions.

Mortgage balance as a percentage of income rose significantly over the decade to 102.98 per cent from 77.08 per cent. All age groups followed the same trend. The regional picture was more diverse. British Columbia had a major growth in the ratio from 1982 to 1986, after which it dropped back. The other regions saw their rate increase from 1986 to 1992. Ontario now has the highest ratio of mortgage balance to income at 120 per cent, followed by British Columbia at 112 per cent, (down from 160 per cent in 1986). These regions also have the highest house prices.

However, in all cases, home equity represents a larger share of income than mortgage balance, indicative of the fact that despite the presence of a mortgage there is still a considerable degree of equity in the home to be realized in the event of financial difficulty. So, despite the rise in mortgage debt to income, the rise in house equity more than kept pace. While the FAMEX data illustrate an increase in mortgage debt, the data also suggest that the debt was secured by equity.

For the youngest age group (under 30) generally home equity is a smaller share of income than the mortgage balance. This group would be most vulnerable to a sudden loss of income. Mortgage lending practice nonetheless allows borrowing more than twice current income. So even this group is within currently accepted underwriting practices.

As mentioned previously, FAMEX does not gather data on the stock of all assets owned by the household. Because it accounts for all the income for the calendar year, including savings, it provides information on the changes to the assets as positive and negative. Looking at these data, by age cohort over the last decade, provides information on changes in households' ability to save.

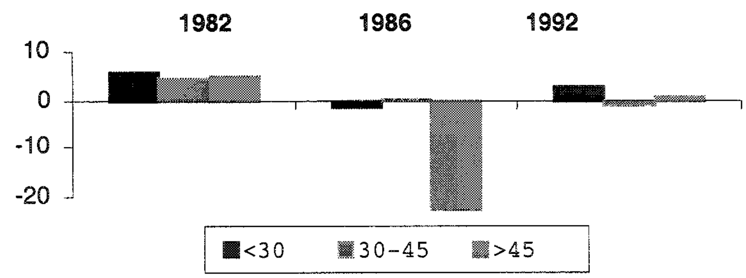
Table 5 and Figure 16 refer to owner households with mortgages only. These illustrate that the ability of these households to accumulate assets, expressed as a percentage of income, declined in the period 1982-86, but has recovered somewhat since then. The 30 to 45 age group is still in a negative position. In other words, for these households, the dwelling is becoming an increasingly important asset.

Table 5: Net Change to Assets by Age Group, 1982-1992

	1982	1986	1992
<30	5.85	-1.59	2.93
30-45	4.53	0.37	-1.13
>45	5.1	-22.35	0.6
Total	4.88	-7.28	-0.16

Source:
FAMEX microdata files, various years.

Figure 16: Net Change in Assets as Percentage of Income



Source:
FAMEX microdata files, various years.

The household level analysis using FAMEX to 1992 did not uncover signs of distress in the level of mortgage indebtedness by households. The initial GDS is set at 32 per cent for approval purposes representing the cutoff for affordability. The GDS ratios as per FAMEX are much lower than that and are not on the increase. Note however, the most recent FAMEX available at the time of writing is 1992. The 1996 survey results, when they become available, will show any changes resulting from FHLI and income movement since the end of the last recession.

The FAMEX data, up to 1992, would not raise any alarm with regard to consumer indebtedness. What then is the source of the concern? The rising level of debt has been pointed out as a negative indicator. However, it is the rising level of the MLO which is mainly causing the increase in debt. But the MLO includes mortgages that are held by the corporate and non- profit sectors. For this reason, the MLO should not be compared to personal (or more important, household) income as the prime indicator of financial stress.

Personal Bankruptcies

The rising level of bankruptcies is causing concern. In the initial formulation of the research question behind this study, this level was raised as a possible consequence of the rising level of mortgage debt. This section will look for any discernible correlation between the two series.

Personal bankruptcies have risen by 20 per cent for the last two years and are at unprecedented levels in absolute terms and on a per capita basis. There is no evidence, however, that would link the level of debt in general and the level of mortgage debt in particular to the level of bankruptcy. An analysis done by Industry Canada has concluded:[35]

> approximately 95% of the increase in bankruptcies over the past ten years can be attributed to the increase in indebtedness and its underlying causes (e.g. flat disposable income, high turnover rates and earning interruptions).

This result is from a statistical study. It does not provide conditional probabilities of the possibility of becoming bankrupt for, say, unemployed persons specifically. As such it does not explain why most unemployed persons do not go bankrupt and not all bankrupts are unemployed. In fact in the United States, where unemployment is much lower, bankruptcy is 50 per cent higher on a per capita basis.[36] This suggests that unemployment is far from a satisfactory explanation of the bankruptcy phenomenon. The level of bankruptcy may reflect changes in mores, the ease of declaring bankruptcy, the efficacy of debt counselling services and the opportunities for re-establishing credit afterward.

Owners are much less likely to go bankrupt than renters. Seventy per cent of bankrupts are renters, even though only 37 per cent of all households rent. If one eliminates the owners without mortgages from those at risk for bankruptcy, then the breakdown would be 50/50 (renter vs. owners with mortgages). Given that owners carry more debt than renters, the absolute level of debt is clearly not the only factor that explains bankruptcy.

The issue of bankruptcies among owners was discussed in detail at the focus group session. There was agreement among the debt counsellors and bankruptcy trustees that although owners did occasionally go bankrupt, it was not as frequently as for renters. Although some owners go bankrupt despite having some equity in their home, generally, it is the first-time owner who is most likely to go bankrupt. First-time owners, who experience a sudden increase in their monthly housing outlay as a result of the move from renting to owning, may not have made all the necessary reductions in their other expenditures. This evidence would highlight the need to examine the qualifying criteria for new owners, provide budget counselling and ensure that when loans go into arrears the lenders show some flexibility. The focus group participants shared the opinion that as long as defaults were within limits, and/or were insured, there was little or no incentive on the lenders to attempt to help owners who are having difficulty meeting their monthly payment.

Discussion

The above analysis provides insight into the questions raised at the beginning of this section. The consumer has become somewhat more vulnerable because less income is now retained. An analysis of the FAMEX data indicates that this has had an impact on the ability of owners to accumulate assets. On the other hand, owners have comfortable amounts of equity in their homes. Apart from the lowest income quintile, all other households are paying rates of GDS to income below the qualifying criteria for new owners.

With regard to the borrower's ability to carry debt, the trend in life-cycle earnings is referred to in other sections and shows that earnings increase with age. Older households are much less likely to have a mortgage so their housing debt burden decreases with age. Households with heads over 45 who do have a mortgage pay a larger portion of their income on housing but their mortgage balance as a percentage of income and the home equity are also much higher than for the younger age groups.

Income problems, as Human Resources Development Canada and others have shown, are mainly a problem for the young trying to get established in a career. The FAMEX data and the focus groups both show that affordability problems are most likely to be a factor for the young, first-time owner.

With regard to the best measure of income for housing purposes, gross family income is used to qualify for mortgages. However, the tax burden is increasing. This might suggest the need to adjust the GDS ratio for new owners to take into account this factor.

The FAMEX data indicate that recessions, such as 1981 and 1991, have an impact on mortgage indicators at the household level. Over the period, inflation was dropping so it is unclear what the impact would be over a variety of inflation scenarios.

The conclusions to be drawn from this section are that, up until 1992 at least, there was no sign that the mortgage debt of the individual household was becoming a problem. Further, owners were not as likely to experience problems such as bankruptcy, not just because they had equity in their home to cushion them against that eventuality, but also because they were better money and debt managers. Owners were also older and beyond the stage of being as vulnerable to the negative vicissitudes of the current economy, which are perils mainly for the young.

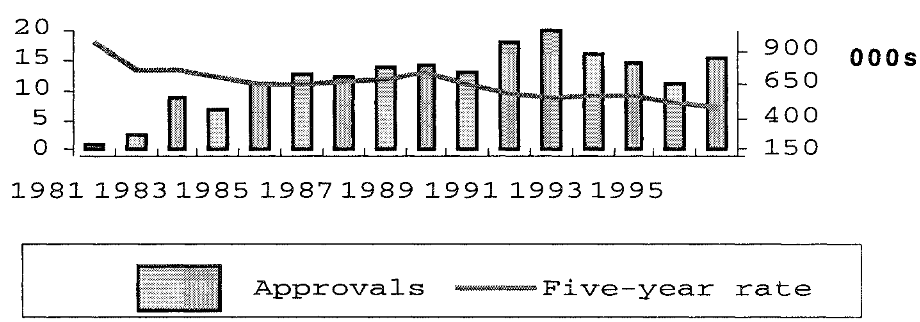
6. CURRENT AND POTENTIAL IMPACTS OF RISING OR HIGHER MORTGAGE DEBT LEVELS

This section examines the possible implications of higher mortgage debt in the aggregate. These could include:

- higher mortgage rates;
- increased use of mortgage default insurance;
- reduced access to mortgage funds;
- market instability; and
- other.

Figure 17 shows mortgage approvals compared to the five-year nominal rate. The chart shows that,, as rates have declined, there has been a tendency for approvals to rise, although the relationship is far from a perfect negative correlation. So, other factors being neutral, as interest rates have tended downward in both nominal and real terms over the last five years, an increase in mortgage loans could have been anticipated.

Figure 17: Mortgage Approvals and the Five-Year Mortgage Rate



Source:
Mortgage Approvals – CMHC; Mortgage Rate - Bank of Canada.

As the volume of mortgage business rises, so too does the number of claims. Some U.S. applied studies attempt to explain mortgage default at the level of the individual loan.[37] These studies found that the loan to value ratio was good predictor of default. The less equity the owner had in the home the less incentive there was to continue with the monthly payment when faced with a reduction in income, for example. Also, households with little or no equity could not sell the house to pay off the debt outstanding. Although loan to value is included as a qualifying criterion through the down payment, it can change when the loan undergoes repayment if the house value dropped, as could occur through market changes.

CMHC[38] has listed the reasons for mortgage problems as:

- unemployment;

- strikes;
- illness;
- loss of secondary income;
- household income;
- increased costs; and
- personal financial management.

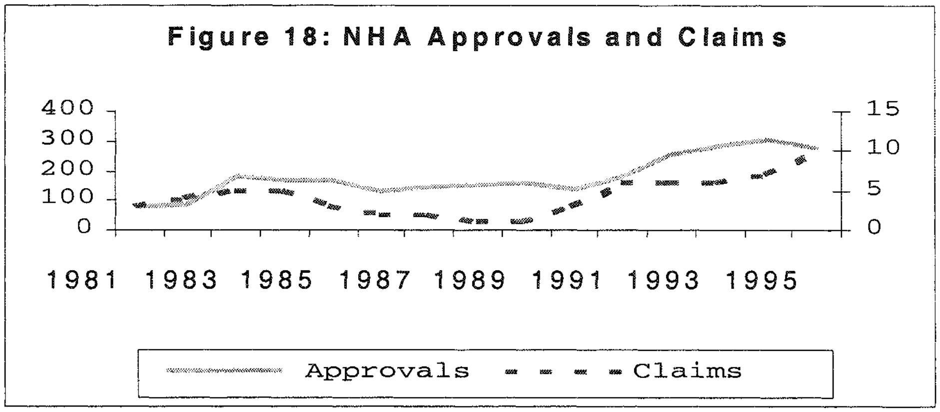
CMHC does not record the reason for default on insured mortgages, so there is no way to relate these reasons, statistically, to actual experience. In 1995, the Corporation commissioned Insight Canada Research[39] to study 61 mortgage defaulters. The study confirmed the importance of factors such as unemployment and marriage breakdown in defaults, but also pointed to possible solutions in terms of better borrower preparation by pre-purchase counselling and offering options to pay off arrears if the mortgage does get into trouble. This issue was also raised in the focus group held as part of this study. In practice, the guidelines and procedures leave no discretion to the lending officer, much less the responsibility, for counselling. A key recommendation of the focus group was that the budget of the household be examined at the time the loan is approved.

Homeownership often involves a higher monthly outlay for the first-time buyer than they had been paying for rent. Even if the guidelines suggest that the household should be able to accommodate this higher level of payment within the income, the borrower should be asked about the current disposition of that income at the time of borrowing. If this money is now fully committed to other expenditures, the household will have to make some life-style adjustments. The focus group felt that the borrower was liable to be reassured by the lender's approval, so much so that the person may not feel the need to make any other changes to consumption pattern. The focus group suggested the change in the monthly housing outlay as an additional criterion to be used when approving the loan.

Chester and Van Order[40] proposed the analogy of a put option to explain defaults, as a conceptual model. When the house value drops below the outstanding mortgage, the owner may decide to exercise this option. This may not be as useful as a theoretical construct in the Canadian context, since the lender has the option of seeking a deficiency claim to recover costs not covered by the sale of the house. Hendershot and Turner[41] compared the U.S. and Swedish experiences with mortgage defaults. They found fewer defaults in Sweden, than would have been predicted using the U.S. experience under the same market conditions of house price depreciation. This they attributed to the differences in the Swedish law concerning deficiency settlements. Swedish law even allows the lender to pursue future earnings.

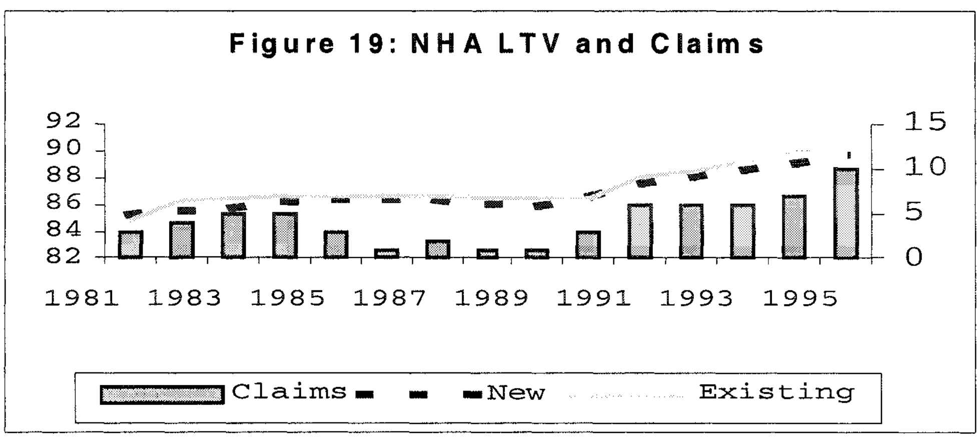
The borrower may not act with the kind of economic rationality implied in the academic literature. The focus group and other studies paint a picture of a borrower confused and overwhelmed by the situation and badly in need of advice and counselling. The CMHC/Insight Canada Study mentioned the lengths that the borrower will go to make the mortgage payment, rather than face the trauma of losing the family home.

Figure 18 shows the number of NHA approvals against claims since the early 80s. Both practitioners and the literature agree that there is a lag before an approval goes into arrears and ultimately defaults. This can be as long as three to five years (i.e., at the time of rollover). So one would not expect to see a coincident pattern between the two series. Both have been on the rise, however, since the early 1990s.



Source:
CMHC, Canadian Housing Statistics, various years.

The applied U.S. literature referred to earlier has found that mortgage defaults are related to high loan to value (LTV) ratios. The only published information on mortgage claims in Canada refers to dwellings insured under the NHA. Loan to value ratios at the time of the approval have been rising for NHA loans (see Figure 19), because of the impact of the high ratio loans that are part of the FHLI program. CMHC does not publish defaults rates for this program specifically. However, it has recently tightened the regulations for the FHLI program.



Source:
LTV - Canadian Housing Statistics, various years; Claims - CMHC unpublished data.

Although high ratio loans have to be insured, they do not have to be insured by CMHC, as there is now a private competitor in the field—GE Capital. Unlike CMHC, GE does not publish its business volumes, so there are no figures available on the total number of mortgages insured.

There are no numbers available on the total of all mortgages approved (i.e., including private and small institutions such as credit unions. Therefore, it is not possible to track the percentage of mortgages insured as a portion of all mortgages. This lack of information on the total mortgage activity and the total numbers of arrears and defaults makes it impossible to monitor mortgage markets in a comprehensive way. In other words, the total number and value of mortgage approvals, the proportion of mortgages which go into arrears, and the total number which default, are not known. The health of the market has to be inferred, in part, by the eagerness of the lenders to lend into it. Currently, there is no lack of mortgage funds available, at favourable rates that have not been seen in decades. Moreover, lenders have shown a willingness to introduce innovations in their products (e.g., weekly payments, more flexible repayments) and to compete on price (administrative charges and interest rates). The inference can reasonably be drawn that, from the lender's point of view, this is a desirable line of business.

There is no literature, academic or applied, that links a high level of mortgage debt in the aggregate with defaults in the mortgage market.

Market Stability

CMHC has researched the causes of mortgage claims at the macro level[42] using econometric techniques to model the relationship between claims and a number of economic variables. The models were run for regions and major markets for the period 1978 to 1994. The models included variables that could be broadly characterized as market—unemployment rate, level of housing starts, initiation volumes and average loan to value ratios. The loan level variables included GDS, LTV and interest rate changes from initiation to renewal. It was the ability to pay variables that had the greatest predictive power when it came to forecasting the level of claims. The macro study also concluded that if the borrowers have equity in the home, they would attempt to sell before going into default. This incorporates the market condition variables that affect house appreciation. Of course, mortgage debt as an aggregate figure is not available at the level of individual housing markets. The Bank of Canada does not publish MLO totals for below the national level and, as such, that variable could not be incorporated into the econometric models.

The macro work done by CMHC is borne out by some of the applied work done elsewhere particularly in the United States[43] in that the default rate is attributable to a combination of micro (GDS, LTV, increase in interest rates) and macro (regional unemployment rates) variables. Eicholtz,[44] writing of the Dutch experience, found that the more diverse the regional economy the less likely that a mortgage will go into default.

In other words, there will be others to purchase the home in the case that the original owner experiences unemployment. Clauretie,[45] found that the higher the foreclosure costs, the lower the default rates, as lenders find new ways to resolve problem cases. This aspect was also touched on in the focus group. There it was stated that the lenders were highly segmented into initiation, administration and loan performance management. Further, staff is rotated frequently so they are not familiar with the individual borrower. This organization structure, combined with the dependence on decision making by computer algorithm, would suggest the possibility of a less than flexible response when a borrower gets into difficulty.

The project looked at the possible implications of high mortgage debt for housing market stability. Economists borrowed the concept of stability from mathematics (asymptotic convergence). Markets arrive at equilibria through the simultaneous transactions of many buyers and sellers (the Walrasian tatonement). Equilibria can be either stable or unstable. Stability can be measured by how well the market responds to a shock. If it returns quickly to its previous equilibrium, then it can be said to be stable. If the response is more than proportionate to the shock, the market has difficulty finding a new equilibrium; or if the new equilibrium value is far from the pre-shock value, then that market equilibrium was not stable. A question for this project is: Would a high level of mortgage debt tend to exacerbate the market response to a shock?

Another aspect of stability in the housing market relates to price. Prices change continuously, not only along a trend line but also around it. There may be many sources of changes layered atop each other simultaneously. These can include seasonal variations, cyclical movements and random fluctuations. Absolute price stability is neither possible nor even desirable since price is the mechanism by which markets are triggered to move and adapt. The question for this study is whether a high level of aggregate mortgage debt exacerbates (or constrains) price movements. Two Canadian examples may be instructive: Calgary in 1982-84 and Toronto in 1988-1990. These markets did experience wide price swings so the factors at play can be examined to see if mortgage debt was among them.

In the Calgary example, the market had a run-up in prices, resulting from strong in-migration of those joining the then-booming oil and gas industry. The National Energy Program negatively affected activity in that industry, leading to layoffs and unemployment over a protracted period. This caused, inter alia, housing prices to decline. Suddenly, people had mortgages in excess of the market value of their homes at a time when deficiency settlements were not permitted under provincial law.

Given the single basis of the local economy, the lack of deficiency payments, the previous high rate of appreciation in house prices which would have led to high mortgage amounts and a factor that Hendershot and Turner (1994) would add that households now had an incentive to move because of the lack of alternative opportunities for employment or to return to their home region, the stage was set for a major drawback in prices—which in fact did occur.

The example of Toronto in the late 1980s is quite different. There was also a fast run-up in prices that, at its peak, became speculative. People bought houses in the hope of "flipping" them for a quick profit. As in all speculative booms, the market eventually ran out of "greater fools" prepared to pay the quickly escalating prices. When the peak came, people were caught carrying more than one house or a house they could not afford. There was a pull back in prices but it was not catastrophic. Only the froth was lost. Because of the strong, diverse nature of the economy, the value of the housing stock reflected the fundamental strength in the economy and was preserved. Vancouver has also experienced similar run-ups and pull-backs of housing prices.

The conclusion to be drawn from this experience is that the stability of a housing market is mainly the result of an underlying strong economy, unless there has been less than prudent mortgage underwriting. The applied literature that looked at the factors affecting defaults and foreclosures emphasized the loan to value and the GDS to income ratios as explanatory factors. So as prices fall precipitously, equity will be eroded. If at the same time there has been job loss or income decrease, the household could be faced with the possibility of foreclosure. The decrease in prices in itself would not be sufficient to cause foreclosure. Prices change from day to day, so the equity any given household has in the home varies continuously. Despite the Chester-Van Order model cited earlier, there is no evidence that households monitor the equity in their homes on an ongoing basis and quit the property when the equity level is negative. Many may not be aware of the value of their home at a given moment. A more likely behavioural model would have the household remain in the house regardless of the equity, lacking any other concomitant factor that would precipitate moving. A home satisfies a variety of needs for the household over and above its return on investment. Its location affords access to work, school, relatives, etc. If a household leaves the home, it still must find an alternative place to live. So, as long as the household can meet the mortgage payment and the house meets its needs, it's not likely that the household will move simply because the price has dropped. This conclusion is in line with the Insight Canada study completed for CMHC.

Could a high level of mortgage debt in the aggregate play a role in large price movements, particularly on the negative side? It is difficult to identify a mechanism that would facilitate a global reaction within the mortgage portfolio to any specific shock. In a market at any given time, there will be a range of mortgages with different financial terms and with different maturity dates. The older the mortgage, the more likely owners have built up some equity in their home. Once equity has been established, the owner will have some incentive and the means to withstand price fluctuations. A high percentage of new owners in a market could intensify a reaction to an economic shock, producing an aggravating factor in a downward market.

The Lenders' Perspective

So long as returns on mortgages cover the lenders' risk and are competitive with alternative investments for the lending institutions, there will be no shortage of mortgage funds. Lenders will allocate funds based on the returns (which include the rate of return, less any provision for losses and the cost of doing the business). Also, lenders will try to keep a balanced portfolio to spread risk, match terms, etc. Within the mortgage portfolio, lenders will also try to maintain a balance, geographically, in ratios, and with insured or non-insured borrowers. Lenders may also use the mortgage as an add-on to other business. The Bank of International Settlement rules favour insured mortgages and mortgages on owner-occupied units over uninsured and rental unit mortgages. That affects the balance of the mortgage portfolio. Given the size, sophistication and profitability of the lending institutions in Canada, it can be inferred that the growing size of the mortgage portfolio reflects their assessment of the profitability of the business. Major market instability can only occur through the collapse of a regional economy, as happened in Alberta in the early 1980s.

Discussion

Higher levels of aggregate mortgage debt should not have an effect on either the mortgage or housing markets, as long as there are no affordability problems that would cause owners to try to sell their units or so long as lenders do not find themselves having to ration funds. Owners, based on 1992 FAMEX data, do not have affordability problems and, in general terms, equity levels in homes are much higher than the level of mortgage debt outstanding. This being the case, owners have no reason to dispose of their property.

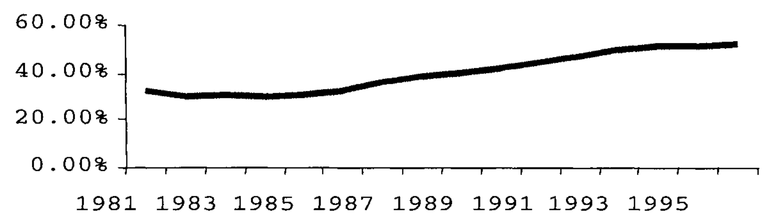
The conclusion from this section, related back to the literature discussed earlier, would suggest that housing markets become derailed only as a result of many negative factors and conditions occurring at the same time. A large drop in prices would have to occur in a market where many owners had little or no equity in their homes. Further, this would have to happen at a time when economic factors in that market were also negative and incomes were under downward pressure. In the context of a single industry situation, if sufficient owners decide that their futures are better elsewhere, then a large exodus would intensify the downward spiral in that market. The closest example in Canada was in Calgary in the early 1980s but, even then, the downward slide was limited and that market eventually recovered. Prudent underwriting will limit the downward risk even in that situation. There is nothing in the present level of mortgage debt at the national level to suggest that it is exposing the mortgage market to that type of risk. Mortgage debt is comfortably within the value of the stock. The survey data, incomplete as they are, do not show that households are carrying levels of debt which are too large. However, the growing number of households, absolutely and proportionately, borrowing under the FHLI program would increase at the margin, the portion of the market that would be vulnerable in the event of a downturn or loss of income.

A high level of mortgage debt in and of itself is not a force for market instability. Where mortgage debt is fully covered by equity, owners have every incentive to hold on to their homes even in a less than favourable economic situation. To determine the level of mortgage debt that could indicate a threat to the market it would also be necessary to know the number of households within each geographic housing market that are at risk, using the micro factors of debt to house value and GDS to income.

7. CONCLUSIONS AND RECOMMENDATIONS

Figure 20 shows mortgage debt as percentage of personal disposable income from the System of National Accounts. The level of mortgage debt, by this measure, continues to rise, although it does appear to be plateauing. It is also high in comparison with available international data.

Figure 20: Mortgage Debt as a Percentage of Personal Disposable Income

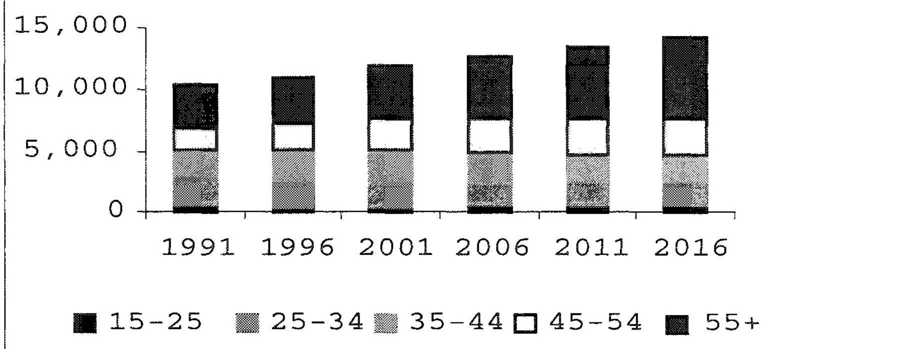


Source:
MLOs - the Bank of Canada; Personal Disposable Income - Statistics Canada's System of National Accounts.

Various reasons have been given for this. The Department of Finance and the Bank of Canada favour demographic factors. However, the changes in the number of households, and their propensity to own, and hold a mortgage, do not fully explain the pace of the rise in aggregate mortgage debt. Nonetheless, to the extent that demographics is the answer, the level of mortgage debt will begin to diminish early in the new century, as the baby boomers reach the age at which to accelerate the retirement of mortgages. This assumes that this generation acts the same as earlier ones and switches from borrower to saver the closer it gets to retirement. The recent boom in the stock market, fuelled by mutual fund investment, is often cited as evidence that the behaviour of the post-war generation is already changing in that direction.

On the other side of the argument, this is the largest generation in the history of Canada, both in absolute and proportionate terms. This limits the degree of freedom to some extent. These people will have a much smaller succeeding generation to which to sell their houses, for example. This could affect their ability to use the proceeds from the sale of their house to pay down debts or fund retirement living expenses (which would mean that they would need more savings). So at this stage, the demographic evidence on the lending or saving behaviour is incomplete.

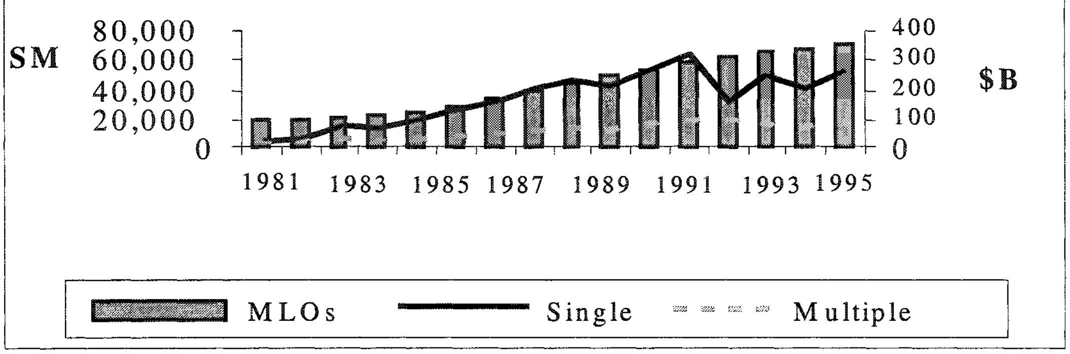
Figure 21: Households by Age of Head



Source:
CMHC's Potential Housing Demand Model.

Unfortunately, the mortgage data do not provide a complete picture of what is happening in the mortgage market. Figure 22 compares new mortgage approvals to the total of mortgages outstanding. The former constitutes first mortgages only and does not include some of the smaller local lenders. The MLO number continues to rise uniformly despite fluctuations in the approval series, suggesting that there may be other factors at work (e.g., second mortgages, refinancing). The information available from the Bank of Canada and CMHC on MLOs and related series, such as mortgage approvals, is, at best, partial. So it is not possible to totally explain from the data the steep rise in mortgage debt by reference to the components. The statistical record at the household level ends with the most recent FAMEX in 1992. The information from HIFE on the number of mortgage holders suggests that households are contributing more to the total mortgage figure since 1992. The 1996 FAMEX data, when they become available will show the effect of the FHLI program on the mortgage debt of households.

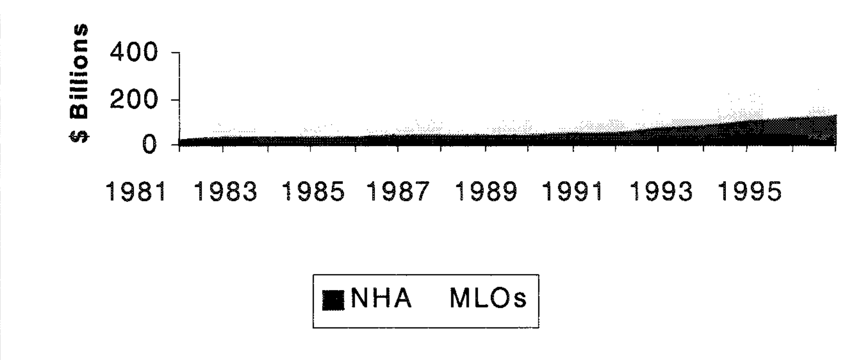
Figure 22: Mortgage Approvals and Loans Outstanding



Source:
MLOs - The Bank of Canada; Mortgage approvals – CMHC.

Figure 23 shows that the number of NHA approvals is also not the driving force in the rising level of mortgage debt. NHA mortgages are mainly first mortgages and do include some rentals and chattel mortgages as well. Their increase appears to be more modest than that of the total mortgage debt. The NHA share of the total declined through the 1980s but began to increase in the 1990s, reflecting the influence of the FHLI program. It is still only 35 per cent of the total.

Figure 23: Total and NHA Mortgage Debt



Source:
CMHC, Canadian Housing Statistics.

This study has not been able to explain conclusively the growing level of mortgage debt. The most likely explanation would appear to lie in the growing attractiveness of mortgages to lending institutions because of their security, flexibility and the changes in the BIS rules. From the focus group and other evidence, it appears that credit is supply enabled. The lenders set the rules and approve the borrowing. Lenders may have moved more of their lending to be backed by property as collateral. Given the size, sophistication and profit of financial intermediaries in Canada, it can be safely assumed that they monitor the business closely and adjust the regulations when losses threaten its viability. The terms for high ratio loans were amended while this study was under way. Certainly, the role of regulations and institutional behaviour would add some credence to that view. To the extent that this is so, the high level of debt is only a problem either if the borrower cannot repay or the lenders try to recall the debt precipitously. The economic outlook for the personal sector would not suggest that owners are at any great risk. The high debt levels will begin to diminish as the borrowing needs of the baby boom generation start to subside.

However, if the study has not been totally successful in explaining the growing level of mortgage debt (because of the lacunae in the data) what dangers, if any, does the level of debt portend?

At the macro level, the Department of Finance and other commentators continue to see strength in the household sector. As a whole, the sector is not overly indebted when compared to its assets. And, the personal sector continues to spur growth in the economy as a whole.

For signs of difficulty at the household level, the study looked extensively at the FAMEX survey data from 1982 to 1992. That survey examination disclosed no signs of increasing mortgage burden or affordability risks among owners. CMHC in its core-need analysis for 1991 found that only 11.8 per cent of owners paid more than 30 per cent of their income for shelter, compared to 29 per cent of renters. So, clearly, housing costs represent a greater burden on the latter, because of their lower incomes. It is impossible to draw any conclusions on the question of the correlation of assets to debts at the level of the individual household since there has been no asset and debt survey since 1984.

The mortgage and housing markets are subject to short- and long-term trends. The latter are largely demographic. Economic cycles, migration and speculation can cause shorter-term fluctuations. The value of the residential stock depends on a strong and diversified underlying economy. The level of mortgage debt only becomes a factor if there is a significant downturn in the economy, sufficient to induce out-migration and a sudden drop in house prices, as happened in Alberta in the early 1980s. Otherwise, even in a flat market, people would be able to continue to pay off their mortgages, barring a complete loss of income. Some level of default is to be expected and is accounted for in the mortgage insurance premiums and the interest rate.

It is recommended that:

- CMHC support Statistics Canada in mounting an assets and debts survey. Since this will take several years to provide results, some insight into the correlation between unemployment and tenure could be obtained as a special request to the Survey of Labour and Income Dynamics.

- Internally, CMHC monitor the default experience with high ratio mortgages, particularly in markets with a narrow economic base that may be vulnerable to a price drawback.

- The reason for defaults be collected and tracked on an ongoing basis.

- The 1996 census and FAMEX surveys be examined to determine the effect of the introduction of the high ratio mortgages on the mortgage indebtedness of households.

- CMHC ask OSFI and the Bank of Canada to survey their reporting institutions to provide an estimate of the breakdown of mortgage debt outstanding between first and subsequent mortgages, mortgages on rental properties, vacation homes, and so on.

- CMHC monitor the annual HIFE data for signs of any changes in the profile of mortgage holders. HIFE does not provide the mortgage amount but does contain household income, tenure and presence of mortgage. So, it is possible to identify those with mortgages and profile any changes in their characteristics (such as income, age, family size). Further, CMHC should add questions to HIFE regarding the date of most recent moves and previous tenures. These questions can be used to isolate the new owners, so it would be possible to look for any changes in the new owner profile, such as likelihood to hold a mortgage or income, as surrogates for mortgage debt.

DATA SOURCES

The following data sources were used in this report.

Total household debt - *Bank of Canada Review* B151.

Total residential mortgage debt - *Bank of Canada Review* B938.

Total mortgage approvals - CMHC, Canadian Housing Statistics, based on NHA approvals plus the Survey of Conventional Lending.

Mortgage claims - CMHC for NHA loans, unpublished.

Loan to value ratios - CMHC for NHA loans published in Canadian Housing Statistics, various years.

Personal disposable income - System of National Accounts.

Family income - Statistics Canada, Survey of Consumer Finances.

Household mortgage debt - Family Expenditure Survey, Statistics Canada, 1978-1992 and Survey of Household Income, Facilities and Equipment, Statistics Canada, 1988 and 1991.

Interest rates - *Bank of Canada Review*.

Average selling price of existing homes - Canadian Real Estate Association.

Value of the residential stock - Statistics Canada, National Balance Sheets.

ENDNOTES

[1] Jim Armstrong as quoted in a *Globe and Mail* clipping received from CMHC (undated).

[2] *Bank of Canada Review*: Notes to the Tables, January 1996, page 24.

[3] The term "conventional" in this context means non-NHA. Some of these mortgages could be privately insured by GE Capital.

[4] *Canadian Housing Statistics*, 1996, Explanatory and Source Notes to Tables 41-52.

[5] *The Retail Banking Revolution*, Second Edition, quoted in "Housing Finance in Advance Countries," Vittas, Frazer & Metaxes-Vittas, *Housing Finance International*, August 1988.

[6] Lomax, John, in *Housing Finance International*, June 1991.

[7] Bank of International Settlements, *63rd Annual Report*, Basle, June 14, 1993.

[8] *Statistical Abstract of the United States*, 1996.

[9] Insight Canada Research, "CMHC Defaulting Profile Study," November 1995.

[10] Department of Finance, Economic Analysis & Forecasting Division, April 1997.

[11] *Bank of Canada Review*, "The changing business activities of banks," Spring 1997.

[12] "Did demographers write off the consumer too soon?" June 1997.

[13] David K. Foot with Daniel Stoffman, *Boom, Bust & Echo*, Macfarlan Walter & Ross, Toronto, 1996.

[14] CMHC, *Canadian Housing Statistics*, 1995, tables 81 and 83.

[15] Statistics Canada, "Household Facilities & Equipment Survey," cat. No 64-202, various years and tables.

[16] This is done by summing the balance outstanding on the mortgages for all households with mortgages and represents the householder portion of the total mortgage debt.

[17] CMHC, *Canadian Housing Statistics*, 1996, Table 63.

[18] CMHC, *Canadian Housing Statistics*, 1994, Table 59.

[19] CMHC, *Annual Report*, 1995, page 7.

[20] CMHC, *Canadian Housing Statistics*, 1996, Table 57.

[21] CMHC, Market Analysis Centre, "Excessive homeowner mortgage debt: more perception than reality," *Canadian Housing Markets*, Second Quarter, 1996.

[22] "The changing business activities of banks," *Bank of Canada Review*, Spring 1997.

[23] As quoted in the *Ottawa Citizen*, May 2, 1997, F4.

[24] Jones, L.D., "Determinants of the Demand for Home Mortgage Debt in Canada," Working Paper, Faculty of Commerce and Business Administration, University of British Columbia, February 1992.

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[27] In deflating the CPI, the All Items Index was used.

[28] Bank of Canada, *Bank of Canada Review*: Notes to the Tables, January 1996, page 24.

[29] Quoted in the *Ottawa Citizen*, May 2, 1997, page F4.

[30] Fairholm, Robert. DRI/McGrawHill, "Canadian Outlook: Let the Good Times Roll," Ottawa, March 1997.

[31] Human Resource Development Canada, Applied Research Branch, *The Future of Work: Trends in the Changing Nature of Employment.*

[32] Zorn, Peter M., "The Impact of Mortgage Qualification Criteria on Households' Housing Decision: An Empirical Analysis Using Microeconomic Data," *Journal of Housing Economics*, 3(1), December 1993, pages 51-75.

[33] "Sampling error is the error attributed to studying a fraction of the population rather than carrying out a census under the same general conditions," Statistics Canada, Survey Sampling, 1983.

[34] The mortgage is approved based on a GDS to income ratio. This can be translated to a loan to income ratio for a given interest rate.

[35] Industry Canada, "Bankruptcies on the Rise," *Strategis - Micro-Economic Monitor-* 4th Quarter 1995.

[36] *Newsweek*, "Deadbeat Nation," April 14, 1997.

[37] Foster, Chester and Robert Van Order, "An Option-Based Model of Mortgage Default," *Housing Finance Review*, 3(4), October 1994, pages 351-371; Plaut, S.E., "The Timing of Housing Choice Transition," *Journal of Urban Economics*, 21, 1987, pages 213-222.

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[39] Insight Canada Research, "CMHC Defaulting Profile Study," November 1995.

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