How vulnerable are Québec households to interest rate increases?

Of the five main economic and financial risks identified by the Bank of Canada (BoC) at the end of 2009, the risk associated with household balance sheets is still the source of much concern. The fact that household debt has risen sharply in many countries these past few years is of course worrisome, especially since this trend did not bypass Canada or Québec. Since the end of the recession, the risk associated with the deteriorating labour market has evaporated quickly in Canada. Labour has fully recovered, pushing down the level of personal bankruptcies. Concerns about rising borrowing costs however seem to have been put aside for the time being, due to the uncertainties currently hovering over the global economy.

Despite this, the question of whether households have the capacity to deal with rising interest rates in the medium term is a core issue, since this could have major consequences on many households. This Economic Viewpoint will first present a general overview of Québécois’ debt levels for the past 10 years. This will allow us to identify the percentage of households that are more likely to have difficulties meeting their financial obligations should borrowing costs rise. Based on the methodology developed by the Bank of Canada and the microdata compiled specifically for Québec (box 1 on page 2), our analysis will help us evaluate the extent of the risk that is hanging over Québec households. Just how vulnerable are households to an increase in interest rates? Should we expect to see the number of bankruptcies swell in the next few years? Simulations carried out on three key debt indicators—using 2009 as the benchmark year—paint a much clearer picture. In a later Economic Viewpoint, we will provide a detailed portrait of Québécois’ financial position to better pinpoint the characteristics of vulnerable households. This exercise will allow us to make observations based on age groups, income brackets and assets held.

DEBT OUTPACED INCOME

As several studies have recently shown, individual debt levels have risen much faster than incomes these past few years. The debt-to-income ratio reached a peak in Canada, and this trend did not spare Québec (graph 1). Rising property values, among other things, have inflated the mortgage debt taken on by households which only adds to the level of debt they are carrying. The debt-to-income ratio has a major flaw, however. Since it does not take interest rates into account, this ratio cannot evaluate households’ capacity to make their payments to gradually pay off their debt. A relatively high debt level in a context of weak interest rates could be much easier for households to manage than the reverse, as was the case in

Graph 1 – Debt has outpaced income, especially this past decade

* Total outstanding consumer credit and residential mortgage credit

Sources: Statistics Canada, Canada Mortgage and Housing Corporation, Bank of Canada, Institut de la statistique du Québec and Desjardins, Economic Studies

NOTE TO READERS: The letters k, M and B are used in texts and tables to refer to thousands, millions and billions respectively.

IMPORTANT: This document is based on public information, obtained from sources that are deemed to be reliable. Desjardins Group in no way guarantees that the information is complete or accurate. The document is provided solely for information purposes and does not constitute an offer or solicitation for purchase or sale. The document may under no circumstances be construed as a commitment by Desjardins Group, which takes no responsibility for the consequences of any decision made based on the information herein. The prices and rates shown are for information purposes only as they may change at any time based on market conditions. Past returns are no guarantee of future performance, and Desjardins Group does not hereby purport to provide any investment advice. The opinions and forecasts contained herein are, unless otherwise indicated, those of the document’s authors and do not represent the official position of Desjardins Group. Copyright © 2010, Desjardins Group. All rights reserved.

François Dupuis
Vice-President and Chief Economist
Hélène Bégin
Senior Economist

Yves St-Maurice
Director and Deputy Chief Economist
Danny Bélanger
Senior Economist

418-835-2450 or 1 866 835-8444, ext. 2450
E-mail: desjardins.economics@desjardins.com
the 1990s (graph 2). The ratio of delinquent mortgages was much higher back then (graph 3). Even if weak interest rates meant that monthly payments were kept to reasonable levels these past few years, the situation is still quite worrisome.

Interest rates will eventually climb back up while debt levels remain high compared to income, which could be a difficult mixture to support.

**Box 1**

**Starting point: Work done by the Bank of Canada**

The Bank of Canada periodically assesses the potential financial risks tied to household debt in its *Financial System Review*, which is published twice a year. For the past few years, more in-depth analyses on the financial position of households allowed the BoC to broaden its analytic framework beyond the usual considerations. In fact, the usual debt ratios drawn from overall data on households paint a very general picture. This method does not allow us to identify the weight of debt carried by the different categories of households, or the proportion of households burdened by potentially high debt levels. For a risk analysis on payment defaults, the use of aggregate data is not very useful.

Analyzing the microdata could remedy these limits, however. Beyond the fact that households are in debt, knowing households’ resistance threshold allows us to better assess their capacity to meet their financial commitments. Knowing the full extent of the financial position of each household, within a significant sampling, enables us to evaluate how the debt burden is shared by borrowers. We can even highlight the characteristics of those most vulnerable based on the income bracket, age group and assets held. Once this breakdown is established and the ratio of households at risk is identified, we can then assess the impact of different shocks, particularly interest rate hikes, on households’ capacity to make their payments.

Ipsos Reid’s *Canadian Financial Monitor* survey, which gathers information on 1,000 households every month, or about 12,000 households per year across the country, presents a snapshot of their actual financial position. The debt carried by each household sampled is itemized by credit products, or types of consumer loan, including personal lines of credit and credit cards, and mortgage loan terms (type of product, monthly payment, duration, balance and interest rate). Other than debt, household assets are also itemized (financial assets based on investments or savings accounts and non-financial assets such as homes and automobiles). These statistics allowed the Bank of Canada to publish several detailed analyses on the evolution of household balance sheets.

Desjardins Group’s Economic Studies adapted some of these studies to the situation here in Québec. The first step consisted in tapping into the Ipsos Reid database specific to Québec for an annual representative sampling of about 2,500 households across the province. In addition to analyzing how Québécaires’ debt levels have evolved since the year 2000, risk indicators similar to those used by the Bank of Canada were built to represent Québec. Simulations were also carried out to detect the extent to which climbing borrowing costs could affect household balance sheets.
**THE CAPACITY TO PAY OFF DEBT SPEAKS VOLUMES**

To evaluate households’ debt burden more specifically, we have to evaluate the monthly payments (capital and interest) compared to income instead. This indicator, or the debt service ratio (DSR), is the benchmark used by the Bank of Canada to analyze risk associated with household debt. This barometer measures the ratio of financial obligations to reimburse debt based on gross income. Three main components have to be assessed to define the DSR: the level of debt, household income and interest rates. This can also be calculated comprehensively, including all households, or individually for each household in the survey (using the microdata bank).

The DSR can first be calculated at the aggregate level. Interpreting the outcome is limited to determining whether the risk has increased for all households. As such, the average DSR has fluctuated very little since 2000 in Québec, barely shifting from its historic average of 15.5% (graph 4). The portion of gross income set aside to reimburse debt has, as a result, remained the same for households as a whole across the province. This confirms that advancing debt has been neutralized by declining interest rates. Even if the bigger picture has not changed very much, we have to determine whether a greater number of households are in precarious situations. In this respect, the average DSR is not very telling, which is why the Bank of Canada developed a much more detailed approach.

The microdata gathered by Ipsos Reid allow us to calculate the portion of gross income earmarked to reimburse debt in each household sampled. This disaggregate approach lets us determine how debt is divided among households as well as the ratio of heavily indebted households. If payments take too big a bite out of gross income, chances are the borrower will have trouble respecting his financial commitments. The Bank of Canada recently established a discomfort zone for this. Households where the DSR exceeds the critical level of 40% are therefore considered vulnerable; in other words, they may have trouble making their monthly payments. However, this does not mean that all of them will declare personal bankruptcy, but the likelihood of this happening is relatively high. The number of bankruptcies in Québec over the past 10 years corresponds to approximately 22% of the households where the debt burden exceeded the critical limit of 40%. Those who avoid bankruptcy usually have to resort to sheer discipline to fix their finances or make arrangements with their creditors. One thing is clear, however: households with a high DSR will have more trouble honouring their financial obligations than those with a lower DSR. Even if households with a DSR above 40% seem more vulnerable, households where the ratio falls between 30 to 40% also present a potential risk (graph 5 on page 4). People can find themselves in difficult situations quickly following an unforeseen event. In fact, the higher a household’s debt ratio, the more sensitive that household is to life events such as separation, critical illness, job loss or sudden increase in interest rates.

---

**Box 2**

**Calculation method**

\[
DSR_j = \frac{\sum_i Payments_i}{Income_j} = \frac{\sum_i (\text{capital}_i + \text{interest}_i)}{Income_j}
\]

Where:

- \( DSR (j) \): household’s debt service ratio (j) or weight of household payments (j) vs. gross income;
- Payments: household payments (j) on different loans (i) = (credit cards, automobile loans, personal loans, personal lines of credit, mortgages);
- Income: total household gross income (j).

The following information is available for all loans other than credit card loans:

- Monthly payment made;
- Interest rate in effect;
- Duration in years, but not the maturity;
- Balance.
Beyond the general debt trend, a breakdown of the debt service ratio helps us better target the proportion of households that could default on their financial commitments (graph 6). Households where the DSR exceeds 40% are clearly in the minority since they fall in the shaded area (upper breakdown limit). Both curves have barely moved in 10 years, confirming that the breakdown of risks among households has evolved very little over time.

In 2009, 5.0% of Québec households had a DSR higher than the critical threshold of 40%. This percentage is below the 10-year average since 2000 (5.7%), far from an alarming situation. Even if Québécois’ debt has risen quickly in the past 10 years, the ratio of households that are likely to default on their financial commitments is almost the same thanks to the sharp decline in interest rates. Last year, the percentage of households at risk represented 115,000 homes. Usually, 22% of vulnerable households end up declaring bankruptcy. This is what happened between 2000 and 2009. This financial vulnerability indicator—developed by the Bank of Canada, and applied to Québec—is an invaluable tool to assess the risk of payment defaults, and, by extension, the level of individual bankruptcies.

In short, according to the three indicators tied to the debt service ratio, the risk associated with household debt has not increased in 10 years. The capacity of overall households to make their monthly payments has fluctuated very little, as movements in the average DSR indicate. The ratio of highly indebted households, where the DSR exceeds 40%, has been maintained at around the current level of 5%. Lastly, the portion of debt supported by this group of vulnerable households continues to hover at around 10%, such that the financial burden weighing on their shoulders has not gotten heavier. If the share of total household debt held by those most at risk had risen, the weight of their borrowing would have been much heavier to support. Fortunately, this is not the case.

**WHAT DOES THE FUTURE HOLD?**

Even if household debt has risen dramatically in the past 10 years, the burden of monthly payments does not seem to have become heavier due to weakening interest rates. The future does not appear as favourable, however. Rising borrowing costs, which we will see more of no doubt in the next few years, could have a major impact on household balance sheets. The Bank of Canada has issued several warnings on this front. The potential risk associated with debt has even been assessed using simulation exercises. The results for Canada show that a higher ratio of households would tip into the discomfort zone (DSR > 40%) with interest rates rising. Also, the share of total debt held by these same vulnerable households would be higher, which would only increase the financial burden supported by this group.

The Bank of Canada developed a dynamic model to assess the effects of several simultaneous shocks such as an increase in debt ratios, a drop in income and climbing interest rates. For the purpose of this Economic Viewpoint, which seeks to determine the impact of increasing interest rates on the financial position of Québec households, we simplified the estimation method. The simulations were carried out based on the assumption of a constant debt ratio to better isolate the impact of interest rate increases on the financial position of the most fragile households. This approach, just as meaningful, requires fewer hypotheses and allows us to isolate the effects of a single shock, i.e. rising borrowing costs.
Despite certain variances in methodology, the outcomes of simulations for Québec are comparable to those of the BoC. Movements in the three indicators seem to be tracking the same path as in the rest of the country.

The effect of rising interest rates will erode the financial capacity of Québec households to make their payments. The impact will be different on each household, however, since it varies based on the types of loan contracted, their respective maturity dates and the applicable interest rate (fixed or variable). We conducted a basic simulation covering the period between 2010 and 2015 based on our most recent interest rate forecasts. The BoC’s overnight rate, currently at 1%, would climb to 4.25% within five years. In fact, this would mean a return to more neutral interest rates (at least in the long term). For the second simulation, we accelerated the increase in the benchmark rate: the rate would climb to 6.00% by 2015. While this level may seem high, it bears noting that by the end of 2000, the overnight rate was 5.75% (graph 7).

In both cases, the portion of gross income set aside to reimburse loans would rise by 2015. The average DSR would increase by one percentage point in the basic scenario and by about two percentage points in the alternate scenario (table 1). The financial burden would therefore be more difficult to bear for all households, even if we assumed a constant debt ratio. If borrowing costs rise in line with our expectations, the share of the total debt carried by the most fragile would increase to 13% in the next five years compared to 10% today.

The ratio of vulnerable households (DSR > 40%) would also grow compared to the 5% recorded in 2009. This portion would increase gradually to 6.8% in 2015 based on the basic scenario, and reach 7.3% if interest rates climb higher (alternate scenario). Households in this situation are considered at risk of payment default, since 22% of these households usually declare bankruptcy. The number of households likely to miss their financial commitments would clearly be higher, much like

### Table 1 - Simulations of household debt indicators based on two interest rate increase scenarios

<table>
<thead>
<tr>
<th>Year</th>
<th>Average DSR</th>
<th>Ratio of households with DSR &gt; 40%</th>
<th>Share of total debt carried by households with DSR &gt; 40%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average 2000-2009</td>
<td>7.2 + 8.4 = 15.5</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>6.8 + 7.8 = 14.6</td>
<td>5.0</td>
</tr>
<tr>
<td>Basic scenario</td>
<td>Alternate scenario</td>
<td>Basic scenario</td>
<td>Alternate scenario</td>
</tr>
<tr>
<td>2010</td>
<td>14.8</td>
<td>14.8</td>
<td>5.3</td>
</tr>
<tr>
<td>2011</td>
<td>15.1</td>
<td>15.2</td>
<td>5.8</td>
</tr>
<tr>
<td>2012</td>
<td>15.4</td>
<td>15.5</td>
<td>6.2</td>
</tr>
<tr>
<td>2013</td>
<td>15.6</td>
<td>15.7</td>
<td>6.6</td>
</tr>
<tr>
<td>2014</td>
<td>15.8</td>
<td>16.0</td>
<td>6.8</td>
</tr>
<tr>
<td>2015</td>
<td>15.8</td>
<td>16.3</td>
<td>6.8</td>
</tr>
</tbody>
</table>

1: Debt service ratio: Households’ monthly payments vs. gross income. Sources: Ipsos Reid and Desjardins, Economic Studies

---

1 Due to the complexity of their approach, the difference between interest rate scenarios and possible variances between the databanks in Québec and Canada. In addition, the BoC’s simulations were carried out quarterly and stop in 2012, while Desjardins, Economic Studies carried out annual simulations for the 2010 to 2015 period.
personal bankruptcies, which could gradually climb to more than 35,000 (basic scenario) and to about 40,000 (alternate scenario), within five years. And since the number of bankruptcies has hovered around 30,000 for the past few years, this would be a substantial increase (graph 8). The increase anticipated by 2015 is certainly significant, but we have already seen similar increases in the past. During the recession of 2009, the number of bankruptcies rose by 20% compared to the previous year, before it dropped off quickly. This time, the deterioration could be persistent, however, since it was fuelled by structural changes instead of cyclical changes.

In order to consider these elements during simulations, the characteristics of the various types of loan were taken into account. This approach provides a fairly good reflection of the real situation; in other words, changes in interest rates do not necessarily have an immediate impact on monthly payments. The effects will be felt gradually as loans are renewed, which, by extension, can be an issue in the medium term on the financial position of households.

THE MAKEUP OF DEBT HAS CHANGED
To better isolate the potential impact of climbing interest rates on household debt, it is important to have a good grasp of what makes up the debt. According to the results of the Ipsos Reid survey, mortgage loans represent about 75% of Québécois’ debts in 2009. Lines of credit come in second, with conventional personal loans close behind in third place. Outstanding debts associated with credit cards and automobile leases are somewhat less than the other categories.

Bankruptcies will climb gradually, as households that are having trouble making ends meet renew their loans at fixed rates. The impact will affect those with variable-rate loans faster, especially personal lines of credit. Regardless of the scenario retained, about 7% of indebted households could have trouble making their monthly payments in the next five years. The situation could deteriorate faster, however, if the rate of household debt keeps growing (the methodology used for Québec excludes this hypothesis to better isolate the impact of rising interest rates). About 30% of Québec households will be spared the effects of rising borrowing costs since they do not have any debts (box 3).

THE DRIVING BELT OF INTEREST RATES
An increase in borrowing costs affects the various credit products differently. For most mortgage loans and conventional consumer loans, the impact will only be felt when loans are renewed. This timeframe does not affect variable-rate mortgage loans and personal lines of credit, which are directly linked to the financial institutions prime rate. For credit cards, changes in interest rates have little effect on monthly payments since these interest rates are already high.

While the spectre of debt is threatening many households, others have no reason to worry. According to the Canadian Financial Monitor survey, about 30% of Québécois have no debt whatsoever. These households have no credit products, or those who have access to such products systematically pay off their monthly balances (this applies mainly to credit card holders or to those with personal lines of credit). As a general rule, households that do not resort to borrowing, or are very disciplined in using credit, are not vulnerable to rising interest rates. These people are usually further along in their life cycle, closer to 60 years of age. Many homeowners in this age bracket have already repaid their mortgage loans in full, leaving them with considerable financial flexibility.

In order to consider these elements during simulations, the characteristics of the various types of loan were taken into account. This approach provides a fairly good reflection of the real situation; in other words, changes in interest rates do not necessarily have an immediate impact on monthly payments. The effects will be felt gradually as loans are renewed, which, by extension, can be an issue in the medium term on the financial position of households.

**Box 3**

**Some households manage to stave off debt**

While the spectre of debt is threatening many households, others have no reason to worry. According to the Canadian Financial Monitor survey, about 30% of Québécois have no debt whatsoever. These households have no credit products, or those who have access to such products systematically pay off their monthly balances (this applies mainly to credit card holders or to those with personal lines of credit). As a general rule, households that do not resort to borrowing, or are very disciplined in using credit, are not vulnerable to rising interest rates. These people are usually further along in their life cycle, closer to 60 years of age. Many homeowners in this age bracket have already repaid their mortgage loans in full, leaving them with considerable financial flexibility.

To begin with, we have to keep in mind that an eventual increase in borrowing costs will have no impact on 30% of Québec households since they do not carry any debt. We cannot, however, minimize the potential impact on 70% of households, or more than two million homes, which will be affected to varying degrees. Therefore, the analysis and simulations presented in this Economic Viewpoint focus on households that have contracted debt.
The different types of loan tied to consumer goods account for 25% of total household debt. Its weight can be hard for some households to support, however. Interest charges are usually high, especially for consumer loans and credit cards, meaning that monthly payments often take a big bite out of income. In fact, half of the average debt service ratio (DSR) involves this type of debt (table 1). In many cases, consumer debt and not mortgage debt is the straw that threatens to break the camel’s back, drawing households into financial trouble. Even if 75% of total household debt was mortgage debt, the burden is not necessarily heavier to bear since interest rates are relatively weak and mortgage payments stretch out over longer periods of time than consumer credit.

If the breakdown between mortgage and consumer credit has changed very little since the year 2000, the products involved certainly have. Fixed-rate mortgage loans are much less popular than they once were. According to the data gathered in the Ipsos Reid survey, the ratio of fixed-rate loans declined to below 70% last year compared with more than 90% at the start of the year 2000 (graph 9). Today, variable-rate mortgage loans represent about one third of the entire market. Consumer debt has also changed. The more widespread use of personal lines of credit has led to a drop in the number of traditional consumer loans. In 2009, lines of credit represented about 10% of total household debt compared to just 4% at the beginning of the decade. The opposite is true for outstanding consumer debt: its share has declined by half, from about 16% in 2000 to 8% last year (graph 10).

**INCREASED SENSITIVITY TO RISING INTEREST RATES**

These changes mean that, today, households are more sensitive to changes in interest rates. The growing popularity of personal lines of credit and variable-rate mortgage loans, which are tied to the Bank of Canada’s key rate, mean that increases are directly passed along to borrowers. Traditional consumer loans, with their popularity dwindling these past few years, have fixed rates that last for the length of the term (three to five years in most cases), which almost protects borrowers from sudden fluctuations. While the BoC’s weak prime rates have made lines of credit very attractive, the flipside is that they increase households’ exposure to the pitfalls of rising interest rates. In other respects, given that credit card debt has remained relatively stable for the past 10 years and interest rates have been subject to very few changes over time, this risk on this front does not seem to have increased.
CONCLUSION

Up to now, the rise in household debt in the past 10 years has been contained by weak interest rates. The outlook is getting darker, however, since the impending increases in borrowing costs will have far-reaching consequences on household balance sheets. Upcoming interest rate increases will not trickle down immediately to all borrowers’ monthly payments. And since the vast majority of loans have fixed rates, the impact on monthly payments will be felt as these loans are renewed. However, given the strong advance made by variable-rate credit in the past 10 years, many households will quickly feel the effects of the BoC’s rising key rates. The BoC has already issued several warnings about household debt levels and households’ capacity to withstand rising borrowing costs.

Much like the rest of Canada, the situation in Québec is not critical, but still worrisome. Should overall rates start to climb gradually, a growing number of households would reach the discomfort zone and the risk of payment defaults would increase, much like the number of personal bankruptcies. The conclusions of the work done by the BoC also call for prudence. This medium term issue—the impact of climbing interest rates—affects Québec as much as it affects the rest of Canada. The risk of a significant deterioration in households’ financial position is very real, and it is pointing upwards. And since any increase in interest rates seems to have been put aside for a few months, households have to seize this opportunity to clean up their balance sheets. If the most fragile households take advantage of this lull to put the breaks on their credit habits, this will lessen the risks associated with increasing interest rates.

BIBLIOGRAPHY


Hélène Bégin
Senior Economist

With the collaboration of:
Danny Bélanger
Senior Economist