Summary

- Household debt in Canada is at a record high $1.5 trillion and during the past decade grew at its fastest pace since the 1970s in dollar terms and relative to income.
- Mortgage debt remains the largest component but personal lines of credit grew the fastest. Mortgage debt-to-income is at record highs
- The average debt for all households in Canada is $112,200 or $55,500 for every person aged 18 years and older in 2010. The distribution of debt is uneven across households by age and income levels.
- Household debt is higher in Canada for numerous reasons ranging to higher income levels, demographic changes, rising house prices, financial innovations, and the greater availability of credit. The growing unincorporated business component of household debt is a contributing factor driven by the profit motive rather than the consumption motive by persons.
- The economy is more vulnerable to a negative macroeconomic shock with higher indebtedness amongst households. Higher interest rates pose a risk to borrowers upon mortgage renewal. At the macro level, recessions may become more severe or prolonged than under lower debt.
- Behind the record high household debt is a record high asset value. Net worth is off record highs in 2010 though poised to increase.
- Fundamentals will slow the growth in household debt in the coming decade with smaller increases in housing prices, demographic shifts, and slower labour force growth. However, income growth will likely not keep pace with mortgage debt resulting in a rising debt-to-income ratio.
- Lenders have an adequate safety net to incur considerable losses though should a 'black swan' event occur, the flow of credit to the economy could be impaired.
- The latest federal government moves to tighten mortgage credit are intended to curb borrowing and slow the rise in household debt. Its premise is less than convincing given previous tightening measures and other developments.
- A rising debt-to-income ratio is not necessarily a perilous economic situation. Debt can be both good and bad with the difference being the use of the debt extended to sound borrowers.

Household Debt in Canada

Canada's household debt is at record highs prompting warnings from some top federal policymakers about taking on further debt and the heightened risks to the economy when a negative macroeconomic event occurs as well as the inability of some borrowers to deal with higher interest rates. Concerns over high household debt are expressed by many others as well. The federal government recently tightened its mortgage insurance rules in an effort to limit the increase in household debt.

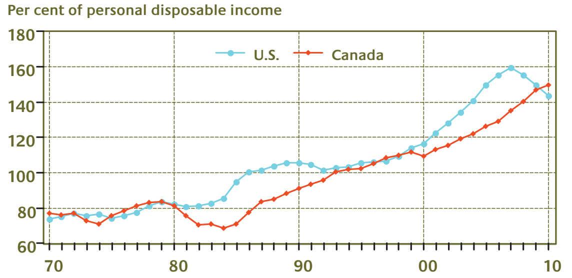
This report examines household debt in Canada by tracking its evolution and characteristics over time, identifying its underlying causes, and assessing its implications for the economy along with some assessment of its future path.

Trends in Household Debt

Canada's household debt-to-income ratio surpassed the U.S. and reached a record high 150% in Q3-2010 with total liabilities or debt amounting to $1.5 trillion. Total debt has more than doubled in the past ten years and has outpaced growth in incomes and the overall economy. Household debt-to-personal disposable income climbed about 40 percentage points since 2000, the fastest rate of increase of any decade since 1970. When U.S. debt broke through 160% of personal disposable income, a financial crisis and the worst recession since the Depression ensued which is seen by some as a harbinger of Canada's economic fate. However, significant differences between the U.S. and Canada debt situation and their finance systems makes Canada's situation much less vulnerable and need not result in a similar collapse.

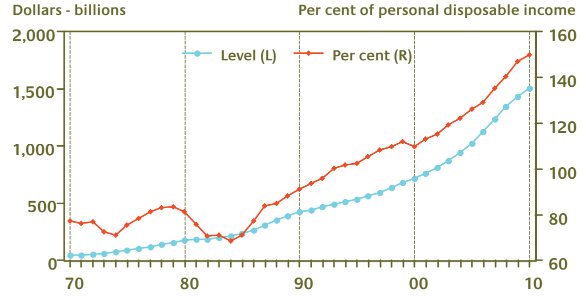
Before proceeding further, a note on the data is in order. Statistics Canada provides balance sheet information for a sector called persons and unincor-

Household Debt to Income Ratio, Canada and U.S.



Source: Statistics Canada, U.S. Federal Reserve. Note: At end of period. Latest: Q3-10
Note: Includes non-profit organizations and unincorporated business.

Total Liabilities Persons and Unincorporated Business, Canada



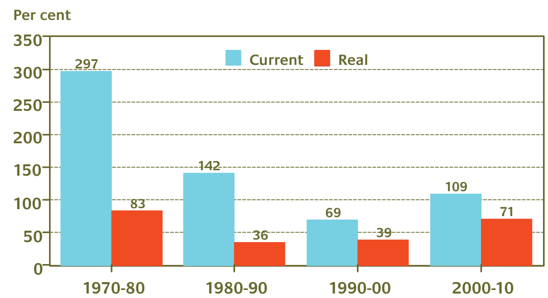
Source: Statistics Canada. Note: At end of period Latest: Q3-10

porated business. This sector includes all persons or households as well as associations of individuals and certain collective investment schemes. Associations of individuals include not only non-profit institutions serving households, but also selected components of fraternal organizations, credit unions and mutual life insurance companies. The same treatment is accorded certain collective investment schemes, including non-mutual life insurance companies, trusteed pension plans and mutual funds. The sector also includes institutional units in the business sector that are not legally incorporated. This group includes: independent business operators; unincorporated farmers; self-employed fishermen; self-employed professionals (consultants, notaries, etc.); and, unincorporated landlords, including owner-occupants as providers of housing services.

Total debt of persons and unincorporated business, or households for brevity, grew nearly 110% since 2000 to $1.5 trillion. In the 1990s debt grew just under 70% while it expanded at more than 140% in the 1980s and almost 300% in the 1970s.

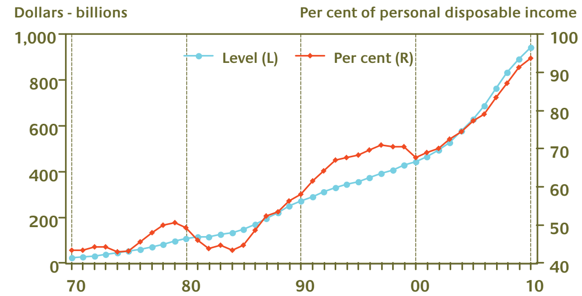
Inflation affects those growth rates. All balance sheet data are in nominal or current dollars, not adjusted for inflation. Inflation, as measured by the Consumer Price Index (CPI), was 117% between 1970 and 1980, 78% between 1980 and 1990, 22% between 1990 and 2000, and 22% between 2000 and 2010 or 473% since 1970. Real household debt is up almost 500% in those years compared to 3,300% in nominal dollars. However, the 80s and 90s have the weakest growth in real debt while the latest decade was almost as robust as the 70s. The data presented in the rest of the report are in current dollars unless otherwise stated. The CPI is used since it is readily available and an economy-wide measure however, a more accurate inflation measure for household debt is one

Ten-Year Growth Rates in Current and Real Dollar Household Debt, Canada



Source: Statistics Canada, C1CU. Note: Real deflated by all-items CPI

Mortgages and Personal Disposable Income, Canada



Source: Statistics Canada. Note: At end of period Latest: Q3-10

that reflects its asset mix, which would be heavily weighted towards housing.

The largest component of debt among persons and unincorporated business is mortgages. In the latest quarter it amounted to $942 billion or 62% of total liabilities. Mortgage debt grew 111% in the past decade, up from 64% in the 90s though down from 155% in the 80s and 327% in the 70s. The share of mortgage debt peaked at 67% in the early 90s. However, as a percentage of personal disposable income, mortgage debt is currently at a record high 94%, up from 68% in 2000.

The fastest growing segment of household debt is consumer credit, which includes personal loans for the purposes of acquiring consumer goods and services, policy loans advanced by life insurance companies as well as loans to persons advanced by sales finance and consumer loan companies. Consumer credit expanded 150% in the last ten years and increased its share of total debt to 29% from 24% in 2000. Consumer credit grew more slowly than total debt in the 70s and 80s. As a percentage of personal disposable income, consumer credit is now at a record high 43%, up from 26% in 2000.

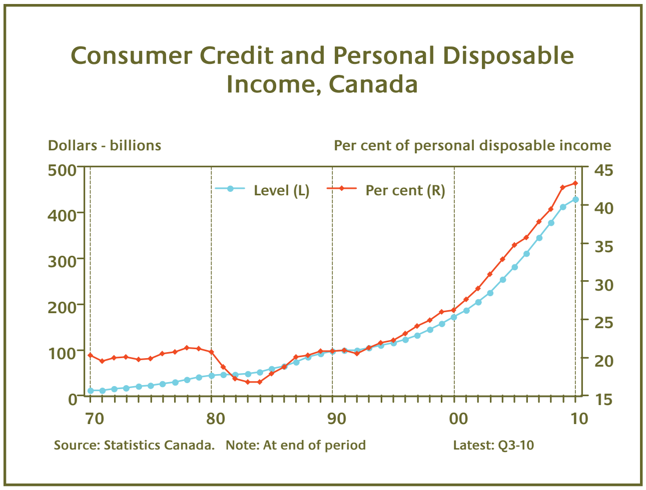
The National Balance Sheet Accounts do not identify components of consumer credit though data from the Bank of Canada provides these details. The fastest growing segment in the past decade is personal lines of credit, which grew 455% amongst chartered banks from the end of 2000. Chartered bank credit card loans grew just under 200% while personal loans expanded 55% in the same decade. Personal lines of credit may be unsecured or secured by assets such as home equity.

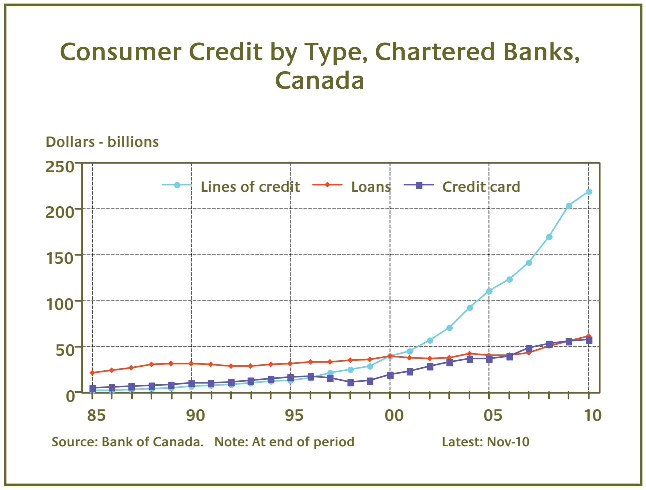
The information presented so far are aggregates for the entire economy which mask some important trends at the micro or household level. The average debt for all households is about $112,200 in 2010 or $55,500 for every person aged 18 years and older in Canada. However, the distribution of debt matters if it is concentrated among certain segments. Not surprisingly, household debt is higher amongst younger households and lower among older households. Debt levels are highest among family units with the reference person in the 35-44 age group followed by the 45-54 age group, according to the 2005 Survey of Financial Security. Debt-to-income tends to be higher in the lower income groups.

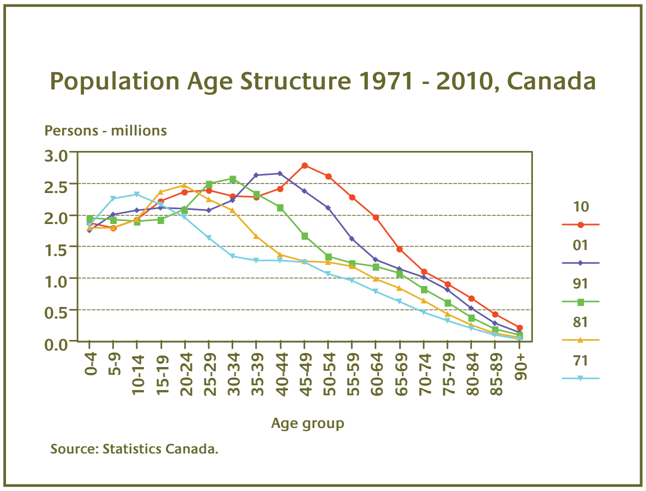
Causes of Higher Household Debt

Many factors are behind the rise in household debt. The primary drivers are income growth, declining and low interest rates, demographic shifts, rising house prices, financial innovations, and the greater availability of credit. Finance is a critical element for a growing and well-functioning economy and without the ability to allocate savings to borrowers an economy would grow at a much slower pace and operate at lower income levels. Debt allows for the consumption of goods and services in advance of full payment and is especially important for items such as housing, autos, and other consumer durables that provide a flow of services for many years and have a high initial cost.

Population demographics affect aggregate debt trends. Younger households tend to borrow more than older households so an increase in the share of







the younger households raises aggregate debt. Conversely, an increase in the share of older less indebted households lowers aggregate debt or lead to slower growth in debt. As the post-war baby boom moved through it household and family formation stages, debt levels naturally rose. Age is not the only factor as educational attainment is also positively related to higher debt levels, which has also increased in the past four decades.

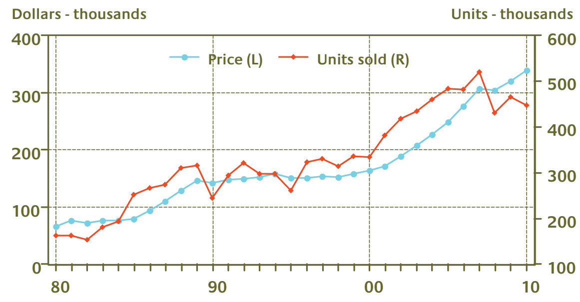
Growth in mortgage debt is directly related to the demand for housing. The surge in homeownership demand in the 70s and 80s by the post-war baby boom generation was a dominant factor. This force subsided in the 90s and along with weaker economic growth for most of the decade contributed to slower growth in mortgage debt and housing demand. In the last ten years though, low mortgage rates, more financing options, higher economic growth, and the echo-boom generation entering the homeownership market drove up the demand for mortgage debt to its highest rate, after inflation, since the 70s.

Higher house prices also boost debt since larger amounts must be borrowed. Higher housing prices may cause some households to feel wealthier, boost consumption, and may spur some households to borrow against their house to finance current consumption or investments. The rise in home-equity lines of credit is related to this motive. Housing prices doubled between 2000 and 2010.

Contributing to income growth in the economy was a large increase in the female labour force participation rate during the 70s and 80s and growth in the unincorporated business sector. The number of women in the labour force has more than doubled since 1970 and is a significant factor behind the economic and income growth of the past four decades contributing to higher debt levels. Since the early 90s, female labour force growth has slowed considerably.

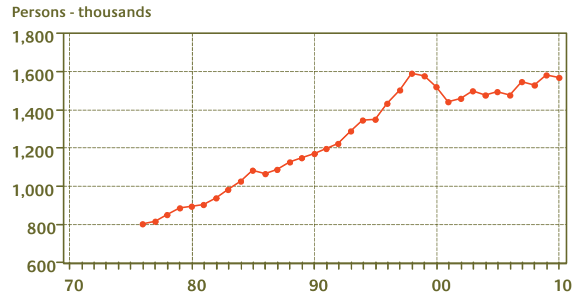
Expansion in the unincorporated business sector has grown much faster than the household sector. The unincorporated business sector is comprised of self-employed owners of farms, businesses or professional practices and operates in many industries. They also include landlords of rental properties. Unincorporated enterprises are created for many reasons. Entrepreneurism is a strong motive for some, while others opt for this business model during weak economic conditions. Some professions are required by their governing bodies to adopt this form of business (for example, physicians, lawyers, etc.).

MLS® Residential Average Sales Price and Units Sold, Canada



Source: CREA.

Self-employed Unincorporated, Canada



Source: Statistics Canada. Note: Annual average.

The Labour Force Survey (LFS) documents a large increase in the self-employed unincorporated sector between 1976 and 1998 but a relatively flat trend since. Employment in this sector doubled to 1.6 million persons by 1998 and with some minor ups and downs ended 2010 at roughly the same level.

The number of unincorporated landlords of rental properties is difficult to ascertain but no doubt has greatly increased since 1970. The production of purpose-built market rental units by incorporated businesses (developers) has fallen by a large amount since the 70s and 80s with the ending of various government supply programs and tax incentives. Small investors are playing a larger role in the provision of market rental units through the purchase of individual single-detached or multiple-units such as apartments. This market has expanded rapidly with the development of more condominium apartments and to the point where CMHC found it necessary to include a secondary rental market (rented condominium apartments, single detached, semi-detached, duplexes or accessory apartments) category in their

Rental Market Survey of traditional purpose-built rental stock in major markets.

According to Statistics Canada, there were about 900,000 unincorporated businesses with annual revenues between $30,000 and $5,000,000 in 2008 in Canada. Of these, about 137,000 were landlords or lessors of residential dwellings and had interest and bank charges representing about 20% of their annual revenue. The mortgage, lines of credit, and personal loan debt carried by these businesses is included in the household sector. Acquiring debt for investment and business purposes is usually a positive development for an economy.

An increase in the demand for debt is usually met by a corresponding increase in supply, which is how a market should operate. Causality can also run the other way with new sources of credit supply increasing the demand for credit. In Canada as in the U.S. and other modern economies, credit market innovations and expansions were plentiful since 1970. The number of credit providers expanded as did the number of credit products and instruments. At times borrowing constraints were relaxed such as changes to minimum mortgage down-payments, amortization periods, and variable rate mortgages.

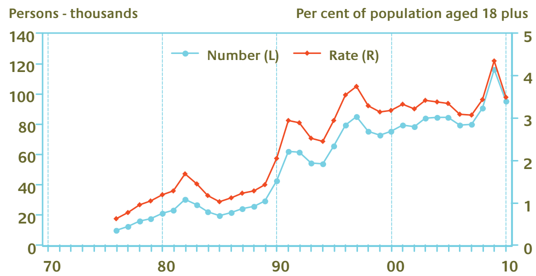
Consequences of Higher Household Debt

Greater indebtedness increases the sensitivity of household spending to various economic shocks. Households are more exposed to asset price changes through greater leverage resulting in a larger effect on net wealth and spending. Since households need to devote a greater share of their incomes to debt service, an income shock increases the risk of falling into arrears and possibly defaulting on the loan. An interest rate shock also increases the debt burden but may be a lesser negative as long as there is income to service debt.

Debt service is currently manageable under these low interest rates. Statistics Canada's debt service ratio (DSR) for the household sector relates to interest payments only and are expressed as a percentage of personal disposable income. The DSRs for total and mortgage credit are at or near lows since 1990, when the data first became available, though the DSR for consumer debt is roughly the same as in the past 20 years despite the large increase in consumer debt.

When a debtor encounters problems with servicing debt, options include drawing down savings,

Consumer Bankruptcies and Bankruptcy Rate, Canada



Source: Statistics Canada, OSBC, C1CU. Latest: 12 months ending Sep-2010

refinancing debt, selling assets, and as a last resort, bankruptcy. Selling assets is not always an option, particularly for housing which can be illiquid during a recession.

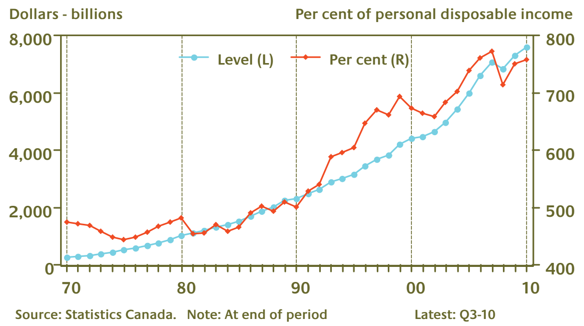
According to the Office of the Superintendent of Bankruptcy Canada, the most frequently encountered type of debt is credit card debt followed by bank and finance company loans. Mortgages are a smaller component though the highest value debt encountered during bankruptcy proceedings.

The time-profile of consumer bankruptcies in Canada corresponds reasonably well with the state of the economy and large increases in bankruptcies are often, though not always, associated with an economic recession. One exception since 1976 is the bankruptcy surge of the mid-90s reaching a peak in 1997 which followed a period of weak economic growth but no recession. Changes to bankruptcy legislation in 1997 may have prompted some advance filings as in 2009. Various surveys identifying some of the causes mentioned by insolvent debtors are related to lack of employment, changes in income, excessive use of credit, matrimonial or family status, illness, or running a business.

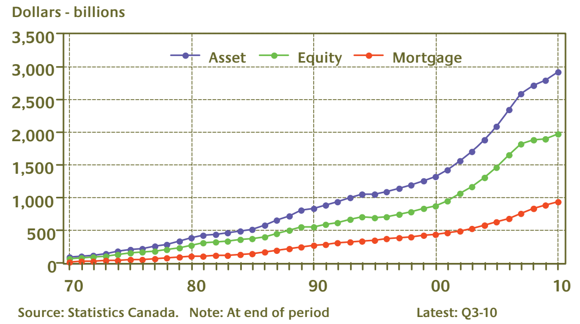
Currently, consumer bankruptcies and residential mortgage arrears in Canada are high following the economic recession but are coming down in 2010.

The Bank of Canada in its last Financial System Review presented research results of stress-testing simulations to gauge the financial vulnerabilities of households to an adverse event such as a sharp increase in the unemployment rate. Using household microdata, researchers simulated the distribution of the household debt-service ratio under a 3-percentage point increase in the unemployment rate and found that

Total Assets Persons and Unincorporated Business, Canada



Housing Asset, Equity and Mortgage Liabilities, Persons and Unincorporated Business, Canada



the proportion of households indebted with a debt-service ratio above 40% rises 20%; the proportion of debt owed by those households rises 18%; and the proportion of households in arrears three months or more jumps to 1.4% from 0.6%. These results are from simulations and actual results will vary but it highlights the financial risk faced by some households, lenders, and the aggregate economy.

Refinancing at higher mortgage rates is another possible problem for debtors and creditors. Current low mortgage rates are expected to begin rising in 2011 and reach normal levels in 2013. Variable-rate mortgage borrowers will face the larger increases and more quickly than fixed-rate borrowers. Variable rate borrowers could see a full percentage point increase by the end of 2011 and another percentage point by the end of 2012. One-year fixed-rate borrowers face a similar rate burden.

Some mitigating factors are that underwriting criteria for loans requiring mortgage insurance were tightened in 2010 to require borrowers to qualify at the five-year term rate and not the lower variable, one, or three year term rates. Previously, the requirement stood at qualifying at the three-year rate. Rate renewal is not seen as a major issue in aggregate but it will be a problem for some households with high debt-income and debt service ratios. A lack of liquid assets and savings exacerbates the problem. Ownership households in the lower income groups, with high and rising debt-income and debt-asset ratios, are more likely to find themselves in this position.

However, the larger risk of high household debt is with another economic recession and the consequent higher unemployment, income loss, and lower housing prices. High indebtedness could mean that economic recessions are deeper and longer than under lower indebtedness, though the cause of a recession is probably the more important factor. As long as the economy grows, borrowers are employed, incomes expand, and housing prices do not collapse, no major increase in loan arrears and defaults is likely. The longer term macro risk is slower growing consumer and housing sectors as well as overall economic growth.

Assets and Net Worth

The purchase of housing, consumer durables, or in the case of some unincorporated business equipment or inventory with debt results in a tangible asset representing some value. Certain debt, such as a student loan, is an investment in human capital for which there is no collateral tangible asset or assigned value.

The value of personal and unincorporated business assets is approaching $8 trillion in 2010 and is more than 750% of personal disposable income. Both measures are record highs. The value of total assets fell in 2008, for the first time since 1970, with the sharp drop in equity values and lower housing prices during the financial crisis and recession.

Net worth, assets minus liabilities, is above $6 trillion in 2010 and also at a record high and relative to income it is almost 610%, down from 638% in 2007. According to Statistics Canada, the market value of residential structures owned by persons and unincorporated business has never declined since 1970 and currently stands at $3 trillion and with a book value of mortgage debt at $1 trillion leaves $2 trillion in equity.

Since 1970, the debt-to-net worth and debt-to-asset ratios fluctuated within historical bonds with the exception of the last three years. The decline in asset values in 2008 and the increase in debt resulted in this one-time up-shift in these ratios. Since 2008, these ratios have held fairly steady and edged slightly higher. The upturn in the equity market and housing prices seen in the fourth quarter of 2010 will increase asset values and pull these ratios lower.

Recent Federal Government Measures

The federal government changed the rules for government-backed insured mortgages "to support the long-term stability of Canada's housing market and support … families saving through home ownership." The changes are:

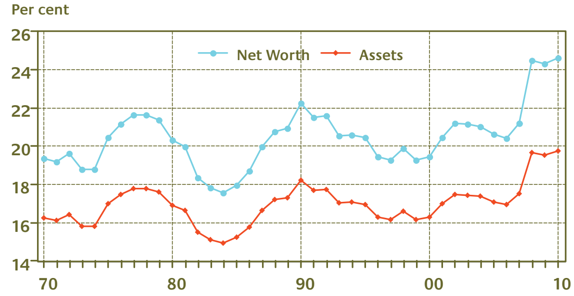
- Reduce the maximum amortization period to 30 years from 35 years.
- Lower the maximum amount that can be borrowed in refinancing their mortgages to 85 per cent from 90 per cent of home value.
- Withdraw government insurance on non-amortizing lines of credit secured by homes, such as home equity lines of credit, or HELOCs.

The adjustments to the mortgage insurance guarantee framework will come into force on March 18, 2011. The withdrawal of government insurance backing on lines of credit secured by homes will come into force on April 18, 2011.

The government's media material focused on interest payment savings and faster principal repayment or equity build-up associated with the lower amortization period, the larger equity retention by reducing the maximum loan-to-value ratio on refinancing, and the lower taxpayer risk and enhanced market stability stemming from the reduced ability of homeowners to extract equity for non-housing purchases.

A lower amortization period means less interest paid since the monthly principal and interest (P&I) are higher and it also takes more income to qualify for the same loan making it less affordable. At the current five-year mortgage rate, monthly P&I payments rise 8.3% with a 30-year amortization period compared to 35-years. The impact lessens under higher mortgage rates. Another view on this effect is to compare loan amounts with these amortization periods assuming the same monthly P&I. Using a $300,000 loan amount, the same monthly P&I at a 3.75% mortgage rate and 35-year amortization period reduces the available loan by $22,714 or 7.6%

Total Debt to Net Worth and Assets, Persons and Unincorporated Business, Canada



Source: Statistics Canada. Note: At end of period Latest: Q3-10

to $277,286. This potential purchaser with income to service a monthly P&I payment of $1,384.42 will have to select a home roughly 8% lower in price.

The impact on purchasing affordability by low-equity buyers is negative with the lower amortization period. Housing sales will be lower under the new mortgage insurance rules as fewer potential low-equity buyers can participate in the ownership market. The magnitude of the decline in sales is not certain but it is probably less than the 8% decline in affordability, since low-equity buyers are only one component of the market. However, fewer low-equity buyers restrain the ability of existing homeowners to undertake a housing transaction. The proportion of low-equity buyers varies with the housing cycle and is typically larger in the early stages of a housing recovery under low mortgage rates than in the later stages under higher mortgage rates. The current housing cycle in Canada is in its earlier stages and is operating under low mortgage rates suggesting a larger impact than otherwise. Fewer housing sales should result in less upward price pressure and slower growth in mortgage debt under the new rules.

Reducing the maximum loan-to-value ratio for mortgage refinancing lowers the amount of equity homeowners can use for a variety of purposes including home renovations, debt consolidation, lower interest costs, or other investments. According to the 2010 Annual State of the Residential Mortgage Market in Canada report by the Canadian Association of Accredited Mortgage Professionals, about one-in-five mortgage borrowers took out equity from their home with the main purposes of home renovations and debt consolidation. Under the new rule, home renovation activity will be lower and homeowners have less ability to reduce interest costs on consumer debt.

Impact of Amortization Change on Monthly Payments for a $300,000 Mortgage Loan

Mortgage Rate %	Monthly Principal and Interest ($)		30-year to 35-year	
	30-year amort.	35-year amort.	Difference ($)	Difference (%)
3.75	1,384.42	1,278.60	105.82	8.3
5.00	1,601.07	1,504.26	96.81	6.4
6.00	1,784.47	1,695.76	88.71	5.2

Source: Central 1

Impact of Amortization Change on Loan Amount at 35-year Monthly P&I

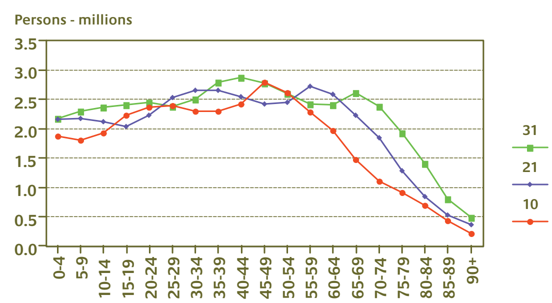
Mortgage Rate %	Loan Amount ($)		30-year to 35-year	
	30-year amort.	35-year amort.	Difference ($)	Difference (%)
3.75	277,286	300,000	-22,714	-7.6
5.00	281,860	300,000	-18,140	-6.0
6.00	285,086	300,000	-14,914	-5.0

Source: Central 1

Personal lines of credit is the fastest growing segment of consumer credit since 2000 and eliminating mortgage insurance for non-amortizing lines-of-credit will slow this growth. This impact is difficult to quantify since Canada Mortgage and Housing Corporation (CMHC) does not release information in this area. Some industry officials point out that lenders require higher credit scores by these borrowers so mortgage insurance is not needed and thus impact of this change may not be large.

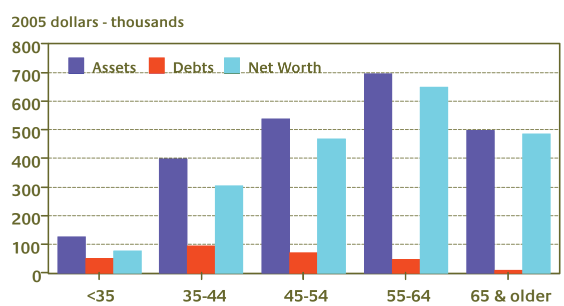
These various changes will help achieve the government's stated goals while restricting mortgage, refinance, and HELOCS credit worsening low-equity purchasing affordability and reducing consumer access and choice for productive purposes.

Population Age Structure 2010 - 2031, Canada



Source: Statistics Canada. Note: Medium growth projection scenario

Average Assets, Debts, and Net Worth by Age of Reference Person, All Family Units, Canada



Source: Statistics Canada, Survey of Financial Security 2005.

Future Trends and Issues

Some of the demand forces that drove debt up rapidly in the past will exert much less influence on the demand for credit in the future. Demographic changes point to slower debt growth since a growing portion of the population will be in the older and lower spending age groups many of which will have no mortgage debt. The large increase in female labour force participation and in the unincorporated self-employed since 1970 appears over and will grow at a much reduced pace. However, higher housing prices and a demographic-based shift to reverse mortgages will keep residential mortgages and real estate lines of credit growing faster than overall debt.

Concern about the viability of unending growth in mortgage debt goes to the core of the housing price valuation issue. Metrics such as the housing price-to-income ratio are at record highs and is taken by some to signify the presence of a housing price bubble since the gap between incomes and housing prices is widening and cannot grow indefinitely. Thus, housing is overvalued and a significant price decline is in the offing.

Without delving into a full discussion on this topic, the essence of that view is based on an inappropriate valuation measure. The price-to-income ratio is an affordability measure not a valuation metric. Another shortcoming is the implicit assumption that housing prices are determined by income growth or demand only when in fact housing prices are determined also by supply factors such as the availability of developable land, construction costs, and government regulations. The supply of housing increases only to the extent that housing prices increase and constraints allow.

Housing prices can, have, and most likely will continue to outpace incomes since supply factors will remain constrained and most markets will experience further demand increases through population and income growth. Most homebuyers are existing owners with considerable equity and higher prices are less constraining than for low-equity buyers. To cope with ever rising housing prices, low-equity buyers will opt for smaller or older or less central and less expensive housing as well as take longer to enter the market than their post-war baby–boom predecessors.

Fluctuations in housing demand are normal and on occasion the housing market will see a substantial drop in sales and prices usually the result of an economic recession or some non-economic factor. Housing cycle ups and downs aside, the long term trajectory of housing prices is upward in most Canadian markets and reflects a fundamental supply-demand imbalance. Nonetheless, mortgage debt and housing equity lines of credit will likely grow at a lesser rate in the coming decade than in the previous decade based on the expected path of housing prices and mortgage rates rising to normal levels. Worsening home purchasing affordability for low-equity and first-time buyers will hold down the increase in the homeownership rate.

It is unlikely, though, that mortgage debt will decline in dollar terms or relative to income since nothing has changed on the supply side of housing, which contributes to the long-term rise in housing prices. The multi-decade rise in the housing price-to-income (and mortgage debt-to-income) ratio essentially reflects its tighter supply-demand situation relative to all other goods and services in the economy.

By 2020, household debt is projected to rise between 60 to 70% above 2010 levels while personal disposable income increases between 50 to 55% putting debt-to-income between 160 to 165%. Its path will not be a straight line with the business and housing cycles turning negative at times causing the ratio to slow or flat line in a in recession year or declining in a severe recession. The projected rates of increase are well below those experienced in the last decade in large part due to a less robust housing price performance.

The business cycle is currently in an expansion phase that is expected to continue for another three to five years, though it is difficult to pin down the next recession. Prior to the last recession, the business cycle was longer and less prone to recessions. Accurately predicting when the next recession hits is difficult but one will likely occur before the end of this decade causing losses for both borrowers and lenders.

Lenders set aside reserves of provisions for loan losses as a normal course of business and have the ability to absorb some losses in the event of an economic or housing recession. Lenders are also required to hold a minimum amount of capital should the value of its assets decline or its liabilities rise. As of Q3-2010, the depository credit intermediation industry in Canada set aside $9.5 billion or 0.45% as allowance for losses on loans and investments. In addition, the mortgage insurance fund under CMHC and with private insurers covers a considerable amount of losses. Canada's minimum capital requirements are tougher than called for by Basel II, and all other G7 bank regulators. Bank stress tests were conducted by the federal regulator though the results were not publicly released. The Bank of Canada participated in that exercise to develop "macro" stress tests whose results have been reported in its Financial System Review.

The Bank of Canada is most concerned with a 'black swan' event hitting the economy and financial system which would send unemployment much higher and incomes lower causing credit and loan losses beyond normal levels. In this dire event, lenders might need to use capital to absorb losses and in the process restrict the flow of credit to the economy and exacerbate the recession. To the extent that there is less debt in the economy, a credit squeeze or crunch is less likely along with the various safety provisions for lenders.

Since the financial crisis, the regulatory pendulum has swung to tighten credit availability and reduce leverage particularly in the U.S. However, Canada's financial system fared well throughout the crisis due to its conservative loan underwriting practices, greater reliance on deposits for mortgage financing, and adequate capital or lower leverage of its financial institutions. In 2010, the World Economic Forum ranked Canada's banking system as the world's soundest for the third consecutive year.

This is the third change to mortgage insurance rules since the 2008 financial crisis and economic recession. In October 2008, the federal government reduced the maximum amortization period to 35 years from 40, increased the minimum down-payment to 5 percent from zero, and tightened non-monetary lending criteria. In April 2010, government lowered the maximum amount on refinance loans to 90 percent, increased the minimum down-payment on non-owner occupied loans to 20 percent, and required borrowers taking out mortgages with variable rates or fixed-rate terms less than five years to be qualified at a five-year rate.

The case for the latest mortgage insurance changes is less than convincing given the previous tightening measures and if the goal is have debt rise closer to that of income. Growth in mortgage debt would have slowed later this year and in 2012 when interest rates turn higher so it is not clear that the last round of tightening was necessary. The long-term outlook is for slower growth in debt and income but with a higher debt-to-income ratio due to rising mortgage debt. In addition, consumer bankruptcies and residential mortgage arrears are declining from their highs following the recession; the housing market is not in a price bubble; and lenders have adequate provisions for losses and more than adequate capital.

If the goal is to stop the debt-to-income ratio from rising, then additional tightening measures are needed but this runs the risk of slowing the economy to below its potential growth rate with above-normal unemployment and below-normal interest rates. Since housing is the main determinant of rising debt, it would be more effective to undertake measures that increase the supply of housing to take some pressure off housing prices. Measures to increase the financial IQ of persons on debt and credit card debt in particular would also be helpful.

A rising debt-to-income ratio is not necessarily a dangerous economic situation. Debt can be both good and bad with the difference being the use of the debt extended to sound borrowers. Good debt is used for productive purposes such as a principal residence, enhancing human capital, and business investments that generate income. Bad debt is used to pay for current consumption especially with high-interest cost revolving credit. Consolidating high cost debt into a home-equity loan is usually good debt. Borrowing to purchasing a home is one of the best forms of debt for a household since it is an appreciating asset as well as homeowners benefit from principal repayment and ownership rights and security. Housing equity is usually the household's largest source of wealth.

Within the current decade, it is conceivable that the regulatory pendulum will swing back to increasing the availability of mortgage credit to improve access to homeownership for low-equity buyers. The structure of the Canadian financial system with its sound regulations and practices will help avoid the severe consequences seen in the U.S. under rising personal and unincorporated business debt. Borrowers will need to act prudently as well.

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