

Developments and Trends

Notes

The material in this document is based on information available to *27 May* 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.¹

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.

1. 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.

Financial System Risk Assessment

Overview

This 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

- In general, the financial health of Canadian financial institutions, households, and non-financial corporations remains robust.
- Sources of risk to the Canadian financial system remain, however. These include rising global imbalances, the adverse implications of investors' continued search for higher financial returns, and the potential volatility of economic growth in China.
- Preliminary analysis of the trend increase in financial risks borne by the Canadian household sector (partly resulting from the transfer of risks from other sectors) suggests that this trend currently poses only limited risks to the soundness of the domestic financial system.
- Overall, the Bank of Canada concludes that the Canadian financial system remains sound. As well, the likelihood that these risks will be realized in such a way that there will be a significant impact on the Canadian financial system is small.

Since the release of the last *Financial System Review* in December 2004, the global and domestic financial systems have remained sound.

Globally, financial institutions and other corporations have generally continued to report robust profitability. Capital-adequacy ratios at large international and Canadian financial institutions have continued to improve. The overall financial situation of the Canadian non-financial corporate sector has also remained strong into 2005. Furthermore, Canadian households appear to pose relatively low risks for the Canadian financial system, since both the household debt-service ratio and the level of household indebtedness relative to net assets on a market-value basis remain modest. As a result, the domestic financial system appears, on balance, well positioned relative to the vulnerabilities associated with the currently identified sources of risk.

The major sources of risk include the possibility of a disorderly adjustment of global imbalances, the possibility of a sudden decline in the prices of riskier financial assets, and the potential volatility of economic growth in China. There are also other sources of risk that are judged to be less significant, such as the trend increase in financial risks borne by the Canadian household sector. Although it is difficult to assess the likelihood and near-term impact on the Canadian financial system of the realization of these risks, factors that might inform judgment on these issues are discussed in this section of the *Review*.

Internationally, global imbalances are a key risk to financial stability. Despite a 19 per cent real effective depreciation of the U.S. dollar from its peak in February 2002, the U.S. current account deficit has continued to widen. This U.S. external deficit is mirrored by current account surpluses elsewhere, especially in Asia. To date, financial markets have handled these developments with relative ease. It is not clear, however, whether this will continue. Further adjustment could take many forms, and under some scenarios could be potentially disruptive to the

global economy and financial system. If the U.S. dollar continues to depreciate, international investors, including foreign central banks that have been accumulating U.S.-dollar foreign currency reserves, may become increasingly wary of adding to their dollar exposures. A sudden sell-off of U.S. dollars could have implications for interest rates and for the prices of riskier financial assets, both in the United States and in the rest of the world, including Canada. Studies of past large current account adjustments in advanced countries, however, suggest that market forces usually restore external sustainability without substantial disruption. Such an outcome would undoubtedly allow participants in the Canadian financial system to adjust without significant adverse consequences. Nevertheless, without timely corrective action on the part of key countries, the risk of a disorderly adjustment is likely to grow. In the meantime, the uncertainty about how global imbalances will be resolved remains an important risk for the Canadian financial system.

The possibility of a sudden increase in the price volatility of riskier financial assets and a sudden decline in their prices pose risks to the Canadian financial system. Financial markets have been supported by high levels of monetary stimulus, which has been one factor sustaining investors' continued search for higher financial returns. Over the past few years, there has been a simultaneous appreciation of prices across a range of financial-asset classes, particularly for riskier fixed-income assets. Since March of this year, the prices of riskier assets have receded. Nevertheless, the prices of most risky assets remain high, and this has led to renewed concerns that investor leverage may have resulted in valuations having outpaced fundamentals. As a result, there is a risk that a large-scale reversal in trading strategies may lead to a rapid increase in asset-price volatility and a sudden decrease in asset prices. One catalyst for such a reversal could be a sharp reduction in investor risk appetite, potentially resulting from a disorderly adjustment of global imbalances or from other events with important financial ramifications. The significance of these risks varies across investors, depending on their exposure to riskier asset prices. Major banks play a key role in the domestic financial system, and they appear well positioned to manage potential adverse movements in asset prices. They continue to be well capitalized and use risk-management practices

that should limit the adverse impact of financial market volatility on their financial position.

Rapid economic growth in China over the past several years has focused attention on the possible global financial and economic implications of a sharp economic slowdown, or "hard landing," in China. Given the growing level of integration between Asian economies, a marked slowdown of the Chinese economy could have significant negative repercussions for the prices of commodities that Canada produces and exports globally. A decline in commodity prices would likely lead to downward pressure on the value of the Canadian dollar, thereby softening the burden of lower prices on Canadian commodity producers. If, on the other hand, China's economy continues to grow rapidly, the Canadian financial system could face an alternative set of vulnerabilities. Although continued strong growth in Asian demand for commodities, including oil and other energy products, would benefit Canadian producers, input costs would rise for other Canadian producers, as well as for households. Continued rapid growth in China could also result in overheating of its economy and a sharper downturn. Although each of these scenarios would likely significantly affect the profitability of many industries with a high exposure to international trade, including certain manufacturing industries, our analysis suggests that the overall impact on Canadian financial stability of either scenario would likely be limited.

Domestically, the overall financial situation of the Canadian non-financial corporate sector remained strong into 2005. But the performance of some non-financial industries, notably auto manufacturing, wood and paper, as well as electronic, computer, and clothing and textile manufacturing, has deteriorated recently. These developments represent another source of risk for the Canadian financial system. This deterioration results from a number of developments, including the further strengthening of the Canadian dollar since mid-2004 and substantial increases in input costs. The credit quality of these industries' debts has thus worsened. It is unlikely that Canadian financial institutions with well-diversified portfolios would be strongly affected overall by the deteriorating credit quality in these industries. Thus, the near-term risks they pose to the stability of the domestic financial system are limited.

Regulations and standards designed to improve the ability to manage, monitor, and measure risks in one sector may result in those risks being transferred to another sector, such as households. Some of the risks that have traditionally been managed by banks and pension funds have been transferred to households over the past decade. Furthermore, Canadian households have also voluntarily increased the risks to which they are exposed. The analysis of the potential impact of these increased risks, which is presented in this issue, aims to determine the impact that these changes may have on the stability of the Canadian financial system. This analysis follows up on a study published in the December 2004 issue of the *Review*, which focused on the general financial situation of households. Overall, our preliminary analysis indicates that the increased risk assumed by Canadian households appears to pose only limited risks to the financial system.

Finally, major banks in Canada have reported record profits for the first quarter of 2005, with all three of their major business areas—consumer and commercial banking, wholesale banking, and wealth management—doing very well. Other financial institutions in Canada, such as securities dealers, life, health, and property and casualty insurance companies, also continued to report robust profitability.

Overall, the Bank of Canada concludes that the Canadian financial system remains sound. As well, the likelihood that these risks will be realized in such a way that there will be a significant impact on the Canadian financial system is small.

Highlighted Issue

The potential impact on the domestic financial system of the increased risk borne by the Canadian household sector is discussed in this section.

An increase in the risks assumed by Canadian households

Prepared by Philippe Muller

When assessing the stability of the financial system, it is essential to have a thorough understanding of the transfer of risks between the system's sectors. Regulations and standards designed to improve the ability to manage, monitor, and measure risks in one sector may result in those risks being transferred to another sector, such as households.

Throughout the world, banks, insurance companies, and non-financial corporations that sponsor a pension fund are seeking to reduce the volatility of their balance sheets. Consequently, some risks that have traditionally been managed by these institutions are now being transferred to households. For instance, some firms are considering changing their pension funds to defined-contribution pension plans, in which employees assume the risks associated with benefits. Another example is the use by Canadian banks of securitization, which transfers part of the banks' credit risk to investors (Toovey and Kiff 2003). Canadian households have also voluntarily increased the risks to which they are exposed; for example, by increasing the share of their wealth invested in assets that are subject to market risk.

This rising level of risk has transformed the balance sheets of Canadian households.¹ This section presents the preliminary results of a study that seeks to identify and document the mechanisms by which risks are transferred to Canadian households, as well as to quantify the magnitude of the increase in overall risk assumed

by households. The ultimate goal is to determine the impact that these changes may have on the stability of the Canadian financial system.

Our analysis is based on aggregate data and general indicators of the financial situation of households, and some of the numbers are already several years old. Thus, the analysis does not take into account the variability of conditions confronting households in different income brackets; it may also fail to capture the most recent trends. Because of the growing importance of households in the financial system, the Bank supports efforts to expand the range of data available on Canadian households.²

The analysis begins with a description of the macroeconomic context. It then emphasizes the transformation of pension plans before addressing the potential short-term impact that increased market risk may have on households' assets, liabilities, and net worth. This is followed by an examination of the impact of increased riskiness associated with household balance sheets on the stability of the Canadian financial system.

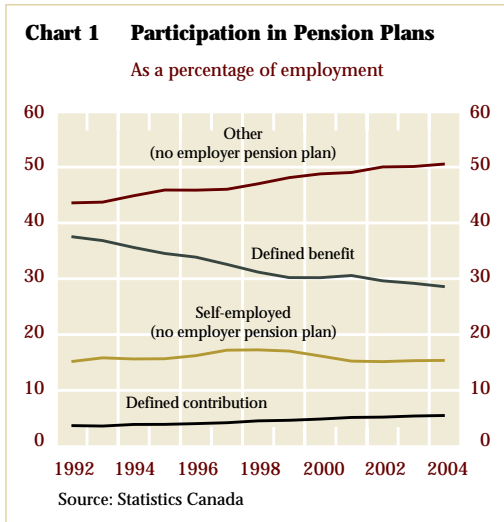
The macroeconomic context

Inflation in Canada was markedly lower in the 1990s than during the two previous decades. It also became much more stable and predictable, and the volatility of many other macroeconomic variables also diminished considerably (Longworth 2002; Debs 2001; and Crawford 2001). Even though a decline in the volatility of macroeconomic variables is beneficial to households as a whole, this does not necessarily mean that they are exposed to less financial risk. Indeed, it appears that the decline in the volatility of macroeconomic variables has not translated into a decline in the volatility of financial variables, except in the case of fixed-income securities.³ Furthermore, financial innovation, changes to regulation, and social developments have all had an impact on the types of risk to which Canadian households are exposed. These

1. The December 2004 issue of the *Review* features a discussion of the overall financial situation of Canadian households. The analysis concludes that the risk posed to the financial system by the potential deterioration of the quality of household credit is minimal. A cyclical increase in interest rates should not significantly affect the credit quality of household debt, and the likelihood of a significant reversal in house prices in major Canadian markets is remote.

2. As well, an OECD working group is currently identifying measures that would improve the coverage of household financial data in national accounts.

3. Borio and Lowe (2002) find that the magnitude of speculative bubbles has recently increased, and they conclude that low and stable inflation could increase the probability that excessive demand will affect the prices of financial assets.



factors have affected the evolution of the balance sheets of households and pension plans.

The transformation of pension plans

Defined-benefit pension plans generally assume a large share of the risk associated with paying retirement benefits. Conversely, in the case of *defined-contribution* pension plans, this risk falls on the employee. Thus, switching from defined-benefit to defined-contribution plans implies shifting risk from the sponsors of pension funds to households.

There are currently strong pressures on sponsors of pension funds to transform their defined-benefit plans into defined-contribution plans. This is partly attributable to the fact that the most sought-after and mobile segment of the labour market is increasingly demanding defined-contribution pension plans. In fact, skilled workers who expect to change jobs several times over the course of their careers tend to prefer defined-contribution plans, since they are financially more advantageous.⁴ Defined-benefit plans are also facing major supply-side pressures. The deficit position of many plans, changes to accounting practices, and certain judicial decisions may significantly affect the future offer of defined-benefit plans.

An analysis of the various pension plans available in Canada shows a downward trend (-10 percentage points over the past 10 or 11 years) in the number of participants in defined-benefit pension plans (Chart 1). This means that the retirement savings of a growing number of Canadians are exposed to market risk.

Our analysis further indicates that the proportion of workers whose employers offer a pension plan is declining. While over 40 per cent of employees were in an employer-sponsored pension plan in 1992, this percentage had fallen to below 35 per cent by 2004. Households are thus increasingly responsible for saving for their own retirement.

The transfer of risk from firms to households that follows from the reduction in the number of participants in defined-benefit pension plans

4. The financial benefits associated with defined-benefit plans increase slowly in early career. Only during the final six to eight years before retirement do the advantages accumulate rapidly for members of this type of plan.

thus translates into a shift of risk from corporate stockholders to the participants in the various pension plans. So far, this transfer has affected only 10 per cent of Canadian households. Furthermore, it is absolutely essential to conduct a deeper analysis using disaggregated and detailed data on the retirement holdings of Canadian households, so as to obtain a better understanding of the impact of this transformation on households and on the Canadian financial system.

The evolution of the balance sheets of Canadian households

The balance sheets of Canadian households have undergone some interesting changes over the past two decades. First, household balance sheets are much bigger now. The value of household assets doubled between 1990 and 2004, increasing from 343 to 371 per cent of GDP.

In terms of their composition, there has been a rise in the share of total household wealth invested in assets subject to market risk, such as stocks, mutual funds, and principal residence (Table 1). This increase has been at the expense of investments in foreign currencies and deposits, implying that a growing share of household assets are subject to market risk.

Furthermore, the share of household assets in private registered pension plans has experienced strong growth since 1984. Canadian households may therefore be affected by the increase in risks associated with these private plans. To evaluate the scope of this shift, it would first be necessary to identify the number of Canadian households having retirement savings plans and to establish the value of these plans.⁵ In 1999, 71 per cent of Canadians had retirement savings associated with private plans. The amount of Canadians' savings allocated to private pension plans accounted for 29 per cent of total household assets.⁶ Therefore, the increase in risk attributable to retirement savings

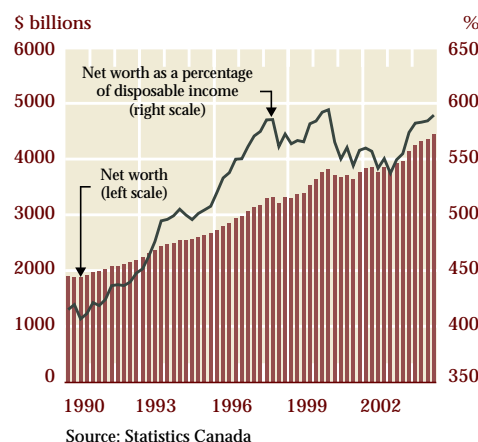
Table 1
Household Balance Sheet

As a percentage of assets

	1984	1999
Financial	21.10	31.10
Liquid assets	12.80	7.40
Registered savings ^a	4.00	14.20
Stocks/mutual funds	2.20	8.50
Non-financial	78.90	68.90
Value of principal residence	42.30	41.20
Total assets	100.00	100.00
Debts	14.40	15.50
Mortgage on principal residence	8.50	10.20
Net wealth	85.60	84.50

a. Comprises registered retirement savings, registered home ownership savings, registered education savings, and deferred profit-sharing plans
Source: Statistics Canada, *Survey of Consumer Finances* (1984), *Survey of Financial Security* (1999)

Chart 2 Net Worth of Household Sector



5. The Canada and Quebec Pension plans, as well as the Old Age Security Program (OAS) and the Guaranteed Income Supplement (GIS), are government programs available to all Canadians. Consequently, they are excluded from this analysis.
6. Private retirement assets include individuals' savings accumulated in registered retirement savings plans plus the value of savings vested in a company pension plan (Statistics Canada 2001).

plans is relevant to only a limited share of the assets of Canadian households.

An analysis of the distribution of Canadians' pension assets reveals that 76 per cent of Canadian households have retirement savings that total less than \$100,000, and that the remaining 24 per cent possess 84 per cent of all private pension assets. Private retirement savings in Canada are thus highly concentrated in the hands of wealthy households.⁷

In terms of household liabilities, the rising popularity of variable-rate mortgages has established itself as a recent trend. We estimate that in 2004 the share of variable-rate mortgages was slightly below 30 per cent, up from less than 5 per cent in 1999. Mortgage loans represent a very high proportion of the liabilities of Canadian households: 68.4 per cent in 2004 (*Bank of Canada Banking and Financial Statistics* April 2005). Variable-rate mortgages increase the exposure of households to interest rate risk. These additional risks are likely offset by the characteristics of these instruments: short-term rate hikes do not necessarily result in higher payments, and mortgage payments are lower on average.⁸ Moreover, the level of risk assumed appears quite limited, since the proportion of variable-rate mortgages in Canada remains below that in many other industrialized countries.

The net worth of Canadian households (at market prices) has more than doubled since 1990 and has increased more rapidly than real disposable income (Chart 2).⁹ It can be used to determine the impact of all the aforementioned changes on the financial health of households. The volatility of the ratio of this net worth to disposable income represents a measure of the risks assumed by households: An increase in risk generally results in greater volatility (unless diversification yields positive results).

In Canada, data on net worth (at market prices) have been available only since 1990. An analysis

of these statistics does not yield a clear picture of the impact that the increased risk assumed by Canadian households has on the volatility of the overall net worth of households. Because household wealth is strongly influenced by the value of the principal residence, it is possible that an increase in the proportion of assets held in financial instruments reduces the volatility of the total net worth. This would be a benefit of portfolio diversification.¹⁰

In light of the strong growth in the net worth of Canadian households relative to disposable income since 1990, we may infer that they are better placed than before to contend with the increase in financial risk.

Impact on the stability of the financial system

Overall, our preliminary analysis indicates that the increased risk assumed by Canadian households appears to pose only limited risks to the financial system.¹¹

First, this transfer of risks is, in actuality, a redistribution of risks among households. For example, as banks transfer some of their risks onto other participants in the financial system (including households), this amounts to a shift of risks from the banks' stockholders to pension plans, to insurance companies, and to households that own financial assets.¹² Only a small proportion of Canadians directly invest in financial assets, and pension funds hold bank stock in their portfolios. We may further assume that the same Canadians who own bank stock also invest in financial assets and belong to pension funds.¹³ Thus, risks seem to be redistributed primarily between households, and within the portfolios of the wealthiest households.

7. An analysis of the concentration of wealth in Canada leads to the same conclusion.

8. Some variable-rate mortgage contracts allow payments to remain constant even if the short-term rate increases.

9. Net worth is obtained by subtracting liabilities from assets (at market value). Net worth is expressed in terms of disposable income in order to normalize it using an annual measure of households' ability to generate savings.

10. Work by the IMF (2005) has revealed that the volatility of household net worth is lower in countries where the proportion of financial assets in household portfolios is highest.

11. This conclusion is consistent with those of international bodies examining the transfer of risks onto households in other industrialized countries (IMF 2005).

12. Canadian banks have been reducing their credit risk through securitization for several years, giving rise to the purchase of these new securities by pension funds and households.

13. The high concentration of assets among the wealthiest households supports this assumption.

Second, if the newly acquired financial assets generate yields that are weakly or negatively correlated with those of the assets that households already own (such as the family residence), then the acquisition of financial assets could very well yield the benefits of diversification.¹⁴ In fact, yields from the stock market and from fixed-income securities in Canada have been weakly correlated with those generated by real estate since 1990.

Nonetheless, if the redistribution of risks were to be among the lowest-income households, it is possible that a strong variation in asset prices could substantially affect households' ability to meet their debt-servicing obligations and cause an increase in bad debts held by financial institutions. Although unlikely, this possibility underscores the need to improve the frequency and depth of surveys of household balance sheets and to pursue ongoing studies that use disaggregated data on the balance sheets of Canadian households. These data and analyses should make it possible to determine whether particular classes of households have an elevated concentration of assets that have a higher exposure to market risk. This would then allow better determination of the long-term impact of this phenomenon on the Canadian financial system.

Some of these risk transfers also raise certain longer-run issues. For example, with the downward trend in the number of participants in defined-benefit pension plans, the decline in the number of employers offering pension plans since 1990, and the fall in benefits paid by government programs (OAS and GIS) in the wake of efforts to clean up public finances, it has become increasingly important to determine whether Canadian households are saving enough for their retirement.¹⁵ A shortfall in private savings could have negative repercussions for components of the financial system other than households. It could, for example, generate upward pressures on the benefits paid by government pension-supplement programs.

14. These benefits are on top of those accruing to the overall financial system from the diversification of risk among the various sectors.

15. See Statistics Canada (2001). This study indicates that 33 per cent of Canadian households had insufficient savings to maintain their standard of living after retirement.

Furthermore, the question of whether households have the ability to adequately manage these increased financial risks merits consideration. It is quite possible that some households are poor risk managers and badly placed to absorb the potential consequences of the risks they incur. This, in turn, raises the need for authorities to promote the financial education of households in order to help them better understand the financial risks to which they are exposed.¹⁶

Even though this preliminary analysis indicates that the increased risk assumed by Canadian households has had little short-term impact on the stability of the Canadian financial system, policies designed to improve the financial stability of systemically important institutions should, nonetheless, take into account the resulting transfers of risk onto households, as well as their capacity to manage and absorb them.

The Macrofinancial Environment

The global economic expansion has continued at a healthy pace in recent months. Nevertheless, the surge in crude oil prices and their volatility since August 2004, together with the further widening of the U.S. current account deficit, have increased economic and financial uncertainty.

The global environment

Against this backdrop of higher crude oil prices and their increased volatility, expectations for global economic growth in 2005 have been revised down since the December 2004 *Review* (Chart 3). Global activity is expected to remain robust, however, owing to the continued strong growth of most emerging-market economies, especially in Asia. Growth also remains solid in the United States. As a result, financial market participants expect the U.S. federal funds rate to rise to between 3.50 and 3.75 per cent by year-end.

Improved corporate profitability and continued favourable financing conditions have contributed to a further decrease in various indicators of financial distress, such as default rates. According to Standard & Poor's, the global corporate default rate for speculative issuers, on a 12-month

16. See initiatives of the Financial Consumer Agency of Canada (www.fcac-acfc.gc.ca).

Chart 3 Evolution of Consensus Estimates for Annual Growth of Industrialized Economies* in 2005

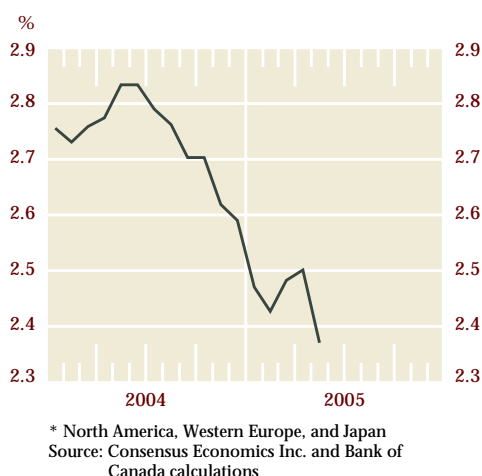


Chart 4 Default Rates on Speculative-Grade Bonds

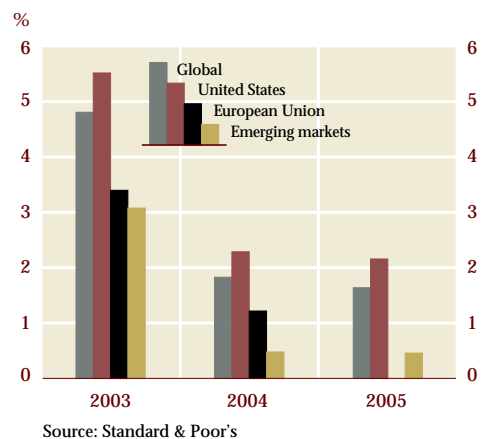
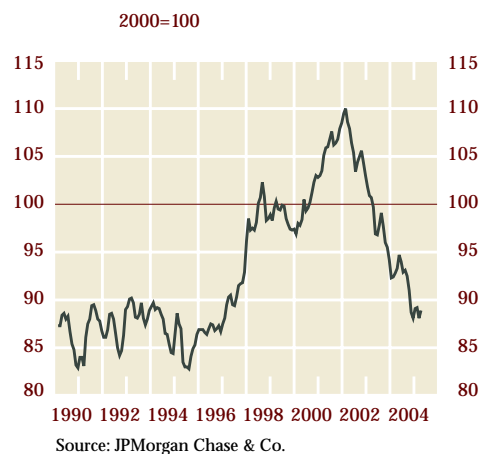


Chart 5 Real Effective Exchange Rate of the U.S. Dollar



rolling-average basis, edged down slightly to 1.6 per cent in April from 1.8 per cent at the end of 2004 (Chart 4).¹⁷

Global imbalances

The June 2004 *Review* highlighted global imbalances as a key risk to international financial stability. A year later, this risk remains. Despite a 5 per cent real effective depreciation in the U.S. dollar since last June and a 19 per cent depreciation since its peak in February 2002 (Chart 5), the U.S. current account deficit has continued to widen. In the fourth quarter of 2004, it moved above 6.3 per cent of GDP, a level viewed by most analysts as unsustainable (Chart 6). The growing deficit partly reflects the low level of U.S. domestic savings, particularly compared with savings in Asia. It also reflects the strength of U.S. demand relative to demand elsewhere. Until now, financial markets have absorbed these developments with relative ease. Notably, long-term bond yields remain low by historical standards, and volatility in the value of the U.S. dollar has been low.

It is not clear, however, how the currently benign situation will evolve. Adjustment can take many forms, and some scenarios could be potentially disruptive to the global economy and financial system. The weakening U.S. dollar has already significantly eroded the value of foreign claims in the United States. If the U.S. dollar continues to depreciate—as most analysts predict it must, to help shrink the deficit to sustainable levels—international investors may become wary of increasing their exposure to the U.S. dollar. However, this tolerance threshold is difficult to evaluate in the context of increasing global trade and economic and financial integration. Moreover, the U.S. economy remains the most productive and flexible among advanced economies. Nonetheless, the prospect of a steep depreciation in the dollar increases the risks of global financial instability.

The U.S. current account deficit is no longer principally financed by inflows of long-term private investment. Gross inflows of foreign direct investment and purchases of corporate stocks (as a percentage of U.S. GDP) have declined considerably from their peak in 1999. This has created a gap in external financing that

17. Over the 1981–2004 period, the default rate averaged 4.9 per cent.

has been filled by greater debt flows (corporate bonds and U.S. Treasuries), which are likely to be more mobile.

Asian central banks, in an effort to prevent their currencies from appreciating, have been actively buying U.S. assets. The rapid accumulation of official reserves by Asian central banks is playing a role both in stemming the dollar's real effective decline and in keeping yields on long-term U.S. issues low (Chart 7). But it has also added to uncertainty about the nature and timing of the eventual global adjustment process.

Although Asian central bank holdings of U.S. dollars are already at a very high level (Chart 8), an abrupt cessation of this accumulation of U.S. dollars seems highly unlikely. Over the medium term, however, Asian currencies will have to become more flexible in response to growing domestic pressures, including rising inflation, inflows of speculative capital, and the fiscal costs of continued intervention.

A slowdown in central bank purchases or a loss of confidence on the part of private investors could lead to a disorderly adjustment of external imbalances. A sudden sell-off of the U.S. dollar could have implications for interest rates and asset prices, both in the United States and in the rest of the world, including Canada. U.S. long-term interest rates would likely rise, while the yields of similar maturities in other industrialized countries could potentially fall as a result of a "flight to quality." The economic effects would be complicated, but the current narrow spreads on high-yield corporate debt and emerging-market investments, despite the recent retrenchment since March, suggest these may be among the first affected (Chart 9). Higher interest rates would induce U.S. households to increase their very low savings rate.

It is difficult to evaluate the risk of this scenario, however. Studies by the Federal Reserve Board of large current account adjustments suggest that, in advanced countries, market forces usually restore external sustainability without substantial disruption (Croke, Kamin, and Leduc 2005; Freund 2000). An increase in U.S. savings—through, for example, greater fiscal restraint—combined with increased spending abroad and more flexible Asian currencies would contribute to such an outcome. This would undoubtedly allow participants in the Canadian financial system to adjust without

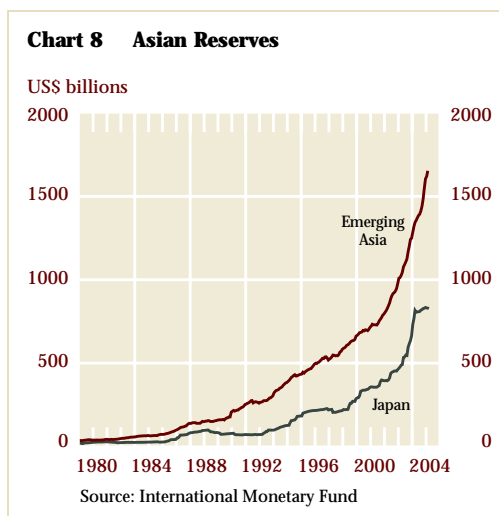
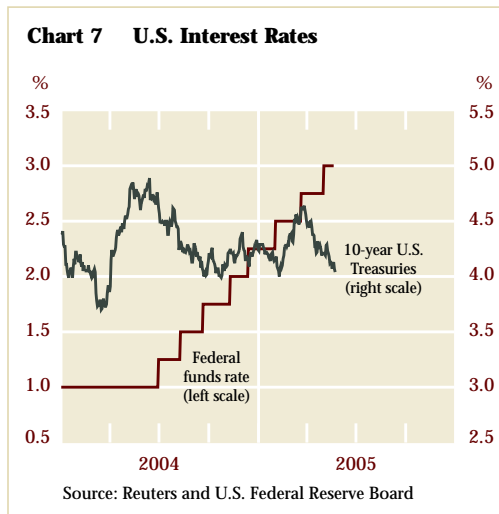
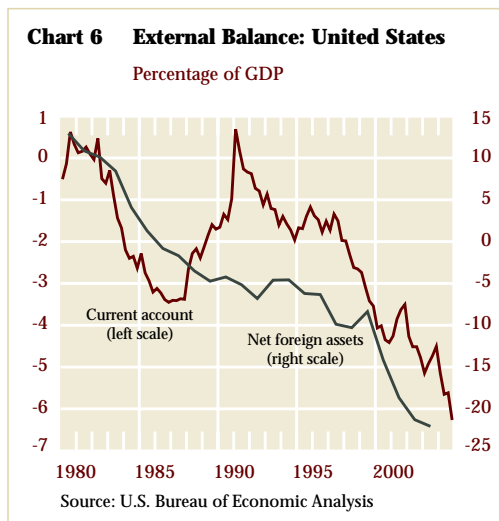
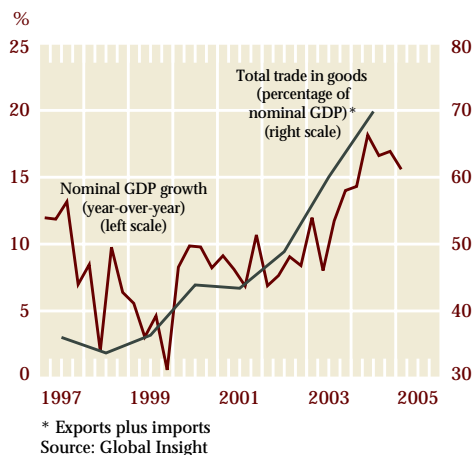


Chart 9 Bond Spreads Relative to U.S. Treasuries**Chart 10 China****Chart 11 Bank of Canada Commodity Price Index: Total**

significant adverse consequences. But without timely corrective action by key countries, the risk of a disorderly adjustment is likely to grow.

The Chinese economy and the Canadian financial system

China has experienced rapid economic growth for several years now and has become increasingly integrated with other countries through international trade and financial flows (Chart 10). This has focused attention on the possible global financial and economic implications of a sharp economic slowdown, or hard landing, in China. A dramatic slowdown has become less likely in the near term, since growth in China's real GDP remained robust in the first quarter of 2005, and private forecasters expect growth to moderate only slightly over the remainder of 2005. Nevertheless, given the relatively high level of integration between Asian economies, it is useful to assess the potential impact on the Canadian financial system of a possible hard landing of the Chinese economy at some point in the future.

A hard landing in China would generally put downward pressure on global economic growth. If all other things remain equal, the direct effect on Canadian exports would be relatively limited, given that China's share of total Canadian exports remains low at 2.0 per cent. Far more important would be the indirect effect on the Canadian economy through lower global commodity prices. Many observers have attributed the recent surge in the prices of a range of commodities to strong Asian demand, especially that from China (Chart 11, and Technical Box 2 of the Bank's April 2005 *Monetary Policy Report*). Consequently, a marked slowdown of the Chinese economy could have significant negative repercussions on the prices of the commodities that Canada produces and exports globally.

With Canadian bank claims on Chinese entities being very small (only 0.9 per cent of total bank capital in 2004), the consequences for the financial system of a hard landing in China would depend primarily on the impact of lower commodity prices on the balance sheets of Canadian bank customers. In this regard, it is important to consider the effect of lower commodity prices on the Canadian dollar. Other things being equal, a decline in U.S.-dollar commodity prices would likely lead to downward pressure on the Canadian dollar, softening the

burden of lower commodity prices on Canadian producers. Moreover, the sustained run-up in commodity prices since 2004 has left most commodity-producing industries relatively sound financially and less likely to experience significant financial stress. At the same time, a modest reduction in commodity prices would help many industries that use commodities.

If, on the other hand, China's economy continues to grow for the next several years at the same average pace that it has over the past two decades, the Canadian financial system could face an alternative set of vulnerabilities. All else being equal, such a scenario should imply continued strong growth in Asian demand for commodities, including oil and other energy products. This would benefit Canadian commodity producers while raising input costs for consumers of Canadian commodities. As in the case of a hard landing, this scenario would likely significantly affect the economic output and profitability of many industries with high exposure to international competition. At the same time, higher world commodity prices would likely be partially offset by an appreciation of the Canadian dollar.¹⁸ However, continued rapid growth of the Chinese economy would likely only postpone an inevitable, and potentially larger, slowdown. Moreover, continued strong growth in China could lead Canadian banks and households to increase their exposure to Chinese investments as they search for higher returns. This would likely result in diversification benefits for Canadian banks, provided that the increase in their exposure to China in coming years was gradual. The cyclical nature of economic growth and commodity prices suggests that increased exposure to sectors dependent on the continued strength of the Chinese economy should be made without compromising the efforts of major Canadian banks to diversify their revenue sources.¹⁹

In view of the present health of the Canadian household and corporate sectors, it appears that the overall impact of a slowdown in the Chinese economy or, alternatively, continued strong

Chart 12 Real GDP Growth: Canada

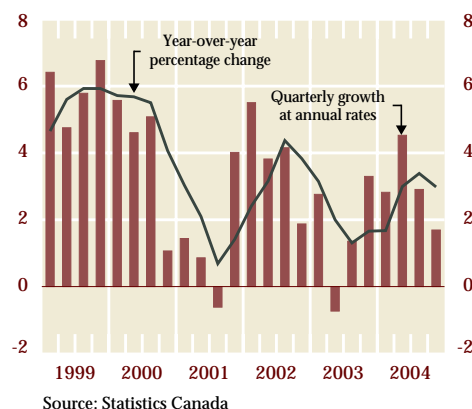


Chart 13 Financial Position of the Canadian Non-Financial Corporate Sector

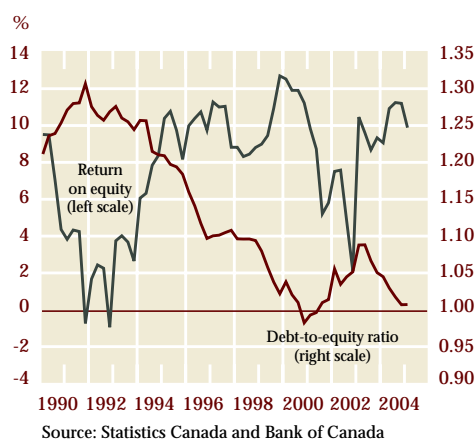
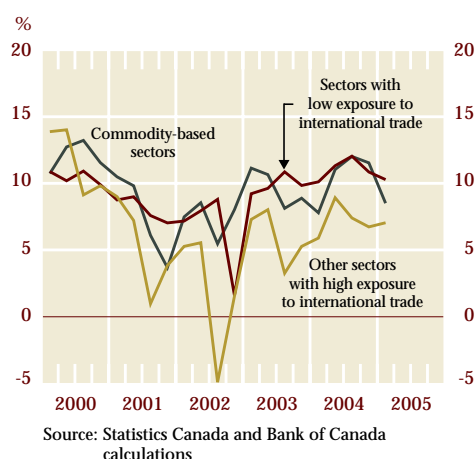
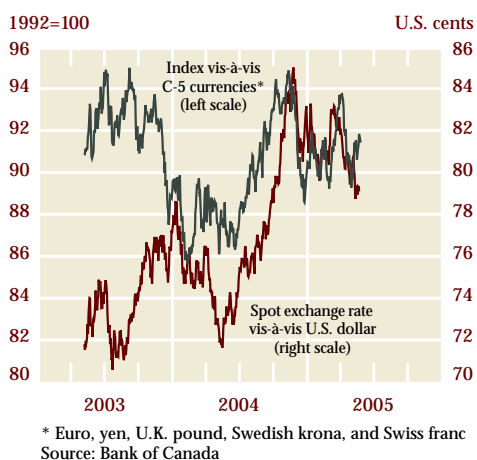


Chart 14 Return on Equity for Selected Sectors



18. See the *Industry section* on page 16 of this issue for a discussion of the impact of the appreciation of the Canadian dollar and oil prices on certain Canadian industries.
 19. See page 8 of the December 2003 *Review* for a discussion of the cyclical performance of the Canadian banking sector.

Chart 15 Canadian Dollar Exchange Rate

growth, on Canadian financial stability may be limited, both in terms of trade and of the risks posed to the banking sector.

Canadian developments

Canadian economy

Economic growth in Canada eased in the second half of 2004 (Chart 12). Nevertheless, the Bank expects the economy to move back to its production capacity in the second half of 2006.²⁰ Economic expansion this year and next is expected to be supported primarily by continued substantial gains in final domestic demand. This is likely to be partly offset by the drag on real net exports arising from the past appreciation of the Canadian dollar.

Households

Canadian households have continued to increase their debt levels, thus raising the sensitivity of this sector to adverse developments, such as significantly greater-than-expected increases in interest rates, unemployment, and/or marked declines in house prices. Nevertheless, as our detailed analysis in the December 2004 *Review* showed, the risks households pose for the Canadian financial system remain low.

Corporate sector

Despite the surge in oil prices and the appreciation of the Canadian dollar, the financial situation of the non-financial corporate sector remained strong in the second half of 2004 and in early 2005. Profitability remained at a high level over the past year, and leverage decreased still further, reaching a very low level in early 2005 (Chart 13).

In particular, most sectors with a low exposure to international trade saw profitability remain quite buoyant (Chart 14).²¹ In some cases, the appreciation of the Canadian dollar in the second half of 2004 may have had a positive impact on rates of return, by further lowering their import costs (Chart 15).

On the other hand, the profits of commodity-producing sectors fell back in the first quarter of 2005 as a result of such factors as losses on

20. See the April 2005 *Monetary Policy Report*.

21. For more analysis of the profitability of the non-financial corporate sector in Canada in 2004, see page 12 of the April 2005 *Monetary Policy Report*.

hedging contracts. Profitability in many other industries with a high exposure to international competition (other than commodity producers) has also fallen back since mid-2004. This deterioration chiefly reflected the adverse impact of the further rise in the Canadian dollar, the surge in the costs of energy and raw materials, and increasing competition from emerging markets, such as China.

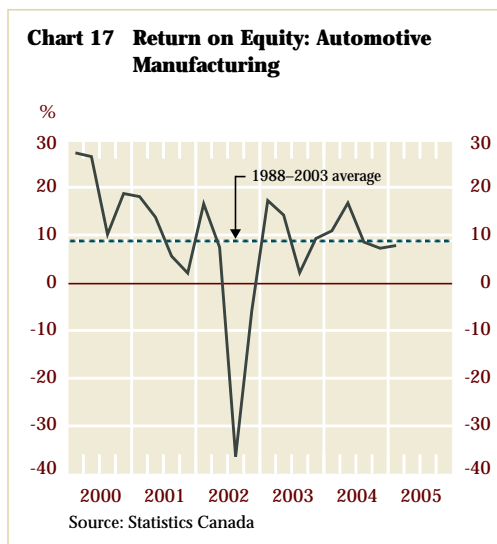
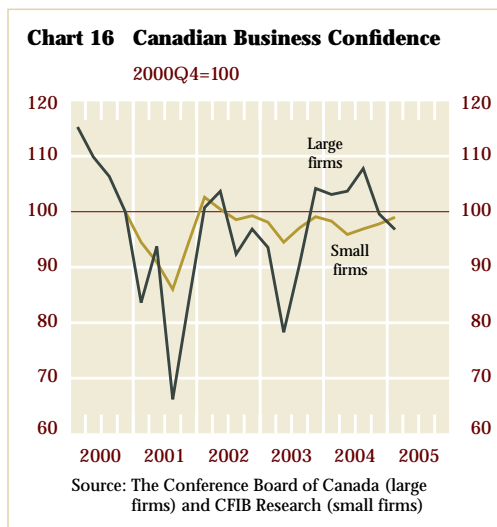
Despite the high overall level of profitability, the confidence of large firms has fallen back since the third quarter of 2004 (Chart 16). In contrast, the confidence of small firms has recovered over the past year.

Industry

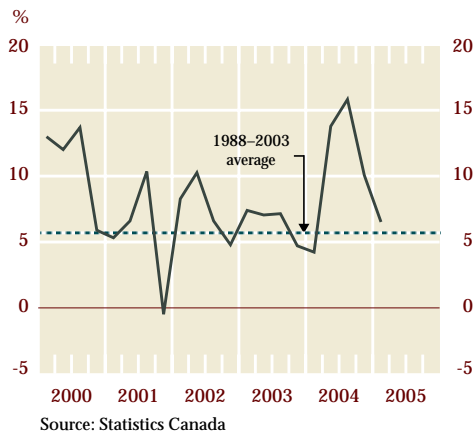
A limited set of industries, which include auto manufacturing, wood and paper, as well as electronic, computer, and clothing and textile manufacturing, have been subject to considerable financial stress over most of the period since 2001. These industries account for only about 9 per cent of the output of the non-financial business sector, however, and so pose only a limited risk to the financial system.

Output and profitability improved considerably in many of these industries in the first three quarters of last year, as a result of the same factors mentioned in the “Corporate sector” section. But profits eased in most of these industries in late 2004 and early 2005, following the further rise in the Canadian dollar since mid-2004 and substantial increases in the costs of energy and other raw materials. Moreover, the near-term financial outlook for these industries generally remains weak.

Having decreased considerably since mid-2004 (Chart 17), the profitability of Canada’s auto manufacturing industry is likely to remain lower than average over the near term. Competitive pressures from overseas producers are intensifying, and the profits of auto parts suppliers are being adversely affected by the sharp rise in the cost of steel and other raw materials. Indeed, a number of auto parts companies in Canada (and in the United States) are already having serious financial difficulties.²²

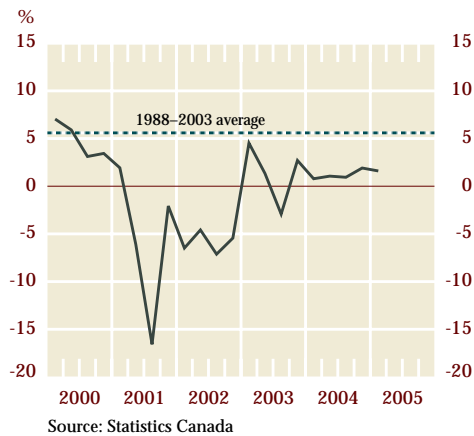


22. See page 19 of this issue for a discussion of the impact on financial markets of the weakening credit position of the North American auto manufacturing industry.

Chart 18 Return on Equity: Wood and Paper Manufacturing

Profitability in the wood and paper industry, after improving markedly in the second and third quarters of 2004, has fallen back since then (Chart 18). Because their product prices are less buoyant, pulp and paper producers have experienced a more severe impact from such developments as the appreciation of the Canadian dollar than building-product companies. As a result, many pulp and paper firms saw their debt ratings downgraded in December 2004 and January 2005.

Rates of return in the electronic and computer manufacturing industry continued to be weak in the second half of 2004 and early 2005 (Chart 19). With the adverse effects of the past rise in the Canadian dollar and intensifying competitive pressures from firms in emerging markets, such as China, profitability is likely to remain low over the near term, despite projected growth in the global demand for high-technology equipment.

Chart 19 Return on Equity: Electronics and Computer Manufacturing

Profitability in the clothing and textile manufacturing industry was considerably lower than normal in 2003 and 2004, as production fell sharply following increased penetration of the Canadian market by low-cost producers in such countries as China and India. Further restructuring is likely this year, following the removal of all remaining quotas on imports of clothing and textile products by member countries of the World Trade Organization.

Elsewhere, the overall financial position of the Canadian air transport industry appears to be improving because of reduced competition following the cessation of operations by Jetsgo. As well, Canada's cattle industry will receive support, following the federal government's announcement of new financial assistance for the farm sector.

More generally, it is unlikely that Canadian financial institutions with well-diversified portfolios would be strongly affected by the deteriorating credit quality in these industries.

The Financial System

Financial markets

Developments in financial markets since 2003 have been influenced by high levels of both monetary stimulus and risk appetite among investors.²³ Over the past few years, these factors have contributed significantly to a simultaneous appreciation across a range of financial-asset classes, particularly riskier assets. Since March of this year, however, the prices of riskier assets have receded, partly reflecting the removal of some monetary stimulus in certain industrialized countries and a decrease in the risk appetite of investors (Chart 20).

This decline in the prices of riskier assets was orderly and was modest relative to the significant price appreciation since early 2003. But sources of risk to global financial markets remain, including high oil prices, the possibility of a disorderly adjustment of global imbalances, and the adverse implications of investors' continued search for higher financial returns.

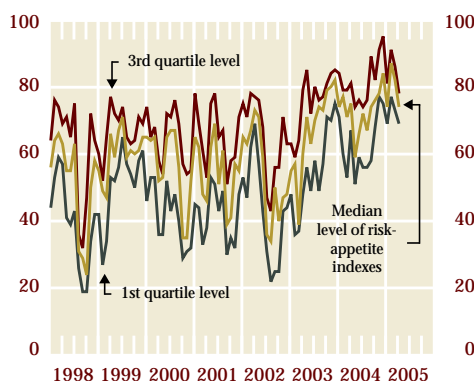
Adverse implications of investors' continued search for higher financial returns

Over the past few years, an environment of low nominal returns, along with strong fundamentals, has encouraged investors to raise the proportion of riskier assets in their portfolios. The risk to the financial system resulting from the appreciation in the prices of riskier assets was assessed in the June 2004 issue of the *Financial System Review*. Since that time, the prices of riskier assets, such as corporate and emerging-market bonds, along with income trusts and emerging-market equities, have risen further. Since March 2005, however, growth in corporate earnings has slowed, there have been tentative signs of another "soft patch" in global growth driven by persistently high oil prices, and the credit position of two large auto manufacturers has weakened further.²⁴ This has

23. See the report on page 37 of this issue for a survey of indexes used to measure investor risk appetite, as well as an explanation of the concept of "risk appetite."

24. See the discussion on page 19 on the weakening credit position of two large auto manufacturers, which contributed to a reversal in the prices of some risky assets in March through May 2005.

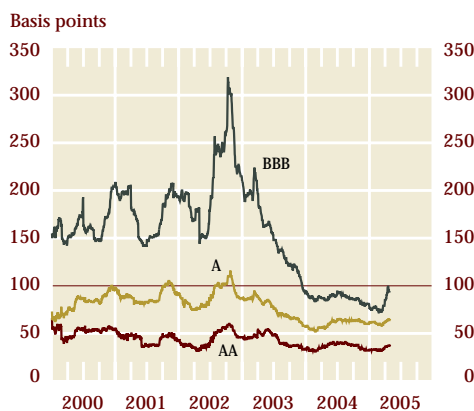
Chart 20 Indexes of Investor Risk Appetite*



1998 1999 2000 2001 2002 2003 2004 2005

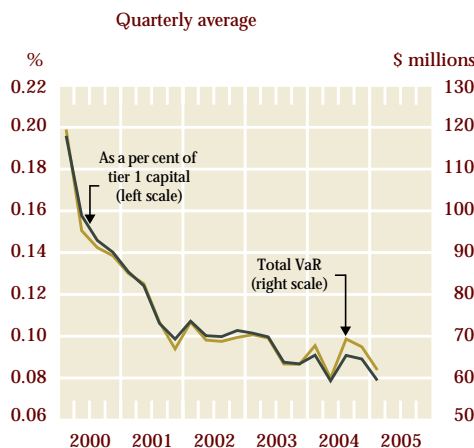
* Values are taken from the 11 indexes depicted on page 41 of this issue. Values of these are ranked each month, and the upper and lower bounds charted above correspond to the value of the 1st and 3rd quartile indexes.
Source: Bank of Canada calculations

Chart 21 Yield Spreads on Canadian Corporate Bonds



Source: Merrill Lynch

Chart 22 Value at Risk for Trading Portfolios: Major Banks*



* 99 per cent VaR probability threshold for all institutions, for trading portfolios only
Source: OSFI

resulted in a reversal of much of the price appreciation of riskier assets since June 2004.

Despite this recent retrenchment, the prices of most risky assets remain similar to those at the time of the June 2004 *Review*. Spreads on corporate bonds are narrower, with Canadian investment-grade bonds trading at spreads about 5 basis points narrower than one year ago (Chart 21). Similarly, spreads on emerging-market bonds, as measured by JPMorgan's Emerging Market Bond Index, remain over 120 basis points lower than in June 2004. As a result of the low levels of yields even for these riskier assets, recent evidence suggests that investors seeking to meet their objectives for total returns, such as pension funds, have increasingly turned to investments in real estate and other asset classes, such as transportation and power supply infrastructure, commodities, private placements, and hedge funds. The high prices of riskier assets have led to renewed concern that ample global monetary liquidity and investor leverage may have caused valuations to outpace fundamentals.

A rise over time in the yields on government bonds globally would reduce the need for investors to acquire riskier assets to achieve their goals for total returns. This would erode the profitability of leveraged positions designed to take advantage of the low interest rate environment. (See Box 1.)

There is a risk that a large-scale unwinding of trading strategies may lead to a rapid increase in asset-price volatility. One catalyst for such a reversal could be a sharp reduction in investor risk appetite, potentially resulting from a disorderly adjustment of global imbalances or from other events with important financial ramifications.

In Canada, an assessment of the market risk assumed by the major banks, as measured by the value at risk that they report for their trading portfolios, suggests that the market exposure of these institutions has been trending lower, despite increasing revenues from trading-related activities (Chart 22). Canadian banks also use stress testing, a risk-management tool that can mitigate the impact on financial institutions of low-probability, extreme, but plausible, events. (See Box 2.) In addition, capital maintained to cover overall risks remains well above regulatory benchmarks. Major banks thus continue to be well capitalized and appear well positioned

to manage potential adverse movements in asset prices.

Nevertheless, other Canadian investors, including households and pension funds, should prepare for the possibility of some further decline in financial-asset prices.

The weakening credit position of two large auto manufacturers

The weakening financial positions of General Motors Corporation (GM) and Ford Motor Credit Co. (Ford) resulted in a series of credit-rating downgrades. GM is now rated below investment grade by both Standard & Poor's and Fitch, while Ford is rated below investment grade by S&P. As a result, a sharp increase in the spreads on GM and Ford corporate bonds ensued, with GM's 30-year benchmark increasing by about 200 basis points. Information from credit default swaps (CDSs) for General Motors Acceptance Corporation (GMAC) indicates that the premium on 5-year CDSs, which represents the underlying credit quality of GMAC, has increased from about 230 to roughly 600 basis points. The downgrade of GM's and Ford's debt to non-investment grade may cause the spread to widen even further, since investors who are unable to hold non-investment-grade debt may be forced to sell bonds issued by GM or Ford in accordance with their investment mandate.

Because GM and Ford are two of the world's largest corporate borrowers of marketable debt, large movements in their spreads can significantly affect credit markets. To date, the Canadian corporate bond market has been relatively unaffected. However, spreads in U.S. corporate markets have widened since the most recent GM and Ford profit announcements. Yield spreads on corporate issues in the United States are about 30 basis points wider in the all-investment-grade category (from BBB to AAA) since March 2005. While a significant part of this movement can be attributed directly to GM and Ford, other related industries have seen the spreads on their issues widen, but to a much lesser extent.

The timing of the increase in corporate spreads coincides with a broader, but so far generally modest, fall in the prices of riskier assets. While the recent adjustment in asset prices can be attributed to various factors, the future impact of the weakening credit position of the two large auto manufacturers on corporate spreads could

Box 1

Carry Trades: A Backgrounder

During the past few years of very low policy interest rates in many industrialized countries, the carry trade has once again become an increasingly popular trading strategy. This note discusses the mechanics of carry trades and the potential risks they pose for financial stability.

Although there are many different variations on the carry trade, they all involve borrowing at a low rate (the “funding rate”) and lending at a higher rate. For example, through their core business activities banks are able to benefit from an upward-sloping yield curve by borrowing at low short-term rates and investing at higher long-term rates. They do this by taking deposits, on which they pay a short-term rate of interest, and lending them out in the form of mortgages or other loans or by buying longer-term bonds. The risks inherent in this strategy come from movements in both short- and long-term interest rates. For example, the profitability of a carry trade is reduced if the funding rate increases. In addition, there is price risk associated with movements in longer-term yields. Because of its longer duration, the price of the investment asset is quite sensitive to movements in longer-term rates, with increases resulting in capital losses. Since 2003, with the federal funds rate at very low levels, some investors have been funding themselves in the U.S. overnight market and investing in emerging-market bonds, commodities, and other high-yielding assets.

Carry trades can also be made across currencies, by borrowing in a market where interest rates are low and investing in another where yields are higher. In addition to the risks mentioned above, this strategy exposes the investor to currency risk resulting from fluctuations in the bilateral exchange rate. For example, this type of carry trade was popular in the 1990s, when many investors borrowed in the Japanese overnight market at about 1 per cent and bought longer-term U.S. Treasury bonds yielding 5 per cent or higher. If the yen weakened, this trade became even more profitable.

For a carry trade to be profitable, certain equilibrium conditions must not hold. First, the pure-expectations hypothesis of the yield curve must not hold over the investment horizon. The pure-expectations hypothesis argues that expected future short-term interest rates are embedded in current long-term rates and that an investor should be indifferent between holding a long-term bond until maturity or investing in a succession of shorter-term bonds. In other words, the overall return from a classic interest rate carry trade

should be zero.¹ Second, uncovered interest rate parity must not hold over the investment horizon.

Under uncovered interest rate parity, the currency of the country where interest rates are lower (the currency in which a trader borrows) is expected to appreciate relative to the currency in which the trader invests by an amount that exactly eliminates any excess profit arising from the difference in the level of interest rates between the two countries. However, these equilibrium arbitrage conditions have been empirically found not to hold over long samples.

There is the potential for either a rise in short-term rates, which would cause the large-scale unwinding of carry trades, or a sharp reduction in investor risk appetite. Both would create system-wide disturbances in financial markets. In particular, simultaneous attempts by investors to reduce their positions can lead to a significant decrease in market liquidity and a rise in volatility in affected markets. One such example is the reaction of the bond market to rising short-term policy rates in the United States in early 1994. There was a large sell-off in the U.S. Treasury bond market, as investors unwound the carry trades that they had previously made to take advantage of the large spread between longer-term Treasury yields and the federal funds rate.

A second example of the unwinding of carry trades causing an increase in volatility occurred in October 1998. At the time, carry trades involving borrowing in the Japanese overnight market and investing in riskier assets had been made. On 7 October, the Japanese yen appreciated by almost 7 per cent. Many market participants attributed this movement to the unwinding of carry trades as news spread of the potential collapse of the hedge fund Long Term Capital Management. This led to the selling of riskier and less-liquid assets and an unwinding of short yen positions.

Such events highlight the risk that, without adequate market liquidity, unfavourable price movements can be caused by large-scale attempts to exit carry trades and result in large unexpected losses.

While market reaction to recent increases in the federal funds rate has so far been orderly, past experience indicates that the unwinding of carry trades can sometimes contribute to heightened financial market volatility.

1. The pure-expectations hypothesis of interest rates assumes that there is no term premium. Alternatively, a positive term premium is assumed under the expectations hypothesis.

Box 2**BIS Stress-Testing Survey**

During 2004, the Bank of Canada conducted a survey on the stress-testing practices of Canadian banks on behalf of the Committee on the Global Financial System of the Bank for International Settlements (BIS).¹ The survey was an update of one conducted in 2000 and was followed by interviews with bank risk managers.² The process was intended to determine how stress testing is evolving, identify key perceived risks, and gain a better understanding of potential innovations and challenges. This survey report was published in January 2005 (BIS 2005).

The increased integration of stress testing into the risk-management frameworks of financial institutions has important implications for financial markets. From a systemic perspective, enhanced risk management helps to ensure that the consequences of stress events are reduced, because financial institutions are better protected and less likely to contribute to a wider crisis. The following is a summary of the key findings for the Canadian banks surveyed.

Use of stress testing

Stress tests are used mainly to complement other risk measures, such as value at risk. Stress testing is used to study low-probability, extreme, but plausible, events in order to better understand the prospects for large losses. It tends to suit markets subject to illiquidity, price gaps, or other problems, such as a lack of historical data, that limit the usefulness of other risk measures. Stress testing has become an integral part of risk management at Canadian banks and is generally used as input into management decisions on exposure limits.

The survey results indicate that each major Canadian bank regularly conducts between 15 and 35 stress tests, typically on a daily or weekly basis. These vary from simple sensitivity measures, such as a 10 per cent appreciation of the Canadian dollar, to more sophisticated scenarios comprising many individual shocks. Tests include sensitivity to variables such as equities, interest rates, foreign exchange rates, and commodity prices, as well as to the volatilities of these variables.

Several *historical scenarios* are commonly used. These include the 1987 stock market crash, the 1994 tightening by the U.S. Federal Reserve, the 1997 Asian crisis, the 1998 Russian debt default, and the increase in oil prices during the 1990–91 Gulf War.

1. Stress testing is defined in Box 1 of the December 2003 *Financial System Review*.
2. The BIS survey was forwarded to the six largest Canadian banks in June 2004.

Hypothetical scenarios tend to be complex and highly customized, and some are loosely based on historical events. The most common hypothetical scenarios relate to equity prices, interest rates, exchange rates, and commodity prices. *Sensitivity tests* vary from simple shocks involving only one risk factor to complicated scenarios involving many risk factors. For example, most banks have designed sensitivity tests related to a rise or fall in interest rates, exchange rates, and/or energy prices.

Recent developments

Technological advances have allowed more frequent and detailed stress testing, as well as more refined tests. Recently, attention has shifted to the development of more realistic and meaningful tests and a better understanding of the tests, recognizing the trade-off between high levels of detail and ease of understanding. Stress testing has gained acceptance as a tool that senior management can use to better understand risks.

Banks were asked to indicate which scenarios received the most attention from management in the past year. Attention was focused on the implications of (i) an increase in interest rates, such as the 1994 episode of tightening by the Fed; (ii) a widening of credit spreads, such as the 1998 Russian default episode; and (iii) an equity market shock.

Future innovations

Stress testing for the loan portfolio is currently separate from that for market risk. Stress testing for risk across all business lines appears to be the next focus and is a work in progress for some banks. The need for greater integration of credit and market risk stress tests is widely recognized.

Challenges include the fact that positions can be maintained on a number of trading systems, and therefore in some institutions it is difficult to use current IT systems to carry out the stress tests. Data can also pose problems in terms of accuracy and adequacy. It can be a challenge to properly incorporate new financial products (especially derivatives) into the tests, because they are complicated and historical data are limited.

Overall, the stress-testing experience of Canadian banks is comparable to that of other foreign international banks.

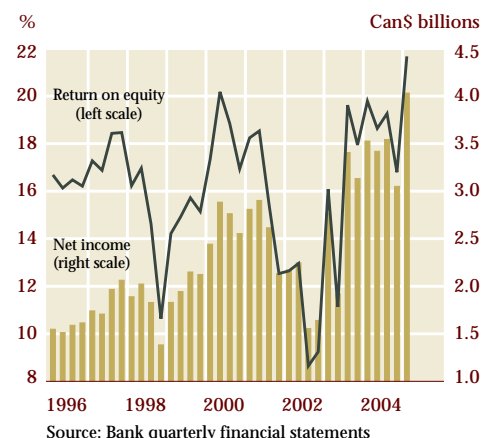
potentially affect the prices of riskier assets more generally by negatively affecting the risk appetites of investors around the world. In fact, part of the widening of the emerging-market EMBI+ spread in March coincided with that of the GM profit announcement (recall Chart 9). Similarly, the growth in credit-risk-transfer instruments, such as credit default swaps, since the late 1990s, has potentially increased the linkages between different types of asset markets. Such linkage would heighten the possibility that volatility in one market (e.g., corporate debt markets) could spill over into other markets. (See Reid 2005 in this issue for a discussion of the financial system effects of CDSs.)

Financial institutions

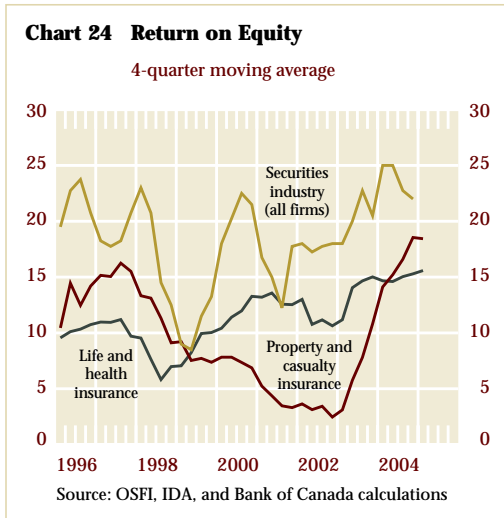
In aggregate, the major banks reported record profits for the first quarter of 2005 (Chart 23). The diversity of the banks' operations has continued to contribute to their strong financial performance, with all three major business areas—consumer and commercial banking, wholesale (corporate and investment) banking, and wealth management—doing very well.

Although financial strength provides banks with a buffer should economic growth slow or credit quality deteriorate, this sector still faces near-term risks. One risk that may affect Canadian banks relates to the implementation of regulatory changes over the coming years. In an international survey conducted for the Centre for the Study of Financial Innovation, and released in February 2005, responses from 440 market participants, regulators, and other observers of the financial sector from around the world indicated that the main risk facing international banks this year pertains to the implementation of new regulations. The process of implementing regulatory changes could have adverse financial repercussions for banks. It could raise operational risks, for example.²⁵

Chart 23 Bank Profits



25. The BIS considers important types of operational risk to include breakdowns in internal controls and corporate governance; major failure of information technology systems; and errors in execution, delivery, and process management.



These regulatory changes, which should enhance the stability and efficiency of the global financial system, when firmly in place, include the implementation of the new capital-adequacy framework for banks known as Basel II.

The securities industry in Canada reported strong fourth-quarter results in 2004, boosting profits for the year to a record high of \$3.9 billion. The two main drivers for growth in the Canadian securities industry in 2004 were the wealth-management business and investment banking. These drivers boosted the return on equity in 2004 for securities dealers not owned by banks, those for which financial performance is not included in the bank profits discussed above (Chart 24). Other financial institutions in Canada, such as life, health, and property and casualty insurance companies, have also continued to report robust profitability.

Important Financial System Developments

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

Key Points

- The reliability of corporate financial reporting is vital for investor decision making and financial market efficiency.
- Regulatory initiatives to enhance corporate financial reporting, with a view to increasing transparency and accountability, should also consider the relevance of the information reported and the costs of providing it.
- The adoption of new technology, together with new entrants to the Canadian residential mortgage market, has provided consumers with increasingly flexible mortgage features and competitive interest rates.

Highlighted Issues

Two efficiency-related financial system issues are discussed in this section: the increase in the level and accuracy of corporate financial reporting and the changing landscape of the Canadian residential mortgage market.

Corporate financial reporting: The regulatory response in the United States and Canada

Prepared by Lorie Zorn

The reliability of corporate financial reporting is vital for investor decision making and, ultimately,

for financial market efficiency. Confidence in the integrity of capital markets provides firms with greater access to capital and thus supports economic growth. But when establishing more demanding reporting requirements, it is important that regulators consider the implementation costs, as well as the benefits of the new rules.

Frauds at Enron and WorldCom have focused attention on the level and accuracy of financial reporting. U.S. regulators acted quickly by passing the Sarbanes-Oxley Act (SOX) in July 2002, which set new U.S. standards for corporate governance, accounting, and financial reporting. The Canadian response has been more measured, with members of the Canadian Securities Administrators (CSA) proposing various rules to improve investor confidence over the course of 2003–2005.²⁶

Although they have publicly endorsed the intent of SOX, a number of stakeholders contend that this regulatory initiative imposes unnecessarily high costs without commensurate benefits to investors. Specifically, their concerns include the inadequate treatment of differences in firm size and complexity, inundating investors with too much information, and the diversion of corporate resources from core business activities. Many argue that these aspects of SOX do not adequately recognize the role of profit in driving competition and motivating investors.

One of the most contentious elements of SOX is Section 404, which requires a management report and auditor attestation on the effectiveness of a firm's internal operational and financial controls. The rules apply to companies registered with the U.S. Securities and Exchange Commission (SEC), and, for most, the rules

26. For an account of various initiatives aimed at restoring investor confidence, see Armstrong (2003) and Crow (2004).

came into effect for fiscal years ending after 14 November 2004.

When the SEC's final rule on SOX 404 was published in June 2003, the document included a discussion of benefits and costs. Although "not readily quantifiable," the SEC listed the benefits as devoting more resources and attention to internal control; identifying weaknesses in advance of a system failure; facilitating the continued, orderly, and timely flow of information to investors and the marketplace; and minimizing fraud. While SOX has certainly increased the focus on internal controls, as the SEC had anticipated, it may take longer for the other benefits to materialize. In terms of costs, the SEC's original estimates for compliance with SOX were forecast at US\$1.2 billion, or \$91,000 per company. The SEC recognized that this did not include costs for auditor attestation or any indirect costs, such as reduced incentives for companies to publicly raise capital in the United States.

There is anecdotal evidence that implementation costs for SOX 404 are rapidly mounting, and that the legislation may be affecting capital market behaviour. Recent surveys of U.S. companies have found that the average incremental cost of implementing SOX 404 thus far is much higher than originally estimated, particularly for smaller firms. There have also been reports that more companies than usual will be late in filing their annual reports in order to complete testing of their accounts and controls, and that fewer companies may be engaging in merger and acquisition activity in order to avoid additional SOX-related obligations. This may be further exacerbated by difficulties in obtaining accounting advice as auditors strictly adhere to the requirement for independence.

The media have reported that many smaller firms and foreign issuers, to which the regulations do not yet apply, are considering delisting their shares and/or deregistering with the SEC to avoid the anticipated administrative, legal, and accounting costs of compliance. This potential withdrawal of corporate activity from public scrutiny could work against the original intent of SOX to reduce financial abuses. Firms with more than 300 U.S. shareholders are still subject to SEC rules, including SOX, and European business groups in particular have been lobbying the SEC to loosen this provision.

There have also been indications that credit ratings may be negatively affected and that share prices may fall for those firms that do report inadequate internal controls. Because auditors may be applying overly strict interpretations of SOX to avoid potential liability issues, and because procedural controls may not necessarily eliminate financial fraud (i.e., ethical behaviour is equally important), these firms could be more heavily penalized than is warranted by the risk of fraud resulting from inadequate controls.

In response, the SEC has consulted affected parties and is reviewing implementation experiences with SOX 404 with the aim of helping firms to reduce their compliance costs. Following a roundtable discussion in April, both the SEC and the Public Company Accountability Oversight Board (PCAOB) issued additional guidance to management and auditors aimed at reducing the burden of implementing SOX 404.²⁷ An advisory committee has been set up to examine the impact of SOX, as well as other federal regulations, on smaller public companies and to recommend ways to scale regulation based on size. This summer, a task force of the Committee of Sponsoring Organisations (COSO) will publish guidelines to help smaller companies. The SOX 404 compliance deadline for smaller firms and foreign private issuers has been extended twice, with the latest extension granting these companies an extra year, to 15 July 2006, before these requirements apply.

In Canada, regulators have taken more time to develop enhancements to financial disclosure. Canadian firms with U.S.-listed securities are subject to SOX. For those that are not, a number of CSA rules—seen to be the main Canadian response to SOX—came into force in March 2004. These included continuous-disclosure obligations, audit requirements, and rules on the certification of issuers' filings (the latter was not adopted by British Columbia), but not management and auditor assessments of internal controls.

In February 2005, after further study, members of the CSA²⁸ announced its proposed rules on internal control over financial reporting and

27. The PCAOB guidance for auditors focused on the scope of the internal-control audit and the required amount of testing of a company's financial reporting.

28. Excluding British Columbia

related certification requirements. Similar to SOX 404, an evaluation of internal controls by management and auditors would be required, along with management's disclosure and certification of any material weaknesses in internal controls or fraud that they uncover. The announcement indicated the importance of harmonizing Canadian and U.S. certification requirements, given the connection between the two markets, and given the importance of maintaining the international reputation of Canadian markets. It also acknowledged the time and costs required for implementation, in light of U.S. experience so far.

At the same time, the CSA released an independent cost/benefit study of the proposed internal-control requirements. The study concluded that only for large issuers (at least \$500 million in assets) are the measured costs and benefits of the proposed legislation approximately equal.²⁹ However, the report cautions that the benefits are difficult to quantify and may therefore be underestimated.

To address anticipated concerns about costs and about the limited availability of appropriate expertise, the proposed Canadian rules would allow internal-control requirements to be phased in between 30 June 2006 and 30 June 2009, according to an issuer's market capitalization. While certification requirements would be imposed on all reporting issuers other than investment funds, reports evaluating internal controls would be required only from (non-venture) TSX-listed companies. The CSA has encouraged public comment, particularly with respect to the issuers to which the rules should apply; the appropriateness of the phase-in period; and the assessment of the benefits, costs, and alternatives. Consensus has not been reached among the provincial securities regulators regarding the suitability of the proposed rules, and different alternatives to the CSA rules are still being considered by certain provinces.

The release of the CSA's proposal occurred alongside a continuing and very public U.S. debate about corporate reporting requirements. This has given Canadian stakeholders the

opportunity to benefit from the U.S. experience in shaping Canadian standards for corporate financial disclosure. Regulations that attempt to maximize the benefits of increased transparency and accountability, while considering the relevance of the information reported and the costs of providing it, will support the integrity and efficiency of capital markets in Canada.

Developments in the Canadian residential mortgage market: New technology, competition, and strategies

Prepared by Jim Day and Greg Tkacz

Some noteworthy changes in Canada's \$600 billion residential mortgage market have taken place over the past 10 years. New competitors have adopted new technology using a pricing strategy that differs from that of banks, preferring to offer their lowest mortgage rate up front without negotiations. The major banks have responded to this competition by offering discounts on posted rates to creditworthy borrowers to bring their mortgage rates in line with those of the new entrants. These developments have benefited Canadians by providing mortgage features that are increasingly flexible and rates that are competitive across institutions.

The 1970s and 1980s: Banks and trust companies

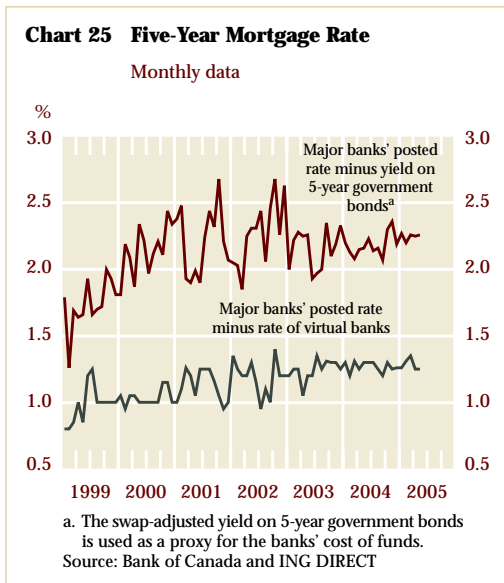
During the 1970s and 1980s, not much differentiated the mortgage offerings of the financial institutions. Term options and payment features were limited, and the differences in mortgage rates at banks and at trust companies were negligible. There is little evidence of widespread discounting of mortgage rates by banks or trust companies during that time. In the late 1980s and 1990s, many trust companies were acquired by banks or went out of business.

The 1990s: New competition (virtual banks and mortgage brokers)

In the late 1990s, the popularity of the Internet as a means of banking brought a new kind of bank to the fore: the virtual bank. ING DIRECT and President's Choice Financial are two of the more prominent virtual banks in Canada.

Although independent mortgage brokers have existed in Canada since at least the 1970s, they were not a major force in the mortgage business

29. For smaller Canadian issuers (i.e., with less than \$50 million in assets), the benefits of compliance do not exceed the costs; for mid-size companies (up to \$500 million in assets), the evidence is inconclusive.



until the past few years, when many of the smaller players combined to form “super-brokers.” Mortgage brokers do not originate mortgage loans, they just bring borrowers and lenders together, and, in many cases, the ultimate lender is one of the banks, although these brokers have no ties to any one mortgage extender. Brokers receive volume pricing from the banks and are able to offer a competitive rate to customers without negotiation. In 2003, 26 per cent of home buyers used a mortgage broker, compared with 14 per cent in 1999, according to a CMHC survey.

Different strategies: Everyday low price vs. negotiated discounts

The “everyday-low-price” strategy of the virtual banks has increased their share of the Canadian mortgage market.³⁰

Major Canadian banks post national interest rates for their mortgage products, but their chosen strategy appears to be negotiation of the actual rate charged on a customer-by-customer basis. Discounts offered by major banks from their posted rates were modest in size (about 25 basis points) in the early 1990s and were offered to a minority of new customers. Anecdotal evidence also indicates that a significant number of the mortgage customers of major banks in the 1998 to 2000 period were not receiving mortgage rate discounts. Today, however, most consumers have come to expect a discount, and it is not uncommon for creditworthy borrowers to obtain large discounts (of 125 basis points or more) from posted 5-year mortgage rates. The major banks appear to have become more aggressive in trying to prevent a loss of market share through the use of discounts and special “no haggle” offers.

The effective mortgage interest rate is measured by the posted rate minus the discount. While major banks have increased mortgage rate discounts for creditworthy borrowers, their posted rates also appear to have increased over time, relative to the cost of funds for mortgage providers (Chart 25). It would therefore be incorrect to conclude that the increase in discounts represents an equivalent decrease in effective mortgage rates. Rather, the result of the increase in both discounts and the spread between posted

30. The overall market share of virtual banks remains modest at about 2.5 per cent.

bank mortgage rates and their cost of funds appears to be that the maximum discounted rate offered by banks is now broadly in line with the rate being offered without negotiation by the virtual banks and mortgage brokers.

Use of technology

Increased knowledge and Internet availability of credit reports and credit scores from major credit-reporting agencies have improved the negotiating position of borrowers with their banks. The ease of finding and comparing mortgage rates on the Internet has also helped borrowers to obtain a competitive rate.

Conclusion

New competition has been beneficial for consumers, giving them more choice and access to lower mortgage rates without negotiating. While the major banks retain the majority share of the residential mortgage market, the presence of the new Internet banks and mortgage brokers has changed the way that banks market their mortgage products. Over the past 10 years, major banks appear to have become more aggressive in trying to attract and retain creditworthy customers through mortgage rate discounts. Today, most bank customers are obtaining an effective mortgage rate that is competitive with that of the virtual banks and mortgage brokers. This points to a healthy Canadian mortgage market, one in which mortgage features are increasingly flexible and rates are competitive across institutions.

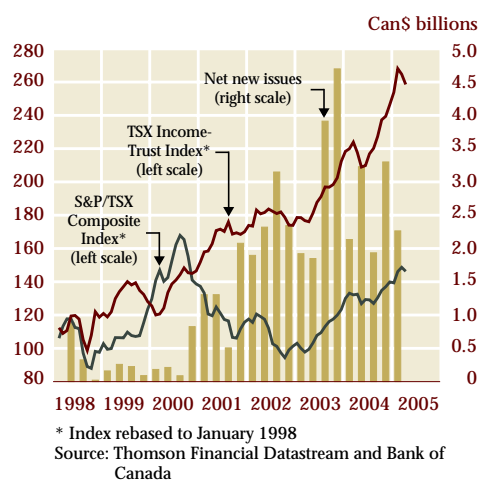
The Financial System

Financial markets

During the past six months, there have been several legal and regulatory developments that are likely to affect financial markets over the longer term. For instance, the federal budget introduced in February 2005 proposed the elimination of the 30 per cent foreign property limit on pension investments. This change would likely affect the efficiency of the Canadian financial market in a number of ways (Box 3).

As well, there have been two important developments that are expected to increase investing interest in income trusts (Chart 26).

Chart 26 Income Trusts



Box 3

The Impact on Canadian Capital Markets of the Foreign Property Rule and Its Proposed Elimination

The Foreign Property Rule (FPR) was introduced in 1971 as a provision of Canada's Income Tax Act. It restricts the amount of foreign assets that can be held in tax-deferred savings plans, including Registered Pension Plans (RPPs) and Registered Retirement Savings Plans (RRSPs). Over time, the limit was increased from 10 to 30 per cent of assets. Recently, in its 2005 budget, the federal government proposed the elimination of the FPR¹ During the years in which the FPR was in place, investors developed innovative means by which to increase their foreign exposure above that allowed under the FPR.

One common means of increasing foreign exposure above the limit set by the FPR involves the use of derivative securities. One popular strategy involves purchasing foreign equity index futures, posting a small margin, and investing the remainder in Canadian T-bills. Because futures represent a contract rather than an asset, an investment fund that implements this strategy is deemed to hold 100 per cent Canadian content, even though its investment returns are determined largely by the return on foreign equities. A similar strategy can be followed using total return swaps or forward contracts in the over-the-counter market.² Mutual funds using these strategies are known as Registered Savings Plan "clone funds." The growing number of such funds over the years gives an indication of the popularity of these strategies for all registered plans. By early 2005, they numbered in the hundreds and, at \$27 billion, represented approximately 5 per cent of mutual fund assets under management.³

There are, however, some drawbacks to using derivatives to increase the foreign exposure of a portfolio. In addition to the direct costs associated with derivative transactions, this type of strategy can be complex and subject to limited liquidity, and is not a perfect substitute for direct foreign exposure.

Another approach to increasing foreign exposure is often referred to as "double dipping" or "stacking." It involves investing the maximum amount allowed directly in foreign content and then investing additional funds in investment funds classified as Canadian content, but which can each hold foreign assets up to the maximum allowed under the FPR. This strategy, while allowing an increase in foreign exposure

beyond the limit set by the FPR, still means operating within a ceiling on foreign exposure.

What effect has the Foreign Property Rule had on the efficiency of Canadian capital markets? Fried and Wirick (1999) conservatively estimate the direct cost to investors in terms of an increased management expense ratio (MER) of approximately 8 basis points for international equity funds. This estimate does not take into account the forgone risk-adjusted returns that investors would have earned had they been able to fully diversify into foreign markets. Indeed, some mutual fund companies reacted immediately to the federal government's 2005 budget announcement by decreasing MERs on clone funds by up to 45 basis points to bring them into line with underlying (unconstrained) funds. While many of these clone funds may disappear, others may restructure and provide valuable services to investors, such as fully currency-hedged foreign exposure.

Although it is impossible to predict all of the implications of the proposed removal of the Foreign Property Rule, several outcomes are likely. One probable efficiency gain is a gradual increase in the aggregate foreign exposure, and thus the diversification, of Canadian investors. The extent to which this will occur, however, is uncertain, since both Canadian and international experience suggests that considerable "home bias" exists, even in the absence of restrictions on foreign investment. As of September 2004, for example, Statistics Canada data indicate that trustee pension funds held, on average, only 25 per cent of the book value of their assets in foreign investments (excluding strategies aimed at increasing foreign exposure involving the use of derivative securities)—below the 30 per cent limit. It is also likely that higher demand for foreign assets will, over time, make Canada a more attractive place in which to raise capital for foreign issuers of debt and equity. Finally, increased competition for Canadian investment assets from foreign fund managers could lead to further decreases in MERs for Canadian-based mutual funds.

1. The legislative measure to make this change effective has yet to receive parliamentary approval.

2. See Kolb (2000) for more information on these types of financial products.

3. Taken from Morningstar.ca and IFIC

First, in December 2004, the Ontario government passed legislation limiting the liability of trust beneficiaries.³¹ The theoretical liability issue was seen as a key obstacle to institutional investors, such as pension funds, investing in the income-trust market. Prior to the legislation, holders of income-trust units faced a theoretical risk of personal liability in the event of a lawsuit against the trust, which could imply potential losses in excess of the amount invested in the trusts. The new law now puts income-trust investors on a similar footing as equity shareholders.

Then in January 2005, Standard & Poor's and the Toronto Stock Exchange announced their intention to include income trusts in the S&P/TSX Composite Index. On 18 May, they announced an implementation plan and transition schedule for doing so. The transition is expected to be complete by March 2006. Indexed funds linked to the S&P/TSX Composite Index would thus have to invest in income trusts, since returns on income trusts have differed significantly from those on the current S&P/TSX Composite Index (Chart 26).

There have also been developments with respect to efforts aimed at enhancing the integrity of Canadian secondary debt markets, and these are discussed in Box 4.

Financial institutions

Canada's Commissioner of Competition has appointed an advisory panel to help assess the role that efficiencies should play in the administration and enforcement of the Competition Act in the context of Canada's evolving economy. The Advisory Panel on Efficiencies will consider the general economic and business implications of the current treatment of efficiencies under the merger provisions of the Competition Act (which applies to all industries) and will also comment on the characteristics that Canada's competition policy framework should have in order to ensure that efficiencies are properly addressed. The panel's report is expected to be published in June 2005.

Box 4

Code of Conduct for the Canadian Fixed-Income Marketplace

Policy-makers and the financial community, recognizing that public trust in the integrity of financial markets is essential to their efficiency and stability, have developed standards of conduct to guide the actions of market participants. Examples include the ACI-Financial Markets Association's Model Code, a set of guidelines that was adopted in 2001 by the Canadian Foreign Exchange Committee and others as the standard for best market practices in the domestic foreign exchange marketplace, and the Investment Dealers Association's (IDA) code of conduct for trading in wholesale debt markets (IDA Policy No. 5).

IDA Policy No. 5 was developed in 1998 by the IDA, the Bank of Canada, and the Department of Finance to safeguard the integrity, liquidity, and efficiency of Canadian fixed-income markets. This set of guidelines formally applies to investment dealers that are members of the IDA, and its standards are intended to serve as a guide to all other market participants.

The IDA is currently revising its code of conduct for trading in wholesale debt markets and is developing a new set of standards for participants active with retail investors. Both sets of guidelines are expected to come into force later this year. IDA Policy No. 5A will apply to institutional investors, while standards for retail debt markets will be contained in IDA Policy No. 5B. The revised code of conduct for wholesale debt markets will provide market participants with improved guidance on the types of trading activities that are prohibited. This includes any activity that is "fraudulent, manipulative or deceptive," or that "takes unfair advantage of customers, counterparties or material non-public information."

31. Other provinces, such as Alberta and Quebec, also have legislation limiting liability for trust beneficiaries.

Clearing and settlement systems

Settlement in the CLS Bank of foreign exchange trades in four additional currencies (the Hong Kong dollar, the South Korean won, the New Zealand dollar, and the South African rand) began on 7 December 2004. This brings the total number of CLS-eligible currencies to 15. The CLS Bank is now regarded as the best practice in dealing with the risk associated with foreign exchange settlement. Three years after the launch of CLS operations in 2002, the majority of large Canadian banks still do not settle their foreign exchange trades through the CLS Bank. However, most of the major banks have indicated that they intend to start participating in the CLS Bank by the end of 2005.

On 3 February 2005, the Canadian Payments Association introduced a new rule and two new settlement streams in the Automated Clearing Settlement System (ACSS) to accommodate the clearing and settlement of electronic online payments. These are designed to facilitate the development of alternative Internet payment services that will allow consumers to pay for their Internet purchases by debiting their bank accounts directly.

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