

# Developments and Trends

## Notes

The material in this document is based on information available to **23 November 2006** unless otherwise indicated.

The phrase “major banks” in Canada refers to the six largest Canadian commercial banks by asset size: the Bank of Montreal, CIBC, National Bank, RBC Financial Group, Scotiabank, and TD Bank Financial Group.

## Assessing Risks to the Stability of the Canadian Financial System

The *Financial System Review* is one vehicle that the Bank of Canada uses to contribute to the strength of the Canadian financial system. The Developments and Trends section of the *Review* aims to provide analysis and discussion of current developments and trends in the Canadian financial sector.

The first part of this section presents an assessment of the risks, originating from both international and domestic sources, that could affect the stability of the Canadian financial system. Key risk factors and vulnerabilities are discussed in terms of any potential implications for the system's overall soundness. The second part of the Developments and Trends section examines structural developments affecting the Canadian financial system and its safety and efficiency; for example, developments in legislation, regulation, or practices affecting the financial system.

The current infrastructure, which includes financial legislation, the legal system, financial practices, the framework of regulation and supervision, and the macroeconomic policy framework, significantly influences the way in which shocks are transmitted in the financial system and in the macroeconomy, and thus affects our assessment of risks.

Our risk assessment is focused on the vulnerabilities of the overall financial system, and not on those of individual institutions, firms, or households. We therefore concentrate on risk factors and vulnerabilities that could have systemic repercussions—those that may lead to substantial problems for the entire financial system and, ultimately, for the economy. In examining these risk factors and vulnerabilities, we consider both the likelihood that they will occur and their potential impact.

Particular attention is paid to the deposit-taking institutions sector because of its key role in facilitating financial transactions, including payments, and its interaction with so many other participants in the financial system. For instance, these institutions assume credit risks with respect to borrowers such as households and non-financial firms. Thus, from time to time, we assess the potential impact that changes to the macrofinancial environment may have on the ability of households and non-financial firms to service their debts.

Risk factors and vulnerabilities related to market risks are also examined. The potential for developments in financial markets to seriously affect the financial position of various sectors of the economy and, ultimately, to disrupt the stability of the Canadian financial system is assessed.

# Financial System Risk Assessment

**T**his section of the Review presents an assessment of the risks arising from both international and domestic sources bearing on the stability of the Canadian financial system. The objective is to highlight key risk factors and vulnerabilities in the financial system and to discuss any potential implications for the system's overall soundness.

## Key Points

- The global economic outlook continues to be favourable.
- The financial positions of the Canadian financial, non-financial corporate, and household sectors remain solid.
- A key short-term risk is the possibility of an abrupt slowing in the U.S. economy, which might affect the financial health of customers of Canadian banks.
- Other (low-probability) risks include the possibility of a disorderly resolution of global imbalances and a significant correction in the prices of risky assets.
- The Canadian financial system appears to be in a good position to withstand these potential shocks.

## Overall Assessment

Our overall assessment is largely unchanged from that in the June *Financial System Review* (FSR). Canada's financial, non-financial, and household sectors are in good shape. This reflects the continued prudent behaviour of companies in the financial and non-financial sectors, as well as a generally favourable economic environment in Canada and abroad.

Recently, a number of encouraging external developments have lent support to the base-case scenario of continued solid growth in Canada and abroad and have lessened the risks to financial stability. First, although the weakening in the U.S. housing sector has been greater than expected, growth in U.S. investment and exports seems to be solid. Second, economic activity in Europe and Japan has picked up, while that in Asia remains strong, suggesting that global economic activity should remain robust despite the slowing of the U.S. economy. Energy prices have also declined significantly; while this adversely affects Canada's terms of trade, it also helps to support growth in oil-importing countries and to ease inflation pressures in Canada and abroad. As well, the increase in volatility in financial markets observed at the time of the June FSR was short-lived, and since then markets have been surprisingly calm.

### Potential risks

The continued favourable risk assessment is predicated largely on the expectation of continued solid economic growth in Canada and abroad.

We see three key risks to financial stability. One of these is a new short-term risk: the possibility that the slowing of the U.S. economy could be sharper than currently anticipated, which might affect the financial health of certain customers of Canadian banks. The other risks are those identified in the June FSR: (i) a disorderly resolution of global imbalances; and (ii) a significant and widespread reduction in risk appetite. Thus, the overall level of risk has increased somewhat, despite the fact that the risk of a disorderly resolution of global imbalances seems to have diminished.

The Bank's base-case scenario described in the October *Monetary Policy Report* factored in some slowing in the U.S. economy associated with the

weakness in the housing sector. At present, it appears that non-housing demand is continuing to grow at a solid pace. There is, however, a risk that the slowing in the U.S. economy could be greater than currently expected if the decline in the housing sector became more pronounced, or if the weakness in that sector spread to consumption spending.

A significant slowing in the U.S. economy would affect Canadian banks indirectly through its effect on the creditworthiness of Canadian exporters to the United States. It would also affect Canadian banks through their loans to U.S. consumers and businesses and through their exposure to U.S. financial institutions, which might also be hurt by an abrupt slowing of the U.S. economy. However, the strength of the balance sheets of Canadian banks should permit them to absorb this.

The base case referred to above assumes that there will be a gradual and orderly unwinding of global imbalances. The rotation of demand away from the United States towards the rest of the world, and the stabilization of the U.S. current account deficit over the past year, appear to make such an outcome more likely than in June. Nevertheless, the imbalances remain large, and there is a danger that growth outside the United States might falter. Thus, there is still a small risk of a less benign outcome involving abrupt movements in currencies and in the prices of other financial assets, increased protectionism, and much slower world economic growth than expected.

A significant reduction in world economic growth arising from a disorderly resolution of global imbalances would adversely affect Canada. The financial positions of Canadian export-oriented and related sectors would be weakened, increasing credit risk in the Canadian financial system. Even the rotation of demand away from the United States to the rest of the world is likely to have some impact on Canadian exports, given the high proportion of exports that go to the United States. Problems in export-oriented and related sectors would impinge on employment and, thus, might impair the ability of some households to service their debts. A disorderly resolution of global imbalances would increase volatility in financial markets. While the strong balance sheets of most sectors of the economy would help them to weather these shocks, there could be a sharp tightening of credit conditions and an associated repricing of risk.

Markets have demonstrated resilience this year in the face of rising concerns about inflation in May and June, increased tensions in the Middle East in July, and a large loss at a hedge fund in September. Nevertheless, there is still some uncertainty about how markets would react to a sudden significant decrease in risk appetite that could happen, for example, if there were a resurgence of uncertainty about the strength of global economic activity. This would affect the prices of risky assets in Canada and the position of Canadian holders of these assets. This risk remains at much the same level as it was at the time of the June 2006 FSR.

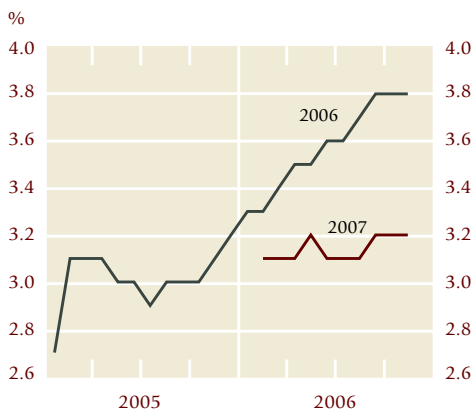
### *Canadian financial situation*

Canadian banks remain in a good position to withstand shocks, since they are well capitalized and are posting strong profits. Credit quality remains good, with non-performing loans at a very low level. Our forward-looking indicator for the sector suggests that the market is viewing the financial position of the major Canadian banks as strong.

The position of the non-financial corporate sector overall is still very favourable. Aggregate profits remain at a high level. Firms are using these profits to finance investment, reduce debt, and accumulate liquid assets. However, the slowing of the housing sector and auto sales in the United States will exacerbate the already difficult position of many companies in the Canadian wood products and auto manufacturing sectors. As in the June FSR, our indicators are signalling some possible weakening ahead in the creditworthiness of the non-financial corporate sector, although from a very high level.

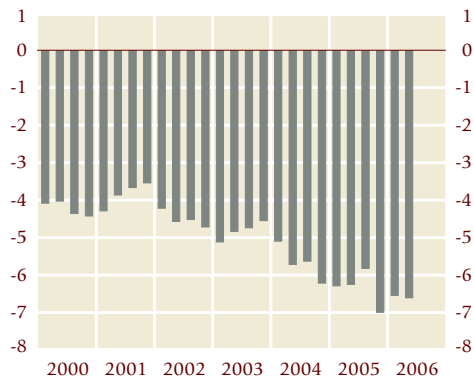
Household sector debt continues to increase at a rapid pace. With rising debt and interest rates, the household debt-service ratio has risen. Nevertheless, the ratio remains at a relatively low level. Updated assumptions based on an analysis of microdata have resulted in a downward revision in our estimates of the debt-service ratio back to 1999. These microdata also show that the situation of the most vulnerable households has improved slightly over the last six years. The continued rapid growth in household credit and the escalation in housing prices in Alberta, however, suggest that the financial position of the household sector bears watching.

**Chart 1 Evolution of Consensus Estimates for Annual Global Economic Growth\***



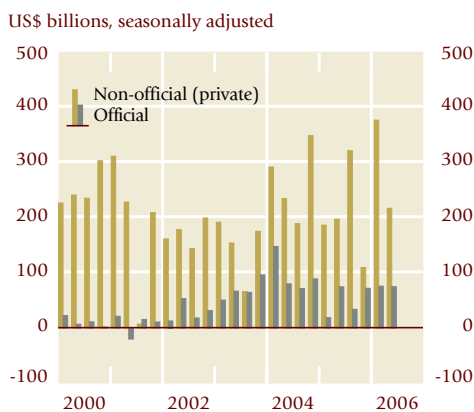
\* This estimate covers 46 countries. Country weights are determined using country GDPs converted at 2005 market exchange rates.  
Source: Consensus Economics Inc.

**Chart 2 U.S. Current Account**  
Per cent of GDP



Source: U.S. Bureau of Economic Analysis

**Chart 3 Foreign Inflows**



Source: U.S. Bureau of Economic Analysis

## The Macrofinancial Environment

### The international environment

Although the U.S. economy is projected to slow over the coming year, there are signs of stronger activity in Japan and the euro area, as well as a continued robust expansion in emerging economies. Thus, the outlook for global growth remains favourable (Chart 1). This is generally supportive of an orderly resolution of global imbalances. However, risks to financial stability arising from the cooling U.S. housing market may have risen since the June FSR.

### Global imbalances

There are signs that conditions facilitating an orderly resolution of global imbalances are now falling into place: the rotation in global growth away from the United States has begun; developments in interest rate differentials may also encourage a depreciation of the U.S. dollar; and recent data revisions suggest that the U.S. current account deficit may be peaking (Chart 2). In the second quarter of 2006, the external deficit stood at 6.6 per cent of GDP, essentially unchanged from the 2005 average.

The risk of a disorderly adjustment remains small. There are no indications of waning foreign investor confidence in U.S.-dollar-denominated assets. Indeed, private sector inflows have reached all-time highs over the past two years (Chart 3). Moreover, much of the increase in inflows over this period has come from private sector agents in advanced countries (Chart 4), somewhat alleviating concerns that the United States had become too dependent on official financing from emerging economies. Indeed, recent data suggest that the extent of foreign central banks' purchases of U.S. federal debt has receded from its 2004 peak, supporting official announcements of a gradual diversification of reserves away from U.S. assets. Financial markets have taken these public announcements in stride, indicating significant resilience.

Nevertheless, the possibility of a disorderly adjustment remains. The ongoing rotation of demand is encouraging, but it will need to be sustained. Moreover, while the U.S. current account deficit may be peaking, the level of imbalances is unprecedented. Foreign holdings of U.S. assets reached over one-fifth of world GDP

(excluding the United States) last year and continue to grow. The larger the global current account imbalances, the larger the adjustment to reduce them will need to be and the greater the risk that the process will be disorderly. An abrupt change in investor expectations, triggered by a severe slowdown in either China or the United States, or some other low-probability event, could potentially disrupt global financial markets.

### The U.S. housing market

Attention has recently focused on the cooling U.S. housing market. The anticipated slowdown in residential investment is well under way (Charts 5 and 6), and consensus forecasts are calling for a further moderation in housing activity in 2007.

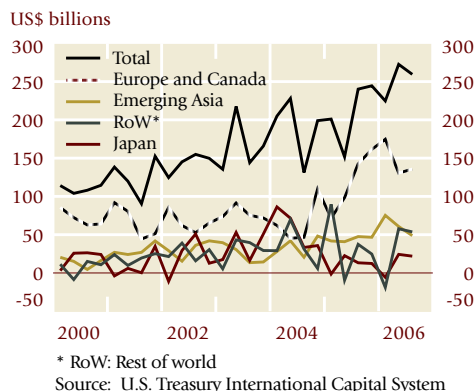
The housing market affects GDP directly as residential investment and indirectly through its effects on the wealth and expenditures of households. The housing market has supported U.S. consumption over recent years. The rapid rise in housing prices helped to offset the effects on household wealth of the sudden decline in equity values in 2000–01, and led to a surge in home equity withdrawals (Chart 7). The preponderant role of housing in household wealth raises concerns that the wealth effects of a housing slowdown could be large. In fact, equity withdrawals and mortgage refinancings are now declining.

Innovative mortgage products have become much more popular since 2000. Adjustable-rate mortgages now make up approximately 30 per cent of all outstanding mortgages in the United States, while subprime mortgages accounted for 20 per cent of all new mortgages in 2005 (Chart 8). The increased use of these mortgage products may pose concerns for financial stability, since they have higher delinquency rates and are more sensitive to increasing mortgage rates.<sup>1</sup> Moreover, a fall in housing prices may lead to negative equity for households with high loan-to-value mortgages.

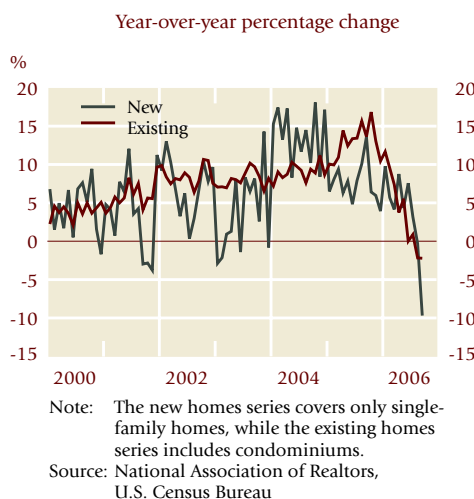
To date, non-performing loans at financial institutions have remained low by historical standards. Both provisioning and capital positions at financial institutions in the United States are

1. This point was also discussed in the section on the international environment in the June 2006 issue of the FSR.

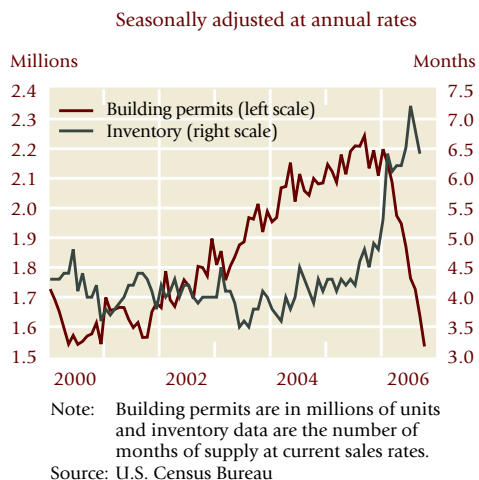
**Chart 4 Net Purchases of U.S. Long-Term Securities by Foreigners**



**Chart 5 U.S. Median Selling Price for Housing**

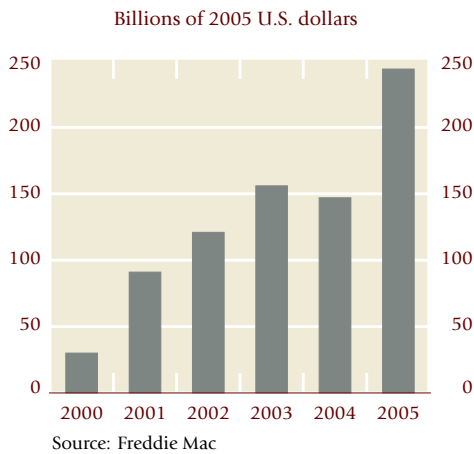


**Chart 6 United States: Building Permits and Inventory of New Single-Family Homes**

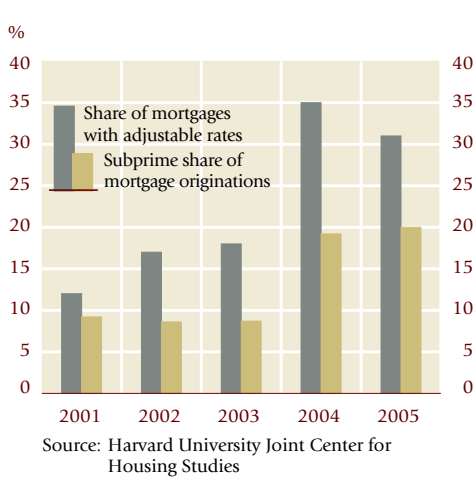




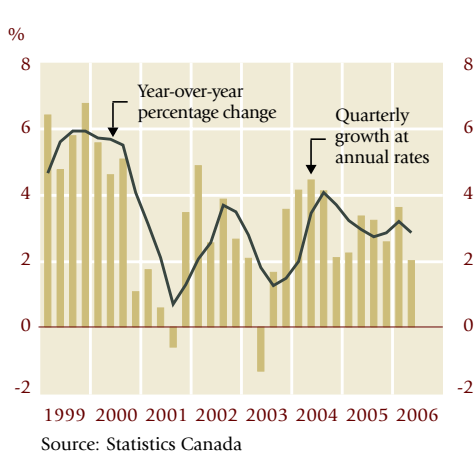
**Chart 7 United States: Real Home Equity Cashed Out at Refinance**



**Chart 8 United States: Adjustable-Rate and Subprime Mortgages**



**Chart 9 Real GDP Growth: Canada**



ample, on average, indicating that they are well positioned to handle an increase in default rates.

There is a risk that the slowing of the U.S. economy could be more pronounced than currently anticipated if the decline in the housing sector was greater than expected or if the weakness spread to consumption expenditures. A sharper slowing in the U.S. economy could affect Canadian banks both directly and indirectly. It would significantly affect Canadian export sales (80 per cent of which are to the United States) and, thus, the creditworthiness of Canadian export-related sectors. There could also be some impact on Canadian banks through their direct exposure to U.S. consumers and non-financial businesses. (As of June 2006, loans by Canadian banks to these sectors represented 12 per cent of their total assets.) Canadian banks could also be affected indirectly if U.S. banks were hurt significantly by an abrupt slowing in the U.S. economy, since the claims of Canadian banks on U.S. banks amounted to 2 per cent of their total assets as of June 2006. But given the strong profit and capital position of the Canadian banks, they appear to be in a good position to cope with these effects.

## Canadian developments

### Canadian economy

The growth of Canada's real GDP (expressed at an annual rate) eased to 2 per cent in the second quarter of 2006 from an average of just over 3 per cent in the second half of 2005 and the first quarter of this year (Chart 9). Growth in final domestic demand is expected to continue to underpin the economic expansion in Canada through 2008. Net exports will likely exert a significant drag on growth through 2007, but this effect should diminish over time.

The Canadian economy is continuing to adjust to the appreciation of the Canadian dollar, the high prices of many commodities, and strong competition from some Asian countries. Energy and metals prices have been quite volatile over the past year (Chart 10). Although the high prices for both crude oil and metals chiefly reflect strong growth in global economic activity, some uncertainty remains about whether these prices can be maintained. In particular, oil prices have eased since mid-July, reflecting expectations of reduced supply risk and some easing in the prospects for global oil demand.

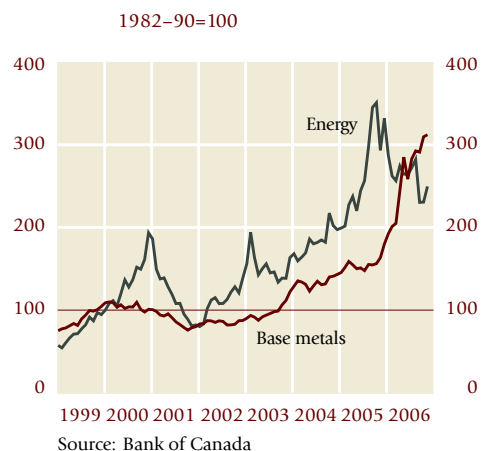
### Corporate sector

The financial position of the aggregate non-financial corporate sector continued to be healthy in the third quarter of 2006. Profitability, while easing from the high level reached in the preceding quarter, remained relatively strong, and leverage decreased further, reaching a low level (Chart 11).

Profitability has remained at a high level in most sectors with a low exposure to international trade, as well as in the oil and gas extraction and other mining sectors. However, overall profitability for the other industries with a high exposure to international competition, which has been relatively weak in recent years, decreased markedly in the third quarter (Chart 12).

As in June, it is our view that there could be some weakening in corporate credit quality going forward. While corporate bond spreads remain at a very low level, downgrades as a percentage of ratings actions have increased slightly: from 61 per cent in 2005 to 65 per cent for the year to date (Chart 13). The microdata indicator developed by the Bank of Canada, which measures the share of assets concentrated in companies considered to have weak profit margins, liquidity ratios, and leverage ratios, also points to the possibility of worsening corporate credit quality (Chart 14). This share rose to about 8 per cent in 2005, which is well below the peak in 2001, but higher than the levels seen through the last half of the 1990s. This increase appears to be driven by the materials and telecommunications sectors. A second and more current indicator, based on the contingent claims approach, is also signalling a possible increase in risk in the non-financial corporate sector.<sup>2,3</sup> While the rise in this indicator partly reflects movements in the indicators for the

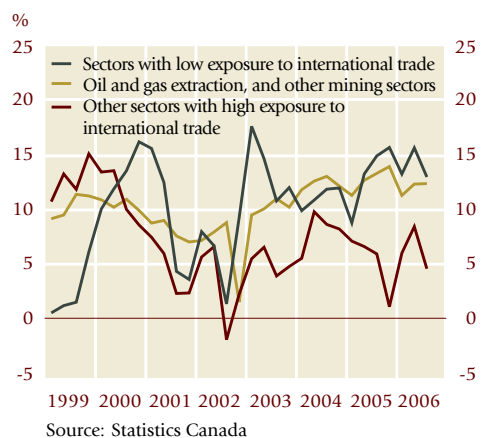
**Chart 10 Bank of Canada Commodity Price Index**



**Chart 11 Financial Position of the Canadian Non-Financial Corporate Sector**



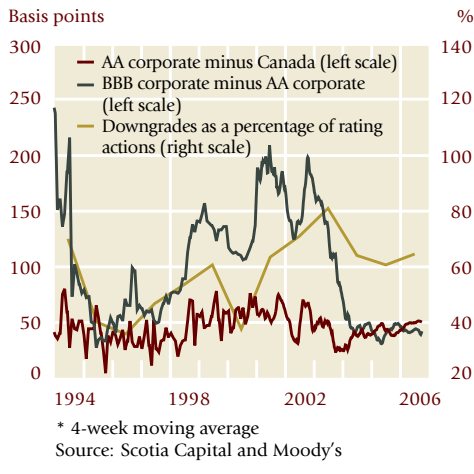
**Chart 12 Rate of Return on Equity for Selected Sectors**



2. The report containing details of the microdata indicator was published in the December 2005 *Financial System Review* (pp. 37-42), and the contingent claims approach (CCA) was discussed in the June 2006 issue (pp. 43-51.)
3. These indicators were used in the analysis of the corporate sector in the June 2006 FSR (p. 11). At that time, balance sheet information for 2005 was available for only about one-half of the sample companies. The indicator now includes information for virtually all companies. The CCA estimate now includes balance sheet information on a larger number of companies than was the case in June, as well as market data up to 17 November 2006.



**Chart 13 Bond Yield Spreads\* and Ratings Actions**



retail trade, forestry, accommodations, and transportation sectors, the result should be viewed with some caution, since it is driven primarily by an increase in volatility in the oil and gas sector between 2005 and 2006.<sup>4</sup>

**Industry**

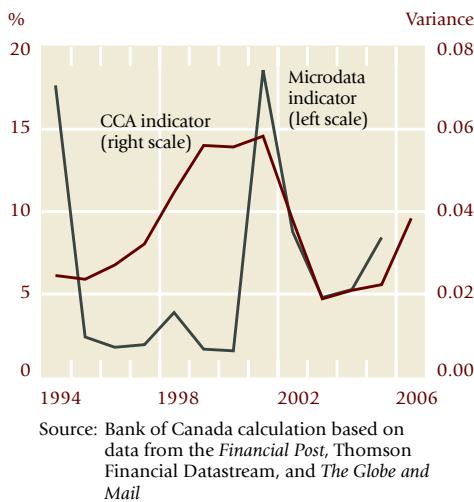
A limited number of industries, such as auto manufacturing, wood and paper products, and computer and electronics manufacturing, have been experiencing considerable financial stress over most of the period since 2001.

The Canadian auto manufacturing industry registered a small loss in the third quarter (Chart 15). Profitability is likely to remain weak over the near term. One important contributing factor is the decline in U.S. sales of SUVs and trucks, which typically generate higher profit margins for some manufacturers than do most other vehicles. Still more cutbacks in production likely took place in the second half of 2006, and further restructuring of operations by Ford and several auto parts companies have recently been announced.

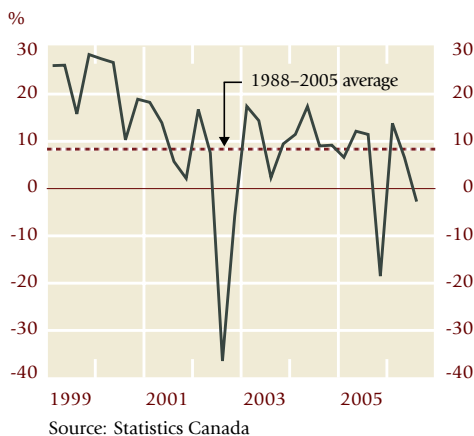
Profitability in the wood and paper products industry remained low in the first three quarters of 2006 (Chart 16). Given the impact of the slowdown in the U.S. housing market on lumber prices and export volumes, profitability is likely to remain weak over the near term. Indeed, many firms have recently announced further layoffs and restructuring, especially of their lumber operations. The Canada-U.S. Agreement Ending the Softwood Lumber Dispute will have a positive near-term effect on the financial positions of lumber producers as a result of the return of at least 80 per cent of duties paid since 2002. But while the U.S. duties were revoked, lumber producers are now subject to an export charge of 15 per cent, since lumber prices are currently well below the threshold level for such charges under the Agreement.

The electronics and computer manufacturing industry registered a low rate of return in the third quarter of 2006 (Chart 17). While sales volumes are at relatively high levels, the industry continues to face intense competitive pressures from firms in emerging markets. Consequently, consolidation and restructuring are under way, especially in the global telecommunications

**Chart 14 Microdata and CCA Indicators**



**Chart 15 Return on Equity: Automotive Manufacturing**



4. The oil and gas sector accounts for about 35 per cent of the market value of assets included in the sample.

equipment industry. These developments may lead to further restructuring of operations in the Canadian segment of this industry.

Grains producers have continued to be adversely affected by past weakness in global grains prices, the appreciation of the Canadian dollar, and rising input costs. As well, the size of the grains and oilseeds crop was down from the record level of 2005 as a result of hot, dry weather conditions on the Prairies. However, the quality of the crop appears to have been above average, and grains prices have also risen markedly in recent weeks.

Canadian banks hold both securities and loans of companies in these sectors, and thus are exposed to both credit and market risk; however, it is unlikely that difficulties in these sectors would have significant adverse effects on the Canadian financial system. Moreover, many of these firms are continuing to undertake major adjustments in their operations to improve their profitability over the longer term.

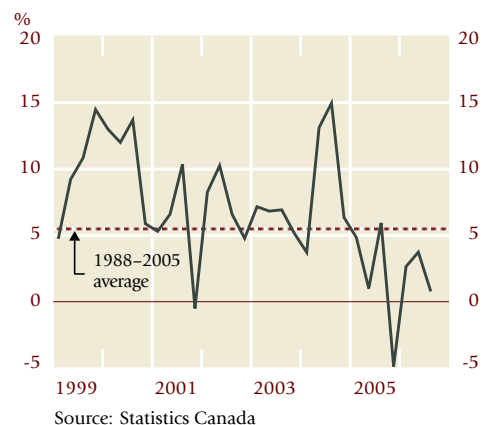
### Household sector

Household debt continues to grow at a robust pace (about 10 per cent year over year), although it has slowed slightly in recent months. This slowing is partly due to a deceleration in the still buoyant rate of growth in personal lines of credit. Growth in household credit has been very strong in Western Canada. While this is mainly associated with population movements and growing incomes, the dramatic increase in housing prices in that region has also been a factor.

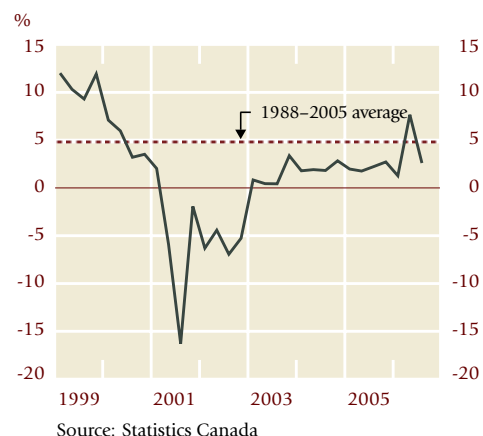
The increase in debt has contributed to a further rise in the debt-to-income ratio. (For a discussion of some of the factors that may have contributed to this increase since the mid-1980s, see Box 1.) With higher interest rates and debt levels, the debt-service ratio (DSR) rose again in the first half of 2006 (Box 2). However, it remains at a relatively low level, suggesting that the financial health of households remains sound.

The interest rates on many outstanding mortgages are below current mortgage rates. As these mortgages are renewed, it is likely that many householders will see a higher interest rate on their mortgages. Thus, the debt-service ratio will likely continue to rise.

**Chart 16 Return on Equity: Wood and Paper Manufacturing**



**Chart 17 Return on Equity: Electronics and Computer Manufacturing**

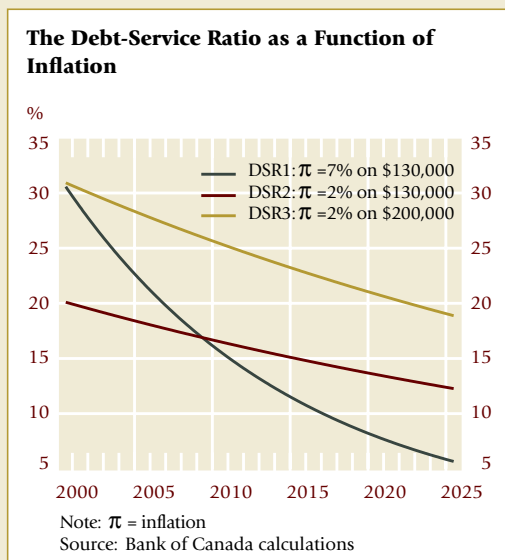


## Box 1

## Low Inflation and Canadian Household Indebtedness

The ratio of debt to disposable income of the Canadian household sector has increased systematically, from 67 per cent in the mid-1980s, to more than 120 per cent currently. Financial deregulation and technological advances, by increasing competition for loans and lowering transactions costs, have certainly contributed to the higher level of debt.

An environment of low inflation has also contributed.<sup>1</sup> By reducing the front-loading of nominal interest payments on long-term debt (such as mortgage debt), lower inflation has relaxed credit constraints for some borrowers, allowing them to increase their ratios of debt to disposable income.



The chart illustrates the impact of different levels of inflation on the evolution of the debt-service ratio (DSR)<sup>2</sup> over time on a \$130,000 mortgage loan with a fixed interest rate and an amortization period of 25 years. It is assumed that the typical household income is \$50,000 at the beginning of the mortgage contract, and that it increases at the same rate as inflation thereafter. The DSR1 line shows the evolution of the DSR for such a mortgage loan (and income growth) when inflation is 7 per cent (the average level over the 1970–85 period), while the DSR2 line shows the DSR when inflation is at 2 per cent. Both scenarios

assume that the real interest rate of the mortgage is 4 per cent.

Given the assumed size of the mortgage, the mortgage payments reach a threshold of 30 per cent in the high-inflation regime but fall far short of that threshold (20 per cent) in the low-inflation world.<sup>3</sup> Consequently, the amount of money that can be borrowed before the DSR reaches 30 per cent is higher when inflation is low. For example, the debt-service limit of 30 per cent is reached with a \$130,000 debt when inflation is high, as it was in the 1970s and early 1980s. However, when inflation is low (2 per cent), the same 30 per cent limit would be reached only with a much higher debt—\$200,000—assuming that real interest rates remain at 4 per cent.<sup>4</sup> This is illustrated by the DSR3 line in the chart.

The upward trend in the ratio of debt to disposable income should occur only during the transition from a high-inflation environment to one of low inflation. After this transition period, the aggregate ratio of debt to disposable income should stabilize at a new level consistent with the low nominal interest rate environment.

A key issue from a financial-stability perspective is that the DSR stays higher for a longer period in the low-inflation environment (compare DSR3 with DSR1 in the chart). This is because nominal income is not rising as rapidly when inflation is low, while nominal payments remain fixed. Hence, vulnerable households remain vulnerable for a longer period when inflation is low.

As noted above, lower inflation allows households to borrow more. However, many may choose not to increase their debt to the full extent possible. Rather than increasing debt by an amount that would result in a debt-service ratio equivalent to what they would have had in a high-inflation environment, households might choose instead a debt level that would result in a debt-service ratio between DSR2 and DSR3. It thus seems plausible that the DSR distribution may have shifted to the left (that is, the proportion of households with a high DSR may have declined) as inflation fell, reducing vulnerabilities in the household sector.

1. This analysis is inspired by Guy Debelle (June 2004), "Macroeconomic implications of rising household debt," BIS Working Paper No. 153.  
2. Interest and principal payments as a proportion of disposable income

3. For insured mortgages, CMHC requires mortgage payments (principal and interest) plus heating costs, property taxes, and 50 per cent of applicable condominium fees to represent not more than 32 per cent of the household gross income. Financial institutions use similar eligibility criteria for uninsured mortgages.  
4. Since lower inflation also tends to be associated with less inflation uncertainty and a lower inflation risk premium, real interest rates would also be lower in the low-inflation world, pushing up the amount of debt that individuals could take on still more. This is not taken into consideration here.

**Box 2**

**Updating the Estimate of the Aggregate Debt-Service Ratio**

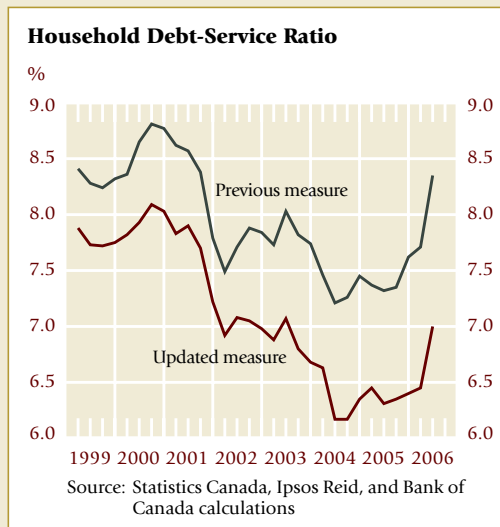
In the FSR, the debt-servicing capacity of households is typically gauged by the aggregate debt-service ratio (DSR), which is calculated as the share of disposable income devoted to interest payments on debt.

The estimate of the aggregate DSR used in the FSR is based on a number of assumptions.<sup>1</sup> Recently, information from the Canadian Financial Monitor survey, conducted by Ipsos Reid Canada, has allowed us to refine and update our assumptions about the relative importance of the types of debt that households have and the interest rates that they are paying. The estimate of the aggregate DSR from 1999Q1 to 2006Q2 has been updated based on these new assumptions.

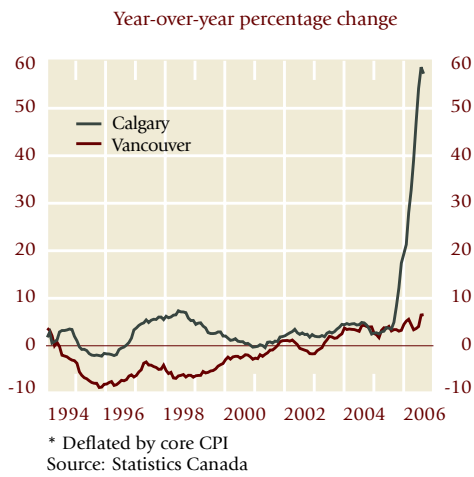
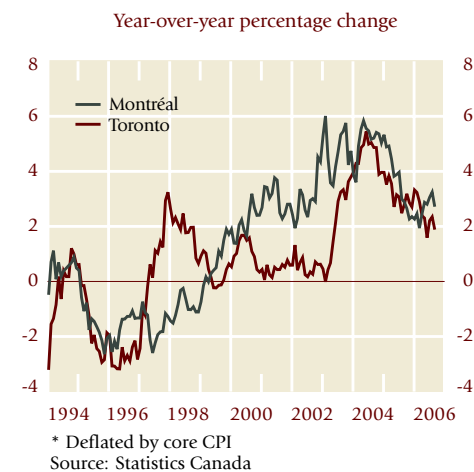
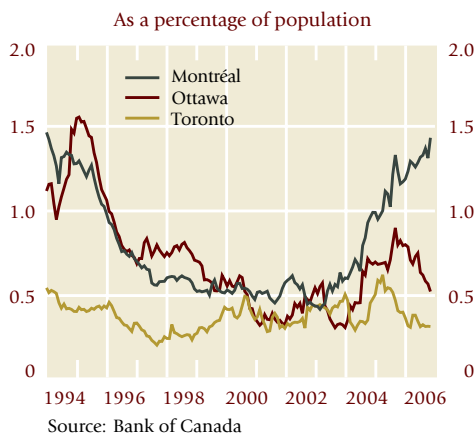
Our estimated aggregate DSR has been revised down over that period. This is largely due to (i) lower effective interest rates on consumer loans, owing to the growing importance of secured personal lines of credit; (ii) more pronounced discounting on mortgage loans, especially variable-rate mortgages, than previously assumed; and (iii) larger weights on variable-rate mortgages over the 1999–2005 period than previously assumed.

The new estimate of the DSR in 2006Q2 is 7.0 per cent—1.4 percentage points lower than our previous measure (see chart below).

This suggests that, overall, households are in a better position to service their debt than previously thought.



1. See Box 1 in the December 2004 FSR.

**Chart 18 Real Prices for New Houses, Western Canada\*****Chart 19 Real Prices for New Houses, Central Canada\*****Chart 20 Recently Completed Unoccupied Dwellings, Central Canada**

## Housing prices

Despite higher interest rates, average housing prices have continued to increase in Canada, fuelled by income growth and strong employment. Recent innovations announced by mortgage issuers could further support housing demand and prices, since they may lead to lower monthly mortgage payments.<sup>5</sup> Aggregate housing prices, however, mask significant regional differences: while the pace of increase in real housing prices remains very strong in Western Canada, especially in Alberta, it has decelerated significantly in Central Canada.

The increase in housing prices in Alberta has been supported by strong income growth, employment gains, and in-migration, causing housing demand to outstrip supply (Chart 18). There was also some evidence of flipping among buyers over the summer, suggesting some speculation, particularly in Calgary.<sup>6</sup> There are now some indications that price increases in Alberta are slowing as more supply comes on the market, although they continue to increase at a rapid pace. It is thus important to continue to monitor developments closely.

The pace of increase in housing prices in Central Canada has continued to slow gradually, as housing supply is catching up with demand (Chart 19). Rising listings in resale markets suggest that the pace of the price increase should continue to moderate. Nevertheless, with little evidence of widespread excess supply, as measured by the number of unoccupied dwellings as a ratio of population (Chart 20),<sup>7</sup> no major widespread reversal in housing prices is expected.<sup>8</sup>

5. These changes include an increased maximum amortization period for insured mortgages, split fixed/float mortgages, and interest-only mortgages.
6. Some observers have suggested that many purchases of new condominiums in Calgary were for investment purposes.
7. A steady increase in this ratio in Montréal explains the marked slowdown in the pace of increase in real housing prices in Montréal.
8. There could, however, be imbalances in certain segments of local housing markets. See the Highlighted Issue on condominium prices in the June 2006 FSR (p. 14).



## Highlighted Issue

### An analysis of the financial position of the household sector using microdata

Prepared by Umar Faruqui, Simon Lai, and Virginie Traclet

Household credit accounts for about 70 per cent of the total Canadian-dollar loan exposure of Canadian banks. Consequently, assessing the financial health of Canadian households is an important part of our assessment of risks in the banking sector and in the financial system as a whole. This is especially true in the current context of steadily rising household indebtedness, with the aggregate ratio of debt to income currently standing at 124.7 per cent.

Our past analysis, based on debt-service and debt-to-asset ratios calculated using aggregate data, suggests that financial system risks relating to the Canadian household sector appear to be low. But aggregate data can mask information about the underlying distribution of debt, especially information about the proportion of vulnerable households; i.e., households that could be particularly affected by negative shocks. This Highlighted Issue supplements our past analysis by using microdata to examine the distribution of debt indicators across households (by income and age groups). This analysis supports the view that, overall, the Canadian household sector seems to be in good financial health and, thus, should not pose a major threat to the stability of the Canadian financial system.

#### The data

The microdata used here come from the Canadian Financial Monitor (CFM), a survey conducted by Ipsos Reid Canada that provides detailed information on household balance sheets. The survey is distributed throughout the year. About 12,000 households participate annually, which represents a response rate of approximately 35 per cent. CFM data are available beginning in 1999.

The CFM is available on a timely basis, while Statistics Canada's Survey of Financial Security (SFS) is conducted infrequently.<sup>9</sup> CFM data are, therefore, useful for analyzing recent develop-

ments. However, the most recent results should be interpreted with some caution, because data are available only for the first half of 2006 and, thus, the sample for that year is smaller.<sup>10</sup>

For our analysis, households are divided into five income groups and four age groups, as defined in Table 1.

Two elements suggest that the quality of CFM data is satisfactory. First, a comparison of microdata from the 1999 CFM with microdata from the 1999 SFS shows that CFM and SFS data on gross income, mortgage debt, and consumer debt (which are particularly important for our analysis of the debt-service ratio) are broadly comparable. The asset holdings reported by CFM, however, are lower than those reported by SFS. Second, as illustrated by Table 2, the distribution of debt and assets by age and income groups are consistent with expectations: (i) close to half of total household debt is held by middle-aged households (age group 2); (ii) the debt of higher-income households (income group 5) is large relative to their size in the population; and (iii) asset holdings increase with income.

#### An analysis of the distribution of various debt indicators

Household indebtedness is traditionally gauged using three indicators: (i) the debt-to-income ratio; (ii) the debt-service ratio, which measures the fraction of their income that households must devote to servicing their debts; and (iii) the debt-to-asset ratio, which shows to what extent debt is backed by assets. Microdata allow us to analyze the distribution of these indicators (i.e., to see how they vary across income groups and how they have evolved over time) and to assess the proportion of vulnerable households (i.e., households that could be more severely affected by negative shocks, because they have either high debt-service ratios and/or high debt-to-asset ratios). The analysis in this Highlighted Issue is based only on households that have debt.

CFM data indicate that the debt-to-income ratio of households across all income groups is currently higher than in 1999. At the same time, they indicate that the proportion of households

9. The 1999 SFS was the most recent available at the time of writing.

10. In the first half of 2006, 5,930 households were surveyed, which compares with an annual target of 12,000 households.



Table 1

**Definition of Age Groups and Income Groups**

	1	2	3	4	5
Age groups	Below 35	Between 35 and 49	Between 50 and 63	64 and over	
Income groups (\$) <sup>a</sup>	Below 32,500	32,500-57,499	57,500-84,999	85,000-124,999	Above 125,000

a. Income is measured by gross family income.

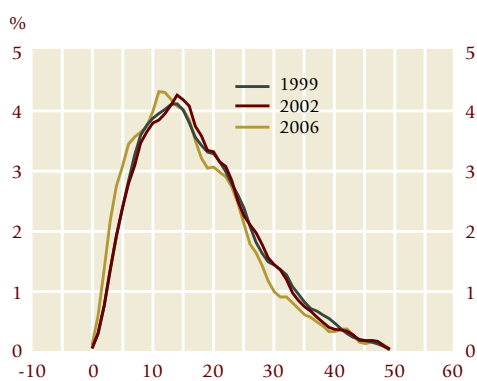
Table 2

**Distribution of Debt and Assets by Age and Income**

Per cent <sup>a</sup>

	Age group									
	1 (22.4%)		2 (36%)		3 (22.6%)		4 (19%)		Total	
Income group	Debt	Asset	Debt	Asset	Debt	Asset	Debt	Asset	Debt	Asset
1 (29.6%)	2.3	0.9	2.5	1.8	1.5	2.7	1.0	4.1	7.3	9.5
2 (27.7%)	7.3	2.7	8.9	5.7	3.6	5.9	1.4	6.9	21.2	21.2
3 (13.1%)	6.2	2.1	7.2	4.8	2.7	4.3	0.6	3.5	16.7	14.7
4 (17%)	9.1	3.6	14.0	9.6	4.6	6.9	0.6	4.0	28.3	24.1
5 (12.6%)	5.7	2.9	14.9	13.2	5.4	9.9	0.5	4.5	26.5	30.5
Total	30.6	12.2	47.5	35.1	17.8	29.7	4.1	23.0	100	100

a. The numbers in brackets represent the proportion of households in each income and age group relative to the whole population.

**Chart 21 Distribution of the Debt-Service Ratio, Evolution Over Time**

with debt has fallen somewhat and is now 75 per cent, compared with 78 per cent in 1999. Thus, the rise in the household debt-to-income ratio occurred not because a larger proportion of households are indebted, but because indebted households are carrying more debt.

The second indicator used to assess household indebtedness is the debt-service ratio (DSR), which is calculated here as total debt payments (interest and principal payments on debt) divided by gross household income. As illustrated in Chart 21, there are more people with a low DSR than with a high DSR, which suggests that debt sustainability should not be an issue for the large majority of households. However, the distribution of the DSR by income group over 1999–2006 suggests that the proportion of low-income households (group 1) devoting a large fraction of their income to debt payments is higher than that of households with higher incomes (Chart 22).<sup>11</sup>

Despite the increase in overall household debt compared with income, the situation of the most vulnerable households has marginally improved (Table 3). Data for the proportion of vulnerable households (i.e., households with a DSR above some vulnerability threshold)<sup>12</sup> show that: (i) the proportion of households with a DSR above 23 per cent has decreased in the past two years and is significantly below the peak value in 2000; and (ii) while the proportion of households with a DSR above 40 per cent increased in the first half of 2006, it is still at about the average since 1999. Overall, the proportion of total debt held by vulnerable households is at its lowest level for the whole sample period.

11. Pooled data, rather than individual years, were used to examine the distribution of the DSR by income group because of problems associated with small samples.
12. Vulnerable households are defined using two different vulnerability thresholds for the DSR. The first threshold, which is commonly used in the literature, is reached when debt payments exceed 30 per cent of household net income, which translates into a 23 per cent threshold for our DSR, which is calculated using gross income. (We make the assumption that disposable income is about 75 per cent of gross income.) The second threshold—commonly used by financial institutions—is reached when total debt payments exceed 40 per cent of household gross income.

There are more households with a high DSR in Western Canada (i.e., Manitoba, Saskatchewan, Alberta, and British Columbia) than in the rest of Canada. In British Columbia, this might be explained, at least partly, by higher housing prices in Vancouver. However, thanks to sustained income growth in those provinces, this has not resulted in a rise in the proportion of vulnerable households in Western Canada.

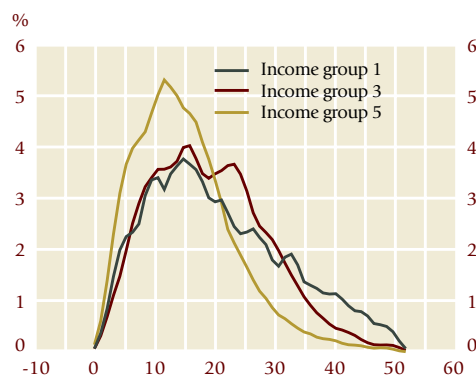
Overall, the DSR distribution suggests that despite rising debt and rising short-term interest rates, the financial position of the household sector has recently shown marginal improvement.

The last indicator used to assess household indebtedness is the debt-to-asset ratio (DAR), which is calculated as total debt divided by total assets.<sup>13</sup> The distribution of the DAR suggests that debt and asset holdings are relatively well matched; i.e., households that have debts also have assets (recall Table 2, left column). We define vulnerable households with regard to the DAR as households with a DAR above 2, which is consistent with the fact that, from 1987 to 2004, the average DAR of insolvent households in Canada hovered around 2 (Office of the Superintendent of Bankruptcy Canada 2006).<sup>14</sup> As illustrated in Table 4, the proportion of vulnerable households (DAR above 2) has risen since 2004. This has been accompanied by a rise in the share of total debt held by these vulnerable households. There is no benchmark for the proportion of vulnerable debt above which there is a risk for the financial system. But since the level of vulnerable debt accounts for 3.6 per cent of household debt, we do not think that the situation poses an increased risk to the financial system. A focus on households that are vulnerable with regard to both the DSR and the DAR supports this view: the debt held by households that have both a DSR and a DAR above vulnerability thresholds accounts for 2.8 per cent of total household debt, using the 23 per cent DSR vulnerability threshold, and for less than 0.4 per cent of total household debt, using the 40 per cent DSR threshold.

13. The DAR is interpreted with some caution since, as mentioned before, asset data from CFM may underestimate true asset data.

14. Assets in the OSBC study include: house, financial assets, cars, furnishings, and personal assets.

**Chart 22 Distribution of the Debt-Service Ratio by Income Group**



Source: Ipsos Reid and Bank of Canada calculations

**Table 3**

**Proportion of Households with a DSR above Vulnerability Thresholds**

	Proportion of households with DSR>23% <sup>a</sup>	Share of total debt held by households with DSR>23% <sup>b</sup>	Proportion of households with DSR>40% <sup>a</sup>	Share of total debt held by households with DSR>40% <sup>b</sup>
1999	29.3	40.5	2.6	4.9
2000	31.2	43.8	4.6	6.3
2001	30.6	43.8	3.9	5.8
2002	28.4	41.1	3.0	4.6
2003	29.2	39.8	2.7	4.3
2004	26.3	36.5	3.6	5.6
2005	25.1	34.7	2.6	4.0
2006	25.2	34.4	3.2	4.0

a. As a percentage of total households with debt  
b. Vulnerable debt as a percentage of total household debt

**Table 4**

**Proportion of Households with a DAR above the Vulnerability Threshold (2)**

	Proportion of households with DAR>2 <sup>a</sup>	Share of total debt held by households with DAR>2 <sup>b</sup>
1999	4.7	0.6
2000	5.1	0.6
2001	5.2	0.8
2002	4.7	1.1
2003	5.2	1.9
2004	6.6	3.6
2005	6.8	3.1
2006	6.9	3.6

a. As a percentage of total households with debt  
b. As a percentage of total household debt

Overall, this analysis broadly supports our past conclusion: Canadian households seem to be in rather good financial health, with debt largely held by households with sufficient income and/or assets. Therefore, the household sector should not pose a major threat to the stability of the Canadian financial system, at least in the short term.

## References

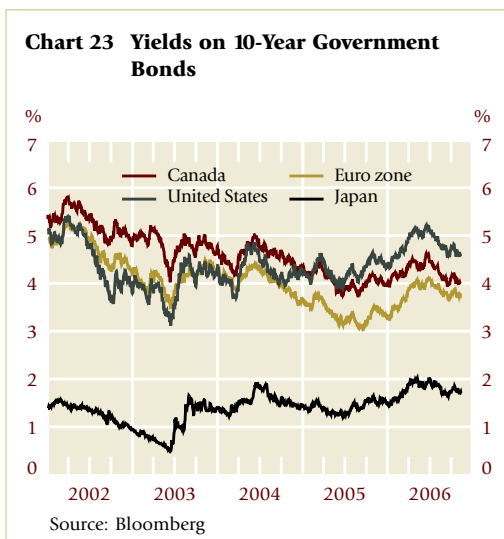
Office of the Superintendent of Bankruptcy Canada. 2006. "An Overview of Canadian Insolvency Statistics, up to 2004." Available at <http://strategis.ic.gc.ca>

## The Financial System

### Financial markets

Prices for a number of commodities and riskier assets, including those for global equities, declined sharply in May and June. In a historical context, the market turbulence at that time was relatively minor, with the prices of many risky financial assets remaining above the levels that prevailed at the start of the year. Since the end of June, equity prices have again generally been appreciating. Although the prices of some commodities, particularly energy, have declined since the June FSR, they have done so in an orderly manner. Overall, despite the repricing in May and June, risk appetite remains generally high. As such, there is still some concern, first expressed in the December 2005 FSR, that market risk may be underpriced.

The market turbulence in May and June can be partly attributed to greater uncertainty about the macroeconomic outlook, coupled with market concerns that monetary policy might need to be tightened by more than anticipated to ward off inflationary pressures. This increased level of uncertainty has since largely dissipated, with financial markets generally expecting a slowing in the economies of industrialized countries to restrain inflation and to reduce the need for any significant tightening of monetary policy. This reduction in inflation concerns has contributed to the recent declines in the yields on long-term government bonds in all major industrialized countries (Chart 23). In addition, even though global policy rates have increased and further modest increases are expected in some countries, global economic growth has



remained resilient, providing a strong fundamental backdrop for financial-asset prices.

While there is some evidence that investors are paying closer attention to fundamentals (e.g., differentiating among emerging markets), there is little indication of an overall reduction in investors' risk appetite. This most recent period of market turbulence seems to have had little impact on investors' appetite for high-yield, less-liquid assets. Numerous indicators suggest that market participants assess risks to be relatively low and/or that they have a healthy appetite for risk. For example, the implied volatility of the S&P (VIX) and spreads on emerging-market bonds have both fallen back to historically low levels (Chart 24).

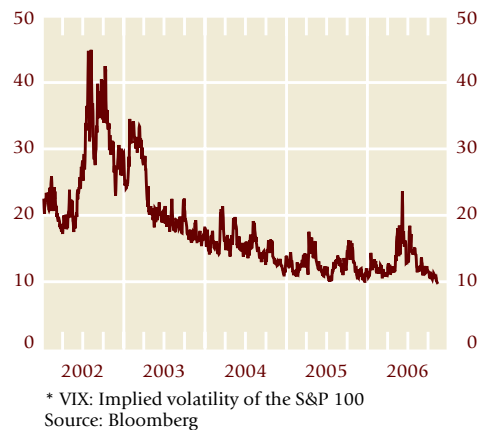
This healthy risk appetite may reflect improvements in risk management and a reduction in systemic risk arising from new financial products, new hedging possibilities, and a higher degree of global capital mobility. Nevertheless, it is still possible that volatility and risk premiums could rise abruptly, perhaps triggered by lower-than-expected global economic growth or higher inflation, resulting in a more substantial and widespread decline in asset prices.

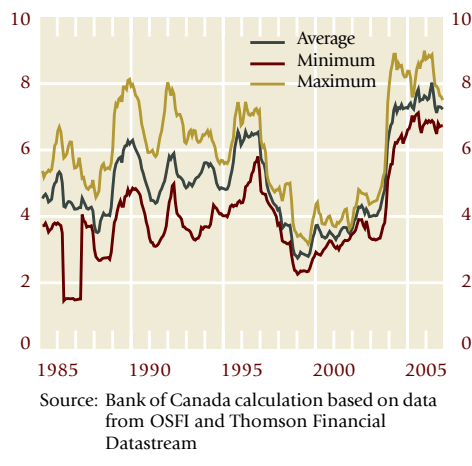
### Financial institutions

The large Canadian banks remain very profitable and well capitalized, enjoying record profits through the first three quarters of fiscal 2006. The banks have been generating an underlying return on equity of about 20 per cent, on average.

These strong profits have been broadly based. The domestic personal and small business side of the banks' operations has continued to perform strongly. In addition, growth in corporate lending has increased somewhat in 2006. Banks continue to benefit from very firm credit quality in their retail and corporate loan portfolios, in spite of such potentially adverse factors as the strong Canadian dollar and high oil prices. Securities underwriting and trading activity have also been favourable for earnings. Financial intermediation spreads, which had been declining for some time, are starting to stabilize. Some of the Canadian banks have continued to make investments and strategic moves aimed at enhancing the profitability of their retail banking and wealth-management operations in the United States.

Chart 24 Implied Equity Volatility\*



**Chart 25 Distance to Default for Major Banks**

Market indicators support the view that Canadian banks are financially healthy. For example, a measure of the perceived riskiness of banks based on the Merton contingent claims approach shows that the banks are in a strong financial position (Chart 25).<sup>15</sup>

The three large Canadian life and health insurance companies also enjoyed firm profits in the first three quarters of 2006. The companies recorded strong operating results in both their protection (individual and group) and wealth-management products, although weaker equity markets in the second quarter affected variable annuity sales to some extent. They have also been benefiting from the strong global economy, given their geographic diversification (although the strong Canadian dollar had some dampening effect on the Canadian-dollar value of profits earned in the United States), and they continue to explore expansion opportunities overseas. The life and health insurance companies are well capitalized and enjoy strong credit quality in their fixed-income portfolios.

The Canadian securities industry reported record profits in the first half of 2006, with operating profits up 43 per cent over the same period a year ago. However, profits in the second quarter were 20 per cent lower than in the robust first quarter. This reduction was largely due to the stock market pullback and increased market volatility in the spring, which adversely affected trading profits.

15. This measure was discussed in the June 2006 FSR.

# Important Financial System Developments

**T**his section of *Developments and Trends* examines structural developments affecting the Canadian financial system and its safety and efficiency.

## Financial Markets

### Principal protected notes

Principal protected notes (PPNs) are a growing class of investment products that have a fixed term to maturity and offer a rate of return based on the performance of an underlying investment, typically hedge funds, mutual funds, or stock market indexes. One of the main characteristics of this type of financial instrument is a guarantee that the holder will recover the capital invested if the note is held until maturity.<sup>16</sup> The investor is not, however, guaranteed to receive any income in addition to this principal. The ability to earn a profit depends on the performance of the underlying investment, net of fees and other expenses paid to the guarantor, sponsor, fund manager, or other institution involved in creating the product.

The stock of Canadian PPNs roughly doubled between 1999 and 2004 to reach \$21 billion.<sup>17</sup> This financial product widens the spectrum of investment opportunities available to retail investors by making it possible to gain exposure to vehicles such as hedge funds without having to make a large investment. PPNs also provide investors interested in gaining exposure to some risky—and potentially high-performing—

investments with an opportunity to do so while, in principle, eliminating the downside risk.

As with any other financial asset, investors purchasing PPNs need to understand the characteristics of the instrument. The Investment Dealers Association (IDA) and the Canadian Securities Administrators (CSA) are concerned that, given the increasing complexity of PPNs, disclosure standards may not be sufficient to properly inform prospective investors about the structure of these instruments and about the various factors affecting cash flows, such as fees. This makes it more difficult for investors to assess the value of these notes. The IDA and the CSA are also concerned that investors can buy some types of PPNs from salespeople who are not required either to meet the same proficiency standards as registered investment advisers or to ensure that the investment products sold meet the specific needs of the client.

### Securities transfer legislation

This past May, the legislative assemblies of Ontario and Alberta passed legislation to modernize the systems of rules governing the transfer and holding of securities in their respective provinces. These new Securities Transfer Acts are both modelled on Article 8 of the U.S. Uniform Commercial Code and are broadly similar. Other provinces are expected to follow suit. The objective is to have a largely harmonized framework across provinces—and between Canada and the United States—to facilitate capital flows across jurisdictions.

This improvement in the legal foundations that support securities transactions is crucial for the efficiency of the financial system. Modernizing legislation on securities transfer became a priority after previous attempts by Canadian provinces to catch up with progress made internationally

16. Often, PPNs are not insured by the Canadian Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec. In these cases, the guarantee is supported by the creditworthiness of the guarantor—generally a Schedule I or Schedule II bank or a credit union—and by the security backing it.

17. Source: Investor Economics



resulted in a patchwork of laws that were inconsistent across jurisdictions. More specifically, the Canadian system continued to rely on the concepts of possession and delivery of negotiable security certificates. These concepts cannot adequately deal with book-entry settlement systems, the indirect holding of securities (i.e., through an intermediary), or the direct holding of securities without certificates, all of which have become an integral part of modern-day reality. The new system replaces outdated concepts of transferring securities held on the books of financial intermediaries through deemed transfers of possession with a new set of legal rights arising from holding securities positions in accounts with the intermediary. The legislation also clearly determines which jurisdiction's law will govern securities transfers that have connections to more than one jurisdiction. This stronger legal framework is expected to increase confidence in the system for transferring and holding securities, particularly for cross-jurisdiction transactions.

### **Proposal to strengthen the enforcement of securities law**

The Task Force to Modernize Securities Legislation was established in June 2005 by the Investment Dealers Association to examine investor protection, corporate governance requirements, access to capital, regulatory burden, and enforcement in Canada. Its goal was to recommend revisions to Canadian securities legislation and regulation to achieve a dynamic, fair, efficient, and competitive capital market. In its October 2006 report, the Task Force recommended 65 Canada-wide reforms, 34 of which relate to the enforcement of securities law.

The recommendations on enforcement encompass multi-level reform across all jurisdictions and emphasize co-operation with respect to resources, evidence, and information. The Task Force envisions a national approach to enforcement in order to develop expertise, ensure the effective use of resources, and foster an independent and accountable enforcement process. A co-operative national enforcement program could also set enforcement priorities and develop reporting and data-collection systems so that quantitative analyses and performance evaluations could be conducted by an independent research body.

The Task Force indicates that ensuring the credibility of securities regulation in Canada through vigorous enforcement will "attract risk-averse investors to our markets, and thereby increase liquidity and correspondingly reduce the cost of capital to Canadian issuers." Policy-makers in Canada are encouraged to "step up" to the challenge and make changes in the regulations governing capital markets and their enforcement.

## **Highlighted Issue**

### **Lessons learned from international experiences with market transparency**

*Prepared by Lorie Zorn*

Market transparency is often defined as the degree to which trading-related information is publicly disseminated in a timely manner. It encompasses price and quantity details that are available before a trade occurs (pre-trade transparency) and details about the actual transaction (post-trade transparency). Transparency is an important consideration,<sup>18</sup> since it affects the quality of financial markets and, ultimately, the economic well-being of a country.

The Bank of Canada has been a proponent of enhanced transparency in fixed-income markets for some time (Dodge 2004–05; 2005). By increasing participants' information about market conditions, transparency typically allows fixed-income markets to operate more efficiently, providing direct benefits to the Canadian financial system, as well as helping the Bank to fulfill its responsibilities in monetary policy and financial stability and in managing the federal government's debt.

At the same time, the Bank also recognizes that greater transparency will influence the provision of market liquidity and can, at some point, reduce market liquidity and efficiency. For example, transparency can directly affect the risks and costs of making markets. Given the nature of the securities and the participants in fixed-income markets, market-makers are needed to

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18. Market quality reflects the implicit and explicit costs of trading and is affected by informational efficiency, volatility, and liquidity, as well as by transparency. See Vu (2003) for a discussion on transparency and market quality.

facilitate trading. This role is played by investment dealers, who commit their own capital to meet investor trading demand. Following a trade, dealers will typically redistribute some of their inventory among their peers to reduce exposure to potential price changes. This inventory management is hindered when competing dealers know the extent of each others' positions, thereby increasing the cost of market-making and, in turn, the costs of trading for investors. Thus, the quality of fixed-income markets depends on a delicate balance between the benefits of greater transparency and any negative impacts on liquidity stemming from such an increase.

Enhanced transparency can result from both regulatory inducement and market-led innovation. In certain countries, transparency in fixed-income markets has advanced more rapidly than it has in Canada. But the relative influence of regulators and the industry on transparency varies widely in these countries.

Canada can benefit from the experiences that other countries have had with market transparency by encouraging the positive aspects and limiting the potential for negative consequences. To inform future policy considerations relating to transparency in fixed-income markets, this article examines the relationship between regulation and transparency, as well as the effects of imposed changes in transparency on market quality.

### *Regulation and transparency*

In most developed countries, the regulatory environment for transparency in fixed-income markets has been shaped by two common experiences. First, regulators and policy-makers became more attuned to transparency issues as electronic trading and data dissemination increased in the 1990s. More recently, as the Enron-era market scandals raised issues of investor protection, regulators focused their efforts on providing investors with more trading-related information. Country-specific influences have helped to shape different regulatory models for transparency in fixed-income markets.

In the United States, high-profile problems in fixed-income markets and active political interest have resulted in detailed rules for transparency, specifically for corporate and municipal bonds. However, U.S. Treasury securities are the exception. In the late 1980s, a Congressional

review of the Treasury market included an evaluation of the accessibility of trading-related information. The securities industry pre-empted likely regulatory action to impose transparency rules by establishing GovPX in 1992.<sup>19</sup> Since then, further industry-led initiatives have resulted in a well-functioning U.S. Treasury market, characterized by a high degree of pre-trade transparency without any regulation regarding transparency.

Other industrialized countries do not have an extensive regulatory framework for transparency in fixed-income markets. In the European Union, where policy-makers have focused on the integration of financial markets, transparency rules are not as detailed and currently apply only to debt that is traded on an exchange. Stricter transparency requirements for equities will be implemented in November 2007, but the issue is still under review for other securities. European policy-makers have recognized that debt markets are structurally different from equity markets and, as such, warrant separate consideration.<sup>20</sup>

Within the European Union, the United Kingdom has examined the transparency of fixed-income markets extensively over the past five years. Although limited rules were implemented a few years ago for bonds traded on electronic trading systems, U.K. securities regulators have recently determined that the level of transparency now delivered, particularly pre-trade transparency, is sufficient for wholesale market participants. Based on their assessment that market failure has not occurred, U.K. regulators have concluded that more extensive regulation of transparency is not necessary for U.K. debt markets.<sup>21</sup>

In Australia, regulators have explicitly followed a "light-touch" approach to debt market issues,

19. GovPX Inc. is an initiative by the major U.S. bond dealers and inter-dealer brokers (IDBs) to consolidate and distribute quotation and transaction information from IDB trading systems. This information is available to the public via the Internet, as well as through commercial vendors of information.
20. The European Commission is required to publish its decision on whether or not to proceed with regulations for debt market transparency by the autumn of 2007.
21. U.K. regulators found no evidence of inefficiency in the price-formation process nor of a failure of best execution in U.K. wholesale bond markets. See U.K. FSA (2006).

including transparency. Australian fixed-income markets have functioned well and, on that basis, it has been sufficient for regulation merely to point to the desirability of transparency rather than to mandate specific requirements.

Overall, in terms of regulatory intervention to enhance transparency, the approach of other industrialized countries varies widely, with the United States at one end of the scale and Australia at the other. Although Europe is currently in between, it is not certain what its eventual position will be until its review of non-equity markets has been completed.

### *Transparency delivered*

Given the different regulatory influences and approaches, one might expect the United States, with its detailed, rules-based framework for securities regulation, to have a very high level of market transparency. This is certainly the case. But an abundance of trading-related information is also available in the European Union, where relatively modest regulatory requirements are currently in effect. In the end, the high level of market transparency in these two jurisdictions results mainly from industry innovation rather than from regulation. Not only are their fixed-income markets highly developed and competitive, but there is an extensive amount of electronic trading and data dissemination. In Australia, where electronic trading in bonds is not as widespread, the level of transparency is naturally lower.

### *Natural experiments in transparency*

How have actual changes in transparency influenced market behaviours and dynamics? The academic literature is dominated by studies of so-called natural experiments with transparency in equity markets, and the impact on market liquidity is often examined. In terms of transparency in fixed-income markets, the literature to date encompasses only one event—the implementation of transparency requirements in the U.S. corporate bond market. There are no studies of transparency in government bond markets, probably because of the limited number of transparency rules for government bonds. Given the available body of research, transparency in markets with a dealership structure (i.e., where dealers are market-makers) is most relevant to fixed-income markets.

Three sets of studies examine the effects on market liquidity of changes in transparency in dealer markets. The effects are typically measured in terms of transactions costs, represented by the difference between bid and ask prices: lower transactions costs or smaller bid-ask spreads are associated with greater market liquidity.

The first set of studies examines the effect of the 1997 introduction of Order Handling Rules on the U.S. Nasdaq market,<sup>22</sup> which were designed to significantly increase investor access to pre-trade information. Five different papers found that, on the whole, the Rules prompted more competitive behaviour among dealers, and that both quoted bid-ask spreads and realized transactions costs declined as a result.

The second set of research examines changes in the publication rules for stocks traded on the London Stock Exchange (LSE).<sup>23</sup> Finding the appropriate delay for the dissemination of trade details was motivated by a desire to protect the inventory-management function of LSE market-makers and, hence, to preserve large-size/block trading at the exchange. A number of authors found that adjusting the timeliness of post-trade publication for LSE stocks did not have an adverse effect; in fact, prices were largely unaffected by these changes.

The third set of studies analyzes the introduction of post-trade transparency in the U.S. corporate bond market as part of the TRACE initiative.<sup>24</sup> Of the four papers made public to date, none indicate a negative impact on liquidity. For the most part, transactions costs declined for those bond trades published on TRACE—particularly for small-sized trades—

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22. The rules required dealers to display the best price quotes and limit orders across Nasdaq and electronic communications networks.
  23. Over a 10-year period, large-size trades intermediated by dealers were subjected to five different publication regimes. This ranged from immediate publication of price and size at the beginning of the period, to a 24-hour delay for price publication; there is currently a 60-minute delay for both price and quantity.
  24. Under the Trade Reporting and Compliance Engine (TRACE), the dissemination of details on price and volume for an initial segment of corporate bond trades began in July 2002, with gradual expansion to nearly all corporate bond trades and reductions in dissemination delays over the following 3-year period.

relative to those of other corporate bonds. The reasons given for this vary: some authors indicate that the negotiating power of investors increases with more information; some find that transparency increases price competition among dealers; others note that trading is more widely dispersed among dealers after the cost of acquiring information falls.

In general, the academic research suggests that the *introduction* of transparency in a dealer market does not adversely affect market quality. It seems to increase liquidity, as measured by lower trading costs. Yet, the LSE studies imply that when there is already some transparency in a market, *further* enhancements may be of little benefit to liquidity. Thus, altogether, the research seems to support the widely held theory that transparency engenders declining benefits to market liquidity, to the point of an eventual trade-off once the optimum level has been surpassed.

Caution must be exercised when considering the results of these studies. First, since changes in transparency often occur in tandem with other changes, it is difficult to isolate the effects of transparency on market liquidity and to draw firm conclusions. For example, some attribute the improvements in transactions costs for corporate bonds found by the TRACE studies to increased trading in credit derivatives over the past few years, rather than to increased transparency. These credit instruments can reduce the cost to dealers of providing liquidity in the underlying corporate bond market. This cost reduction may, in turn, be passed on to investors in the form of tighter bid-ask spreads.

Second, the literature examines transparency for equities and corporate bonds, which are not only different from each other, but also from other assets, such as government debt securities. Different market characteristics across asset classes imply differences in the exposure of dealers to transparency-related liquidity risks and, hence, differences in the appropriate level of transparency. Moreover, there can even be differences across markets that trade in similar securities. For example, U.K. regulators have concluded that the implementation of TRACE-like transparency rules would not have the same effects in the United Kingdom as in the United States, owing to the different makeup of the

U.K. and U.S. corporate bond markets.<sup>25</sup> So, observations stemming from one particular market cannot necessarily be extended to other markets.

### *Relevance for Canada*

The experiences of other countries, to date, demonstrate that transparency can have benefits for market quality and that both regulators and the industry have a role to play. What is not yet clear is the appropriate level of transparency for fixed-income markets and how this can be achieved, particularly how it might be or should be translated into specific rules.

Stakeholders might focus on the following key points when considering transparency issues in Canada.

Transparency in fixed-income markets warrants separate consideration from transparency in equity markets. The unique trading structure of debt markets implies a unique approach to achieving appropriate transparency, and regulators in both the United States and the European Union have realized this. There are also differences in participation and trading practices between the various sectors of the fixed-income market (e.g., corporate bonds versus government bonds), which suggest different approaches to transparency.

Regulatory intervention should be based upon indications of market failure, as well as on indications that the benefits from regulation will be greater than the costs. The view of U.K. and Australian regulators is that mandatory transparency may not be necessary when a fixed-income market is functioning well. Moreover, market-led innovation can provide solutions to transparency outside of regulation.

The widespread adoption of trading technologies by market participants is an important component of enhanced transparency. U.S. and

25. For example, there is a lower proportion of direct retail participation in the U.K. corporate market, and dealer activity in the United Kingdom tends more towards a principal (market-maker) basis rather than an agency (or brokered) basis as in the United States. This implies that U.K. dealers are more exposed to the risk that greater transparency will lead to lower liquidity.



European experience illustrates that the more participants use electronic trading and data-dissemination services and the more sophisticated these become, the greater is the level of transparency. In assessing the means to address transparency issues, policy-makers should consider the state of technological development, and, if regulation is imposed, it should not stifle future gains from advances in technology.

Pre-trade transparency is valuable to investors and interferes less with the market-making function. More importantly, markets that have a high degree of pre-trade transparency, such as the U.S. Treasury market, can be very efficient. Regulators in the United States and the United Kingdom recognize that pre-trade information can be just as representative of market prices as post-trade information.

### *The current state of transparency in Canada's fixed-income markets*

Canadian regulators, policy-makers, and other stakeholders have been considering transparency in fixed-income markets for many years. As in other countries, the debate intensified in Canada owing to a number of factors, including the appearance of electronic trading systems and an increase in regulatory focus on retail investor issues. Resolution of debt-transparency issues, from a regulatory perspective, is evolving. Currently, transparency rules are applied only to certain corporate bonds, while government securities are exempt until 31 December 2006.<sup>26</sup> Even so, the Canadian requirements for corporate debt transparency are relatively extensive when compared with those of other major countries.<sup>27</sup>

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26. Transparency is addressed under National Instrument 21-101 *Marketplace Operation*, National Instrument 23-101 *Trading Rules*, and their companion policies (collectively, the ATS Rules). Amendments to transparency rules for government securities were proposed by the CSA in July 2006. The proposal, along with a joint response by the Bank of Canada and the federal Department of Finance, is available at: [www.osc.gov.on.ca/Regulation/Rulemaking/Current/Part2/Comments/21-101/com\\_21-101\\_index.jsp](http://www.osc.gov.on.ca/Regulation/Rulemaking/Current/Part2/Comments/21-101/com_21-101_index.jsp)

27. In the United States, the only information required for corporate and municipal bonds is information on completed trades. There are no requirements for federal government bond trades. In Canada, transparency rules in effect for corporate bonds include both pre-trade and post-trade requirements.

Despite the absence of mandatory transparency for government securities in Canada, industry initiatives have increased the level of transparency available to market participants. Over the past few years, several electronic trading systems and commercial data services firms have been launched in Canada, resulting in a substantial increase in information on fixed-income trading. In addition, the prices of benchmark government securities are now publicly available on several Internet sites. Although technological advances in trading and data dissemination have only recently taken hold in Canada, this industry-driven momentum seems to be building.

### *Looking ahead*

Policy-makers worldwide are still grappling with issues related to transparency in fixed-income markets. Even those jurisdictions that have implemented transparency rules are continually reviewing the impact of these requirements in the context of industry developments. The experiences and deliberations of other countries will continue to provide Canadian regulators, policy-makers, and other stakeholders with insights for determining the appropriate long-run approach to transparency in fixed-income markets in Canada.

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## Highlighted Issue

### Exchange-traded funds

*Prepared by Harri Vikstedt*

Although exchange-traded funds (ETFs) were launched in the United States in 1993, they are relatively new to Canada.<sup>28</sup> They are investment vehicles that invest in many of the same types of assets that mutual funds do. They are traded on exchanges, have a high degree of liquidity, and are available to both retail and institutional investors. They provide investors with the ability to acquire exposure in one transaction to a market index or specific asset class, such as commodities, that has not always been easily accessible to retail investors in the past.

Equity funds, either in general index or sector form, account for over 90 per cent of the US\$500 billion global ETF market. The remaining 10 per cent of the market is composed of both fixed-income ETFs, which were introduced in 2002, and, more recently, commodity ETFs.

This article provides an overview of ETFs and discusses their role as an alternative for investors seeking exposure to a specific index or asset class. The first section explains the basic structure of ETFs and how they have improved market efficiency by lowering costs, improving transparency, and helping to complete markets by increasing market access for retail clients. The second section provides a summary of the global ETF market, with a focus on Canadian developments.

#### *The ETF structure*

ETFs are passive investment vehicles that represent a fractional ownership in an underlying portfolio of securities. They are designed to closely track the performance of either a basket of securities (index) or a single asset. Investors receive returns based on the performance of the index or of the underlying asset, less a management fee paid to the fund manager.

ETFs are a hybrid of an open-end mutual fund and a closed-end mutual fund (Table 5). They are listed on a stock exchange, like a closed-end fund, and can be traded like a standard stock whenever the market is open. However, ETFs possess a unique creation and redemption process that differentiates them from closed-end funds. The number of outstanding shares may be increased or decreased, on a daily basis, to reflect demand.<sup>29</sup> This process removes the potential problem of significant price discounts or premiums of the fund related to the net asset value (NAV) of the underlying assets.

ETFs are an attractive alternative investment vehicle to indexed mutual funds, since they provide the investor with continuous exchange-based pricing, as well as the ability to execute limit and stop-loss orders. The ETF structure also provides a high level of transparency, since investors know the composition of the specific ETF's portfolio on a daily basis. ETFs should also have a lower tracking error compared with traditional indexed mutual funds because they are fully invested and do not need to hold cash for redemptions. The tax treatment of ETFs is more direct, and, given their structure, ETFs usually generate a capital gain only when the actual units are sold.<sup>30</sup> But despite their many advantages, ETFs are not actively managed and, thus, will not outperform a designated index.

As a portfolio-management tool, ETFs can be used for a number of purposes, including short-term hedging or speculative trading, investing in certain sectors of an equity index, and altering overall portfolio exposure to certain assets in a cost-effective manner. ETFs are also used in long-term, buy-and-hold strategies by both retail and institutional investors.

The development of the ETF market has helped to enhance market efficiency, particularly for retail investors, since it provides easier and direct

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28. Canadian investors have been able to buy U.S. ETFs since their introduction in 1993.

29. Defined market participants (brokers and/or dealers) can create new ETF shares by delivering additional underlying assets to the ETF when demand for the ETF increases. They can redeem existing shares by taking back the underlying assets from the ETF against the delivery of the ETF shares when demand decreases. They can also do either if the ETF price deviates from its NAV.

30. ETFs are obliged to distribute portfolio gains to shareholders by year-end. These may arise from index rebalancing or from the need to meet diversification requirements.

Table 5

**Funding Structure Comparison**

	Open-end fund	Closed-end fund	ETF
Fee level	Varies	High	Low
Transparency	Periodic	Periodic	Daily
Multi-dealer	No	Varies/ exchange	Exchange
Index-tracking	Varies	Varies	Yes
Net asset value (NAV)	End of day	End of day	Intra-day
Trade price	NAV	+/- NAV	Real time
Execution	End of day	Real time	Real time

Source: Barclays Capital

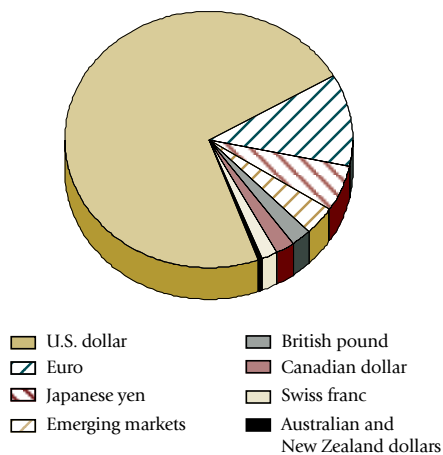
access to asset classes such as commodities. ETFs are an efficient investment vehicle for both retail and institutional investors interested in portfolio diversification at a global, regional, and industry sector level. These funds have made portfolio investing easier, more transparent, and more cost-effective, particularly for the retail client. The ability to trade at intra-day prices has also allowed investors to manage their portfolio risk more prudently.

**Overview of the ETF market**

The first ETF was designed to replicate the performance of the S&P500 equity index and began trading on the American Stock Exchange on 22 January 1993. A second ETF, tracking the S&P MidCap 400 index, was added in 1995, and 17 ETFs linked to international stock exchanges began trading in 1996.

The market for ETFs is now over US\$500 billion, with over 650 funds, including 20 Canadian-dollar-based ETFs with a total capitalization of over Can\$12 billion. The Canadian ETF market is still very small compared with the traditional Canadian mutual fund market, equivalent to just over 2 per cent of its size; this is slightly less than half of the equivalent U.S. percentage. The global ETF market remains U.S. focused, with over 70 per cent of all ETF assets under management denominated in U.S. dollars (Chart 26). Most of these are traded on one of the U.S. exchanges. Initially, participants in the market were primarily institutional investors, but as it developed, retail investors have become increasingly involved.

The majority of Canadian ETFs have been issued by Barclays Global Investors under their iShares trademark, which has the largest global market share of ETFs by market capitalization. The iShares S&P/TSX 60 index accounts for over 60 per cent of the total Canadian ETF market capitalization and tracks the TSX 60 index. Globally, it is the 14th largest ETF by market capitalization. Bond ETFs account for over 8 per cent of the Canadian ETF market—slightly higher than in the United States but below the 12 per cent in Europe. There are no Canadian-specific commodity ETFs, although the US\$iShares COMEX Gold Trust is cross-listed on the Toronto Stock Exchange.

**Chart 26 Global ETF Market by Currency of Issue**

Source: Bloomberg

The top ten global ETFs by market capitalization have all been issued in the United States.<sup>31</sup> They account for approximately 35 per cent of the global market and are largely dominated by the earliest funds. The first ETF, known as Spiders (Standard & Poor's Depository Receipts), continues to be by far the largest at just over US\$56 billion.

The only non-equity ETF in the top ten is the streetTRACKS Gold Trust, which tracks spot gold prices and began trading at the end of 2004. Although still only a small part of the overall market, commodity ETFs<sup>32</sup> possess the potential to greatly improve financial system efficiency by adding to the completeness of markets. Before the establishment of commodity ETFs, retail clients faced significant hurdles in acquiring direct financial exposure to commodity prices because of various factors, including high transactions and storage costs. Commodity ETFs provide small investors with the ability to further diversify their portfolios. In fact, the appreciation of several commodity prices in the first half of 2006 may be partly attributable to the growth of ETFs and the release of pent-up demand from smaller investors.

The ETF market is expected to continue to grow at a brisk rate as additional investors discover the product. However, the development of the ETF market beyond equities will depend on the development of liquidity in the markets for other underlying assets.

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31. Bloomberg, as of 25 September 2006

32. Unlike traditional ETFs, some commodity ETFs may hold futures contracts and not the underlying commodity.