CANADA MORTGAGE BONDS PROGRAM EVALUATION

FINAL REPORT

PREPARED BY
KPMG LLP

JUNE 2008

CMHC—HOME TO CANADIANS

Canada Mortgage and Housing Corporation (CMHC) has been Canada's national housing agency for more than 60 years. Together with other housing stakeholders, we help ensure that the Canadian housing system remains one of the best in the world. We are committed to helping Canadians access a wide choice of quality, environmentally sustainable and affordable homes – homes that will continue to create vibrant and healthy communities and cities across the country.

For more information, visit our website at www.cmhc.ca
You can also reach us by phone at 1-800-668-2642
or by fax at 1-800-245-9274.

Outside Canada call 613-748-2003 or fax to 613-748-2016.

Canada Mortgage and Housing Corporation supports the Government of Canada policy on access to information for people with disabilities. If you wish to obtain this publication in alternative formats, call 1-800-668-2642.

CANADA MORTGAGE BONDS PROGRAM EVALUATION

FINAL REPORT

PREPARED BY
KPMG LLP

JUNE 2008

© 2008 Canada Mortgage and Housing Corporation

All rights reserved. No portion of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, mechanical, electronic, photocopying, recording or otherwise without the prior written permission of Canada Mortgage and Housing Corporation. Without limiting the generality of the foregoing, no portion of this publication maybe translated from English into any other language without the prior written permission of Canada Mortgage and Housing Corporation.

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

1.0 INTRODUCTION 1

2.0 CANADA MORTGAGE BONDS: PROGRAM PROFILE 4

3.0 EVALUATION SUB-STUDIES 12

4.0 FINDINGS RELATED TO THE RATIONALE FOR THE CMB PROGRAM 14

5.0 FINDINGS RELATED TO THE IMPACT OF THE CMB PROGRAM ON MORTGAGE FUNDING AND BORROWING COSTS 29

6.0 FINDINGS RELATED TO THE IMPACT OF THE CMB PROGRAM ON COMPETITIVENESS 42

7.0 FINDINGS RELATED TO THE IMPACTS OF THE CMB PROGRAM ON CAPITAL MARKETS 51

8.0 FINDINGS RELATED TO THE COST-EFFECTIVENESS OF THE CMB PROGRAM 55

9.0 SUMMARY OF KEY FINDINGS 73

ANNEXES:

A—GLOSSARY OF TERMS

B—BACKGROUND ON THE STRUCTURE OF THE CANADIAN RESIDENTIAL MORTGAGE MARKET

C—ADDENDUM ON CURRENT MARKET CONDITIONS

EXECUTIVE SUMMARY

The Canada Mortgage and Housing Corporation (CMHC) launched the evaluation of the Canada Mortgage Bonds (CMB) program in late 2005. Following a detailed planning phase and competitive proposal process, the evaluation study was carried out over the period October, 2006, through March, 2008. It was sub-divided into 10 sub-studies, which were conducted by six separate consulting firms contracted by CMHC. CMHC was responsible for overall study coordination. KPMG assisted with study coordination and was responsible for the integration of the information from the sub-studies and the preparation of this summary report.

CMHC's Audit and Evaluation Services established a Steering Committee for the CMB evaluation, which included representatives from the Department of Finance, the Bank of Canada, and Treasury Board Secretariat, as well as CMHC officials. The Steering Committee met at key milestones during the evaluation project to provide feedback and advice to CMHC's evaluation team.

The evaluation examined the CMB program during its first five years of operation, 2001 through 2006. The findings are specific to the market structures, financing options, and conditions that prevailed during that time period, and the evaluation does not seek to predict how the program may perform under different conditions (such as, for example, the current state of uncertainty in financial markets). However, an Addendum was subsequently prepared that deals with the implications of recent changes in market conditions and is attached as Annex C.

In line with Treasury Board's Evaluation Policy and guidelines for evaluations, the evaluation considered the relevance, impacts, and cost-effectiveness of the program. The overall conclusions of the evaluation and the key findings related to the five evaluation issues outlined in the Evaluation Framework are summarized below.

CMB PROGRAM CONTEXT

The CMB Program has provided a means to access capital markets to secure residential mortgage funding at lower costs than alternative sources of funding available. From 2001 to the end of 2006, $97.6 billion of CMB were issued (of which $95.4 billion in CMB were outstanding as of December 31, 2006), accounting for 14.7% of the total residential mortgage volume outstanding in 2006 of $650 billion.

OVERALL CONCLUSIONS

Overall, the evaluation found that much of the original rationale for the program is still valid and that the objectives have been met. The main impacts of the program have been as follows:

- It has provided lower cost mortgage funding to financial institutions.

- It has resulted in savings to mortgage borrowers as a result of the pass through by financial institutions of a large percentage of this cost of funds advantage.

- It has increased the availability of mortgage funding to smaller lenders, and this was probably a factor in enabling them to maintain their share of a rapidly growing market leading to more than doubling their annual volumes of mortgage approvals during the study period.

- It has provided a mechanism to access capital markets for residential mortgage funding and has helped to meet investor demand for high quality bonds.

In addition, the program has resulted in net revenues to the government — based on guarantee fees earned and the revenues and expenses associated with CMHC's role as Financial Services Advisor – of approximately $79 million through the end of 2006 (net revenues in 2006 were $31 million).

FINDINGS REGARDING THE RELEVANCE OF THE PROGRAM

The objectives of the program – contribute to increased competition and contribute to lower mortgage costs for Canadian mortgage borrowers – were consistent with government priorities in the context of CMHC's mandate and the issue of risk to government.

With regard to the rationale for the program (the reasons why the program was needed), there was a valid rationale for the CMB program at the time it was introduced, and this rationale, for the most part, is still valid today.[1] In particular, two of the original rationales for the program are still valid:

- the need to ensure competition in the residential mortgage market; and

- the need to ensure an adequate supply of low-cost mortgage funding to financial institutions.

The need to improve securitization vehicles, which was also part of the original program rationale, was not as great at the end of 2006 as it was at program inception, because (a) securitization has become better understood and accepted by investors, and (b) financial institutions are better able to understand and manage securitization vehicles themselves.

FINDINGS REGARDING THE IMPACTS OF THE PROGRAM

Impact on cost of funds to financial institutions. The CMB program has contributed to lower costs of mortgage funding for financial institutions. The cost of funds obtained by the big five banks through the CMB program during the study period was about 18 basis points less, on average, than the cost of their next cheapest alternative source of long-term wholesale funding. Smaller lenders experienced a similar, although possibly smaller, cost of funds advantage.

[1] Readers are reminded that "today" means as at the end of 2006.

Impact on availability of funds to financial institutions. Residential mortgage securitization, particularly through the CMB program, has played an increasingly large role in financing the mortgage portfolios of the big five banks over the past several years. In the absence of the program these banks would have been able to obtain sufficient funding from other sources (albeit at higher cost). The program has had a significant impact on the availability of funds to the smaller lenders – they would have found it more difficult to access funds in the absence of the program.

Impact on savings to mortgage borrowers. Some of the big five banks explicitly pass on the CMB cost of funds advantage to their mortgage departments by way of their internal pricing of funds that are used for mortgages. Others also factor the cost of funds advantage into mortgage pricing considerations. Because of this and the fact that the mortgage market has been highly competitive during the study period, a large percentage of the CMB cost of funds advantage has been passed on to mortgage borrowers. Since the CMB funding accounted for only 15% of residential mortgage volumes in the study time period, the average savings for all mortgage borrowers was approximately 3 basis points. At the end of 2006, the program was saving Canadian mortgage borrowers up to $174 million per year, and savings over the course of the study period have been up to approximately $400 million.

Impact on the participation of small lenders in the market. The residential mortgage market has grown substantially during the study period, with the stock of residential mortgages outstanding increasing from about $400 billion to about $650 billion. Smaller lenders maintained their share of this rapidly growing market. The CMB program was probably a factor in enabling them to do this through its role in facilitating their access to mortgage funding.

Impact on competitiveness. The competitiveness of the residential mortgage market increased greatly over the study period. This was mainly due to factors such as the growth of the mortgage broker channel, the entry of foreign lenders, better consumer product information, the rise of mortgage specialists, and so on. The CMB program may have had an indirect impact on increased competitiveness as a result of its support for smaller lenders and the fact that smaller lender activity was a significant factor in the growth of the broker channel.

Impacts on capital markets

- Canada Mortgage Bonds have been an effective vehicle for accessing funds from the capital market, and they have served to satisfy investor demand for high quality bonds as GOC bond issuance has fallen.

- There have been no unintended negative effects on capital markets – in particular, there has been no noticeable bond market disruption, no noticeable impact on the GOC yield curve, no market disruption due to CMB replacement assets, and no significant impact on swap rates.

- Because of the attractiveness of CMBs compared to other forms of borrowing, CMBs have substituted, to some extent, for bond issuance and private securitization issuance by participating financial institutions.

FINDINGS REGARDING THE COST-EFFECTIVENESS OF THE PROGRAM

A mix of methods is in place to align and balance costs, revenues, and risks, while providing incentives for participating financial institutions, intermediaries, and investment dealers to facilitate participation by lenders, maximize take-up of CMB issues, and ensure investors receive timely payments.

The evaluation examined whether there might be changes to the program's design or delivery process that could increase its overall cost-effectiveness. Two possible changes, both of which are under consideration by CMHC, were identified. These deal with the level of underwriting fees and the criteria for replacement assets.

The study also considered the possibility of changes to the CMB guarantee fee that might increase the program's cost-effectiveness, but concluded that further analysis, which goes beyond the scope of the evaluation, would be necessary to determine if the guarantee fee is sufficient to cover all the risks it is intended to cover, whether it could be decreased, or whether it should be increased. This analysis is currently being conducted internally by CMHC.

RECENT CHANGES IN HOUSING FINANCE MARKET CONDITIONS

As noted above, the findings of this evaluation are based on an analysis of the CMB program during the period 2001 to 2006. During the course of the evaluation, and since the summer of 2007, financial markets in Canada and elsewhere have undergone (and are still undergoing) some major changes. Following the completion of the evaluation, three of the senior members of the evaluation study team prepared an addendum to the evaluation that describes how the findings of the evaluation would likely be different if it were based on today's conditions rather than the 2001-06 period. The key points made in the addendum are summarized below, but readers should keep in mind that this addendum is a discussion paper, not a study, and these points are not based on the same level of data collection and analysis as the evaluation:

- The cost of funds advantage of the CMB program has increased significantly since the evaluation study period.
- The program has played a stabilizing role in Canadian mortgage markets since the Fall of 2007 by providing a reliable funding source, and this has been particularly important for smaller lenders who have fewer alternatives in this environment compared to the big five banks.
- Demand for CMB funding has increased from all lenders, while issue size has stabilized, so the allocation process to provide funding to financial institutions has become an important factor in supporting and potentially influencing competition among lenders.
- Mortgage spreads (relative to Government of Canada bonds) have widened, permitting new or expanded entrance into prime mortgage lending at profitable margins compared to pre-August, 2007, levels.
- Through its support for smaller lenders, the CMB program has enhanced the competitiveness of the mortgage market, and some smaller lenders have been price leaders in parts of the mortgage market in recent months, gradually reducing mortgage rates overall.

1.0 INTRODUCTION

This report summarizes the findings of the Evaluation of the Canada Mortgage Bonds (CMB) Program during its first five years (2001-2006).

The Canada Mortgage Bonds (CMB) Program was introduced in June 2001 by Canada Mortgage and Housing Corporation (CMHC) to support the secondary mortgage market by guaranteeing mortgage backed bonds. The program was established following the expansion of CMHC's mandate in 1996 and the 1999 amendments to the National Housing Act (Bill C-66) that enabled CMHC to revise its insurance and guarantee operations. The program was developed by CMHC in collaboration with the mortgage financing industry and approved by the Minister of Finance in October 2000.[2] The Minister of Finance requested that CMHC assess and report on any impacts of the program on the mortgage market in Canada, and capital markets in general.

In 2005, Finance Canada completed a study of borrowing by Crown Corporations[3] and in 2006 announced the government policy of consolidating borrowings by certain Crown Corporations. Borrowing by the Canada Housing Trust (CHT) related to the CMB program was excluded from this decision.

1.1 SCOPE OF THE CMB EVALUATION

CMHC launched the CMB Evaluation in late 2005 to assess the effects of the program during its first five years (2001-2006) on the mortgage market in Canada and on capital markets in general. In line with Treasury Board's Evaluation Policy (2001)[4] and guidelines for evaluations, the evaluation considered the relevance, impacts, and cost-effectiveness of the program. The CMB Evaluation Framework (May 10, 2006) was reviewed by the CMB Evaluation Steering Committee established by CMHC to provide feedback and advice on the evaluation.

Specifically, the CMB Evaluation was designed to address five evaluation issues:

1. *Is the CMB relevant and material to government intervention to improve the efficiency of secondary mortgage markets and the supply of residential mortgage funds in Canadian mortgage securities?*
2. *To what extent has the CMB Program contributed to lower mortgage costs for Canadian borrowers?*
3. *Has the CMB Program contributed to enhanced competitiveness in the mortgage market?*
4. *What have been the impacts of the CMB Program on capital markets and on bond markets including Government of Canada bonds?*
5. *Are there areas for improvement in CMB program design and delivery that may enhance program cost-effectiveness and achievement of program objectives?*

---

[2] The CMB was approved by means of a Request for Approval Letter (dated October 5, 2000) from the Minister responsible for CMHC to the Minister of Finance, and authorized by an Approval Letter (dated October 20, 2000) from the Minister of Finance to the Minister responsible for CMHC. Design modifications were approved by the Minister of Finance by means of a letter to the Minister responsible for CMHC in March 2001.

[3] *Report on Crown Borrowing Review*, Finance Canada, 2005

[4] *Evaluation Policy*, Treasury Board Secretariat, February, 2001.

Early in the evaluation study, the evaluation study team developed a series of sub-questions related to each of these five evaluation issues in consultation with the CMB Evaluation Steering Committee. These sub-questions were used to focus the data collection, and they are used as the framework for reporting the results of the evaluation in sections 4 through 8 of this report.

The CMB Evaluation focused specifically on the CMB Program and was not intended to evaluate mortgage securitization generally, mortgage-backed securities vehicles, or other aspects of government policies related to housing finance. The CMB Evaluation may be expected to inform any subsequent policy analysis of government housing finance options.

The CMB Evaluation was undertaken after only five years of program operation from 2001 to 2006, and with the maturity of the first 5-year CMB bond issue in June 2006. Therefore, the evaluation could not address any longer term program outcomes, and is specific to the market structures, financing options, and conditions over the 2001-2006 time period. The evaluation does not seek to predict how the program may perform under different conditions.

Specifically, it is noted that:

- Market conditions over the 2001-2006 period were characterized by lower interest rates than had been seen for many years, high growth in residential mortgage lending volumes, favourable credit markets, and highly competitive markets. The evaluation did not seek to 'predict' CMB program outcomes that might occur in a different part of the economic cycle.

- Residential mortgage financing vehicles are evolving in Canada as elsewhere. During the period covered by the evaluation, options such as mortgage covered bonds were not available, and private mortgage bonds had not become established. In July 2007, Office of the Superintendent of Financial Institutions (OSFI) approved the issuance of mortgage covered bonds on a limited basis. The CMB evaluation could not assess the impact of this and other financing options on mortgage markets, and these will need to be evaluated after they have been available in the market place for some time.

- Changes in Canadian and international markets in the summer of 2007 led to a period of market uncertainty which was ongoing as this report was being written. These events are affecting the availability and cost of funds, which, in turn, affects the relative cost advantage of CMB. A brief discussion of the effects of changes in financial market conditions is contained in Annex C of this report. It should be noted that this discussion paper was completed after the evaluation and that it is not based on the same level of data collection and analysis as the rest of the evaluation report. Future studies will need to examine the changes in market conditions once the markets stabilize.

The evaluation used a multiple lines of evidence approach, including both quantitative and qualitative methods, with ten major background studies undertaken by specialized consulting teams. Given this standard evaluation design, findings on each of the evaluation issues are based on the balance of evidence from multiple background studies.

The evaluation study team included the following firms which were involved in background studies for the evaluation:

- KPMG LLP, Ottawa, Ontario
- ALM Model Metrics, Richmond Hill, Ontario
- Twist Financial Corp., Toronto, Ontario
- International Financial Consulting Ltd., Ottawa, Ontario
- Cardiff Economic Consulting, San Diego, California
- Andrew Kalotay & Associates, New York, New York

KPMG was responsible for the integration of background study information and production of the evaluation report. Other members of the evaluation study team reviewed the evaluation report to ensure consistency in reporting of findings from the detailed background studies.

CMHC's Audit & Evaluation Services established the Steering Committee for the CMB Evaluation that included representatives from the Department of Finance, the Bank of Canada, and Treasury Board Secretariat, as well as CMHC officials. The Steering Committee met at key milestones during the evaluation to provide feedback and advice to CMHC's evaluation team. The evaluation study team wishes to express its appreciation to the Steering Committee, to CMHC's internal Working Group for the evaluation, and to CMHC's Audit and Evaluation Services, particularly the Study Coordinator, for the enormous amount of effort they contributed to the evaluation study, as well as for their many useful suggestions and their support throughout the study process.

1.2 OUTLINE OF THE REPORT

Section 2 provides an overview of the CMB Program from 2001 to 2006.

Following a summary of the sub-studies conducted for the evaluation in Section 3, Sections 4 to 8 summarize the evaluation findings on each of the five evaluation issues. These sections are structured to address the detailed sub-questions and to integrate evidence from the sub-studies relevant to each of the questions.

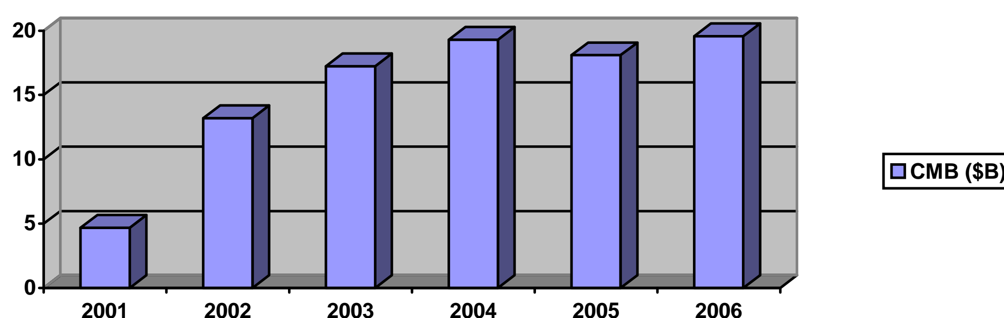
Annexes A and B provide a glossary of terms used in this Report and background on the Canadian residential mortgage market. Annex C includes an addendum to this Report on current market conditions.

2.0 CANADA MORTGAGE BONDS: PROGRAM PROFILE

2.1 OVERVIEW OF CMB

CMB are issued by Canada Housing Trust (CHT or the Trust), a special purpose trust created in April 2001 to issue CMB to the public. The volumes of CMB issuance grew from $4.7B in 2001 to a cumulative total issuance of $97.6B to the end of year 2006. With the maturity of the first series in 2006, the total outstanding bonds were $95.4B as of December 31, 2006. (Exhibit 1) The average issuance per year (2002-2006) was $18.6B (excluding the first partial year in 2001).

Exhibit 1
CMB Issuance by Year (2001-2006) ($ Billion)



CMB are issued globally in both domestic and foreign markets, and, in 2006, roughly one-third were sold in foreign markets (principally in the US and Europe).[5] Pension and fund managers are the largest type of investor, followed by other institutional investors, banks, trusts and loan companies. By the end of 2006, the outstanding CMB issuances ($95.4 billion) accounted for close to 14 percent of all outstanding residential mortgage market investment ($694 billion). The total CMB issuance from 2001-2006 ($97.6 billion) equated to 37 percent of the net increase in residential mortgage values outstanding over this period.

Through CMB, CHT raises funds at close to Government of Canada rates by issuing bonds or floating rate notes to provide funding for residential mortgages by purchasing mortgage backed securities under CMHC's National Housing Act Mortgage-Backed Securities (NHA MBS) Program. Most bonds are fixed rate, five year term bonds with semi-annual coupon payments, and the floating-rate notes are also five year terms with quarterly coupon payments. Since its introduction, the Program has expanded from providing financing for four to five year fixed rate mortgages to include insured second mortgages and variable rate mortgages in 2003, adjustable rate mortgages, including mortgages with different terms to maturity in 2005, and multi-family residential mortgages in 2006.

---

[5] Pursuant to "Rule 144A" of the Securities and Exchange Commission (SEC), CMB may only be sold to qualified institutional buyers in the United States as the bonds are not registered with the SEC. Similar restrictions apply in the European Union and elsewhere.

CMB are attractive to investors because of the guarantee of timely payment, and because they are bullet bonds (that is, provide regular payments of interest on the bonds or notes, and do not return the principal to investors until their maturity date). CMB carry a full and timely payment guarantee of the Government of Canada as provided through CMHC on interest and principal for the bonds and notes. CMB have a high credit rating (Standard and Poors AAA/Moody's AAA), and risk to investors is minimal because no prepayment risk is passed on to investors, and because of the timely payment guarantee.

2.2 OBJECTIVES OF THE CMB PROGRAM

As one component of CMHC's housing finance functions, the CMB is expected to contribute to the overall goals, namely, to ensure access to lower cost residential mortgage financing in all regions of Canada, promote market competitiveness and efficiency, and to enhance the well-being of the housing sector. More specifically:

> *"As a more efficient mortgage securitization vehicle, mortgage backed bonds can bring about lower mortgage costs for Canadian borrowers. Further, this more efficient source of funds can increase the competitiveness of the mortgage sector at home and abroad."*[6]

The CMB Program was established to provide Canada's mortgage industry with an alternative source of mortgage funding, and to help ensure Canadians have access to affordable mortgage financing. By providing a source of mortgage funds at a lower cost than funds from other sources, it is expected that the pass-through of these savings by lending institutions will translate into lower residential mortgage financing costs for borrowers, and improve competitiveness for existing mortgage financing participants and new entrants.

2.3 THE CHT AND ITS SERVICE PROVIDERS

CHT was established by CMHC as Canada Housing Trust™ No. 1 under the laws of the Province of Ontario pursuant to a declaration of trust dated April 9, 2001 made by its Issuer Trustee, CIBC Mellon Trust Company. CHT issues CMB to raise funds to purchase eligible housing loans (that is, mortgage-backed securities (NHA MBS)) from financial institutions in Canada that have been approved to sell NHA MBS to CHT (these institutions are referred to as Approved Sellers). To date, all eligible housing loans acquired have been packaged as mortgage backed securities issued under the CMHC NHA MBS Program. By purchasing mortgages packaged as NHA MBS from the Approved Sellers, essentially CHT is an investor in new mortgages or mortgage refinancing.

The administration of CHT activities is carried out by the Trust Administrator (CIBC) under an Administrative Agreement.[7] The Trust Administrator also enters into agreements, on behalf of the Trust, to receive services from Computershare Trust Company of Canada (as Central

---

[6] *CMB Request for Approval Letter*, October 5, 2000.

[7] Selection of the Trust Administrator was determined through an advertised, competitive procurement process based on detailed requirements and experience. The Trust Administrator may be removed under specific conditions during the term of the contract, subject to approval by the Trustee and the Guarantor.

Paying Agent, Trust Custodian, and Bond Indenture Trustee), and from CMHC (as Financial Services Advisor and Guarantor). Services provided are governed by the terms of contracts that include fees for services.

In addition, the CHT enters into master Swap agreements with approved financial institutions (the Swap Counterparties) that meet minimum acceptable credit ratings and provide the hedges required to manage the interest rate risk associated with cash flow differences between NHA MBS and CMB.[8] Through the swap transaction, CHT is fully hedged against interest rate risks and will have the funds needed to meet its coupon obligations to CMB investors. The CHT purchases NHA MBS from Approved Sellers that package eligible mortgages into pools. In 2006, there were 8 financial institutions serving as Approved Swap Counterparties and 16 financial institutions as Approved Sellers under the CMB, although the numbers change from time to time.[9]

CMHC performs two key roles in the CMB program and charges fees for these services, specifically as Financial Services Advisor (FSA) to CHT and as Guarantor of each CMB issue. As FSA, CMHC is responsible for analysis, recommendation, and approval of Approved Sellers and Swap Counterparties based on the set Protocols that have been approved for the Trust by the Guarantor, promoting the CMB program to participants and investors, gauging investor market demand for new CMB issuances and gauging "seller" demand, review and recommendation of NHA MBS offered for sale to CHT based on the set Protocols, allocation of funding amounts to Approved Sellers for each CMB, and engagement on behalf of CHT of the underwriting syndicate which distributes the bonds to investors. CMHC's activities related to the CMB Program are in addition to its regular securitization activities in the NHA MBS Program. In exchange for the FSA services, CMHC earns an upfront fee based on a fixed percentage of the CMB issued.

---

[8] CHT holds the NHA MBS as investments that provide it with cash flows, and CHT also has bond payment obligations to the investors in CMB. However, NHA MBS cash flows and CMB cash flows do not match each other. NHA MBS are amortizing assets that pay back principal and interest cash flows on a monthly basis and the overall interest that is paid can be less than expected due to unscheduled prepayments of principal by mortgage borrowers. To address this difference in cash flows, CHT enters into swap transactions with Swap Counterparties. The swap is a financial agreement that effectively transforms the ongoing cash flows from CHT's investments into the cash flows CHT requires to meet its CMB obligations. Under the swap, Swap Counterparties receive the monthly interest flows from the NHA MBS (net of CHT expenses) and in return they provide CHT with the regular interest payments that CHT needs to pay out to investors under the terms of the CMB. In addition, under the swap agreement the Swap Counterparties reinvest the monthly principal flows from the NHA MBS on behalf of the Trust. The Swap Counterparties may only carry out this reinvestment in AAA-rated mortgage-backed securities and Canada bond eligible assets that CHT can purchase. In effect, each of these Swap Counterparties takes back the responsibility and risk inherent in managing the unpredictable cash flows from NHA MBS pools and provides CHT with fully predictable cash flows to match its own obligations to pay investors regular CMB coupon payments.

[9] There is no limit on the numbers of swap counterparties or approved sellers, and the numbers (and institutions approved) may change such as when the credit ratings of the institutions change or when new institutions are approved under the CMB. Institutions may be both a 'swap counterparty' and an 'approved NHA MBS seller' provided that they meet the criteria for both (e.g. the Schedule I banks).

As Guarantor, CMHC provides a guarantee to investors for the timely payment of regular interest payments on bonds and the principal at maturity on the CMB. The timely payment guarantee constitutes a direct, irrevocable, unconditional obligation of both CMHC and the Government of Canada. In the event that CHT is unable to meet its obligations (i.e. interest and principal payments to CMB investors) the Guarantor will make the required payments to investors. As security for the Guarantee, CHT pledges all of its assets (i.e. its investments in NHA MBS) to CMHC. As Guarantor, CMHC earns a fee based on a fixed percentage of the CMB guaranteed and paid upfront with each bond issue. For each bond issue CHT must expressly request that CMHC provide a guarantee on the bond issued.[10]

To enable CMHC to properly assess its risks under the guarantee, CMHC requires regular Trust Administrator's reports, which demonstrate that the Trust Administrator is prudently managing and monitoring the risks of CHT's activities. The Trust Administrator also provides annual audited financial statements. In turn, CMHC relies on this information to monitor its risk exposure under the guarantee. Other mechanisms are in place to ensure that the Guarantor's risks are appropriately mitigated, without having to involve itself in the daily operations of CHT or in the daily legal obligation the Trust Administrator has for prudent management of CHT's activities and risks.[11]

In 2005, as a result of CICA Accounting Guideline 15: Consolidation of Variable Interest Entities, CMHC consolidated the financial statements of the CHT for the first time, as it was deemed that CMHC exhibits controlling interest over the operations of the CHT.

2.4 RELATIONSHIP BETWEEN CMB AND NHA MORTGAGE-BACKED SECURITIES (MBS) PROGRAM

The introduction of the CMB program in 2001 provided a second financing vehicle for securitization of mortgages in Canada along side the NHA MBS Program that has been in operation since 1987.

Securitization provides a means of accessing capital markets for housing finance and of creating alternate sources of funding that reduce dependency on retail deposits (the traditional source of mortgage financing) and creating funding options for non-deposit taking institutions.

In 1986, the NHA MBS Program was introduced to respond to high interest rates, instability of rates, and the lack of long term mortgage financing for borrowers. At that time, with the prevalence of short-term (e.g. one year) mortgages, mortgage borrowers assumed most of the

10 The Trust Administrator prepares an availment notice that allows the transaction to proceed subject to the terms and conditions in the Guarantee Notice prepared by CMHC as Guarantor.

11 Pursuant to the terms of the Guarantee and the other Operative Documents, the Guarantor has approval rights with respect to eligible Sellers and Swap Counterparties, Eligible Housing Loans / MBS / Trust Permitted Investments, CMB pricing, any amendments to the Operative Documents, and the replacement of the various service providers. CMHC, as Guarantor, also expects various criteria (within Government of Canada approval parameters) relating to Seller Qualification, Counterparty Qualification, Eligible Housing Loan Purchase, Bond Issue and Hedges are met.

interest rate risk associated with mortgages. In addition, prepayment options (under Section 10 of the Canada Interest Act) had created a disincentive for lenders to offer longer term mortgages to borrowers because the 3-month interest penalty on repayment had been found to be insufficient to compensate them for costs incurred on repayments as borrowers refinanced to take advantage of interest rate shifts. Under these conditions, the NHA MBS was expected to provide a more stable and efficient funding source for residential mortgage financing, where CMHC provided a guarantee of timely payment on mortgage-backed securities as a credit enhancement to lower the cost of funding and increase the attractiveness of the securities to investors.

In 1996, CMHC's mandate for the NHA MBS was renewed on a commercial (as opposed to a non-profit/break-even) basis. The NHA MBS was viewed as being a more efficient means than regulation to promote competitive prices given the size of the market in Canada, and it was also a mechanism to ensure an adequate supply of lower-cost funds to meet growing demand for mortgage financing. With an aging population, declining savings, and rising competition from asset-backed securities leading to reduced investment pools from other sources, the availability and price of other funding sources were under pressure. Therefore, the objectives of the renewed NHA MBS Program included ensuring access to residential mortgage financing for borrowers, enhancing competition and efficiency in the mortgage loan insurance and guarantee markets, protecting an adequate supply of low-cost mortgage funds, and contributing to the well-being of the housing sector in the national economy. The 1996 CMHC Annual Report noted that the NHA MBS Program was expected to promote a healthy, liquid secondary mortgage market that supported lower mortgage interest rates and longer term mortgages.

The renewed NHA MBS continued to provide for the CMHC timely payment guarantee. Guarantee fees paid by issuers of NHA MBS entirely funded the MBS Guarantee Fund, which was administered by CMHC. In 1996, according to the 1996 CMHC Annual Report, guarantee fees earned were $8 million and total operating expenses were $1.5 million, so that the net revenues from the NHA MBS Centre was $6.5 million.

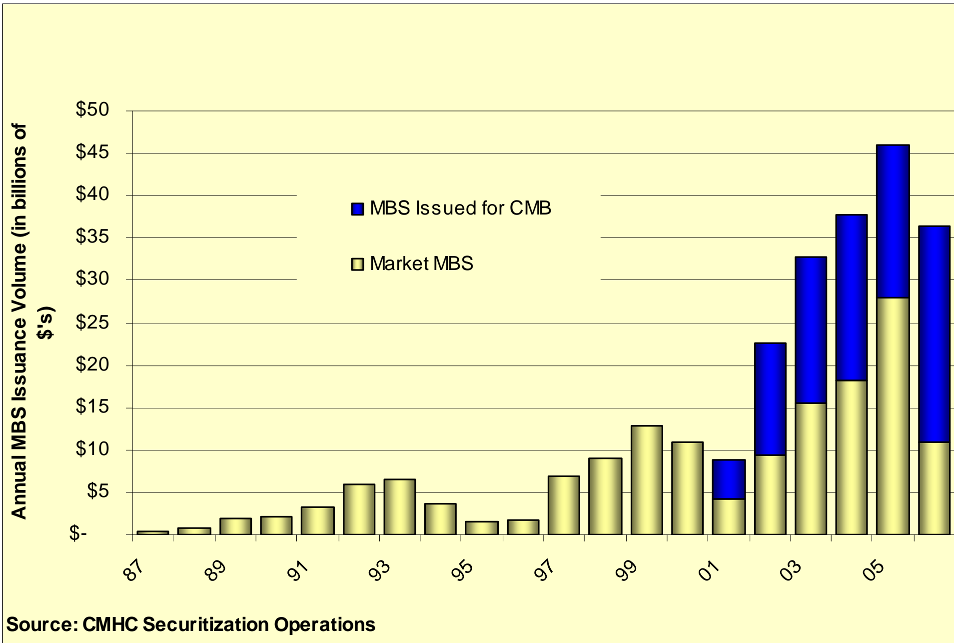
Under the NHA MBS guarantee, CMHC guarantees the timely payment of interest and principal to the investors – i.e., that payments made by mortgage holders to MBS issuers (financial institutions) will be fully passed through to the MBS investors in a timely way. As all of the underlying mortgages in NHA MBS pools were required to be insured, the underlying assets were essentially credit risk-free, although investors in NHA MBS still face prepayment risk. NHA MBS issuers had (and have) to meet stringent eligibility requirements.

NHA MBS volumes grew from $456m in 1987 to $6.58B in 1993, and, in 1993, 27.3 percent of all new NHA-insured mortgages were securitized. However, volumes declined in the mid-1990s, and in 1996, only 6 percent of all new NHA-insured mortgages were securitized. The MBS had become a less attractive investment option as interest rate spreads to benchmark Government of Canada rates had narrowed, and the shift to shorter term mortgages made mortgages less favourable for pooling into MBS.

The pass-through payment structure on mortgage-backed securities also made them less attractive than other investments to investors because of the complexity of monthly principal and interest payments to investors. Uncertainties about the cash flow amounts, and the need to reinvest the coupon payments were impeding the growth of the NHA MBS by the mid-1990s.

In 2000/01, the CMB was created to be a bond-type instrument that was more attractive to investors than the NHA MBS instrument. Since 2001, the annual volume of NHA MBS pools issued has grown substantially (Exhibit 2). Note that this exhibit shows MBS issued, not MBS sold into the marketplace. Many financial institutions issue MBS and hold them on their balance sheets rather than sell them into the marketplace.

Exhibit 2
Annual NHA MBS Issuance Volumes ($B)



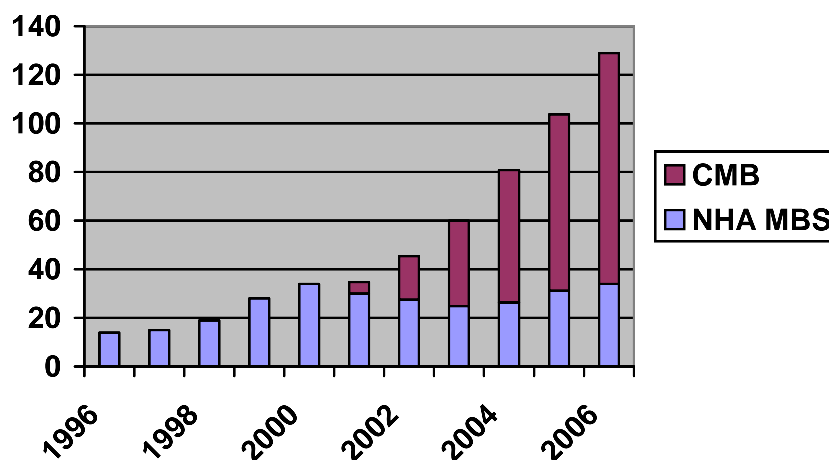
Whereas the 'market MBS' (i.e. non-CMB NHA MBS) has remained fairly stable, the share of NHA MBS sold to CHT has risen over the 2001-2006 period. In addition, the requirement for 'replacement assets' to maintain the CHT asset holdings (as the NHA MBS amortize over the term of the bonds) has resulted in additional 'pre-pooling' of mortgages into NHA MBS by the financial institutions.[12] Securitization volumes in the six years since 2001 exceeded $206B compared with $43B in the six years prior to 2001, close to a fourfold increase. In addition, CMHC securitization as a share of the total residential mortgage securitization volume has increased from about 50 percent in 2000 to close to 80 percent in 2006.[13]

Guarantees in Force under CMHC Securitization

A second indicator of the increased volumes of securitization over the past 10 years is the total 'guarantees in force' which represent the total outstanding at the end of each year. The year over year increases are accounted for by annual issuances, net of amortizations and maturities. At the end of 2006, guarantees in force totalled $129B including $34B of CMHC guaranteed NHA MBS and $96B of CMHC guaranteed CMB issued by CHT.[14]

Exhibit 3 shows a four-fold increase in guarantees in force under CMHC securitization over the 1996 to 2006 period. In 2006, total guarantees in force for the NHA MBS in 2006 were equal to the amount in 2000 ($34B), the year before the CMB was introduced indicating the growth in guarantees attributable to the CMB since 2001.

Exhibit 3
Year End Outstanding Guarantees in Force for CMHC Securitization
1996 to 2006 ($B)



---

[12] CMHC has established 'caps' for the volume of 'replacement MBS' that may be pre-pooled, and once pooled these assets can only be sold to the CHT.

[13] Private, non NHA MBS issuance includes asset-backed commercial paper (ABCP).

[14] *CMHC 2006 Annual Report: Financial Statements*, p.91. Under Section 15 of the NHA, the aggregate outstanding amount of principal guarantees may not exceed $350B in 2006 (including both the NHA MBS and the CMB guarantees).

2.5 SUMMARY

The CMB Program was an enhancement and expansion of securitization vehicles for Canadian residential mortgage financing. The CMB bullet bond has proven more attractive to investors than the MBS pass-through structure that preceded it, while the guarantee has enhanced the quality and credit rating of the securities. The CMB design effectively transferred interest rate risk back to the mortgage originators and swap counterparties (often one and the same) through the swap mechanism, ensuring that market risk exposure is not passed through to CMHC and the Government of Canada. The related credit risk for this activity is controlled with CHT swap positions involving high credit quality counterparties and related hedge investments, which are subject to high creditworthiness criteria, ratings and limits.

The CMB program has provided an alternative funding mechanism to enhance the supply of secure low-cost mortgage funding for the housing finance system in Canada. Securitization volumes have increased dramatically due to the CMB, while the market NHA MBS continues to provide another securitization option for mortgage funding.

3.0 EVALUATION SUB-STUDIES

The overall evaluation draws upon 10 separate sub-studies (sometimes referred to as "component studies") that were carried out as part of the evaluation project. These are listed below for reference purposes. The individual consulting firms were contracted by CMHC, and CMHC was responsible for overall study coordination. KPMG was responsible for the preparation of this report, which integrates the results from these sub-studies.

- **Program Rationale Analysis** (KPMG) – An analysis of the rationale for the CMB program and its validity, based on the review of internal CMHC documents, supplemented by interviews with senior CMHC and Department of Finance officials.
- **Interviews of Market Participants** (KPMG and Twist Financial) – A series of 66 interviews, of which 16 were held via teleconference and 50 were held face-to-face at the office of the interviewee. The sample included a large number of residential mortgage lenders (including all of the big five banks and a selection of smaller lenders), dealers, fixed income investors, and other stakeholders.
- **Funds Transfer Pricing Analysis** (ALM Model Metrics) – A study to assess the extent to which the CMB cost of funds advantage flows through to the cost of funding the mortgage businesses of financial institutions via funds transfer pricing or other mechanisms.
- **Financial Markets Analysis** (KPMG) – Quantitative analyses of interest rates and market shares in the mortgage market, as these relate to the rationale for the CMB program and its impacts.
- **Literature Review** (Twist Financial) – A review of academic literature and publications from government and industry sources on securitization relevant to the CMB program evaluation.
- **Guarantee Fee Study** (Andrew Kalotay Associates) – A risk analysis of the CMB guarantee fee structure.
- **Study of Capital Markets Impacts** (Twist Financial) – A study of the impacts of the CMB program on various aspects of the capital markets, based on interviews with all major participants in the Canadian primary and secondary mortgage markets, as well as with investors and dealers.
- **Review of International Practices** (International Financial Consulting) – A review of how developed countries in Europe and Asia approach mortgage financing (trends, key programs, lessons learned, etc.), based on visits to a number of European and Asian countries and interviews with market participants.
- **International Comparisons Study** (Cardiff Economic Consulting) – A comparison of the CMB program (its structure, rationale, and performance) with capital market funding models used in other countries.

- **Cost-Effectiveness Study** (KPMG) – A study of whether there are possible changes to the design or delivery of the CMB program that might enhance the cost-effectiveness of the program and the achievement of program objectives.

3.1 DATA LIMITATIONS

The evaluation study team attempted to collect information from all available relevant sources and to use a "multiple lines of evidence approach" wherever possible – i.e., to collect evidence regarding each evaluation question from as many independent sources as possible and to put forward findings only in cases in which the data from all the independent lines of evidence were consistent and supported the findings. However, there were a few evaluation questions for which there simply were not many relevant data sources available, and the study team had to rely on only one or two data sources. To the best of our knowledge this happened rarely and occurred only for relatively minor evaluation questions.

Evaluations utilize information from a range of perspectives and sources, including the informed opinions of those who participate in the program or are impacted by the program, as well as other key informants who are knowledgeable about the subject matter. In the case of CMB, the financial institutions and other financial organizations are the most knowledgeable parties concerning the operation of capital markets, housing finance, secondary mortgage markets, and the CMB as a funding source. The CMB evaluation included interviews with a wide range of financial institutions, including those involved with the CMB as well as others not directly involved. The evaluation also included interviews with representatives of federal government central agencies, CMHC, and foreign financial institutions. Furthermore, the evaluation study team included a large group of experts in the field of capital markets, financial analysis, and risk analysis. We believe that these experts were well qualified to weigh the opinion data from various sources to address the possibility of biases and in most cases opinion data were supplemented by other data sources.

4.0 FINDINGS RELATED TO THE RATIONALE FOR THE CMB PROGRAM

This section addresses the alignment of the program with CMHC and Government of Canada policies and the validity of the program rationale – both at the time the program was initiated and at the present time (the end of 2006). Additional questions examined include the rationale for the method of program financing and the expected program benefits, given its design and scale.

4.1 EVALUATION QUESTION 1.1: TO WHAT EXTENT IS THE CMB PROGRAM CONSISTENT WITH CMHC'S MANDATE AND OVERALL GOVERNMENT OF CANADA PRIORITIES?

Findings

1. The program is consistent with CMHC's mandate. It specifically addresses three elements of CMHC's mandate for housing finance.

2. The program design is consistent with Government of Canada objectives laid out in the 1996 federal legislation which placed CMHC's securitization programs on a commercial basis.

Discussion

The program was designed to directly address two elements of CMHC's mandate for housing finance[15]:

- **Ensure competition and efficiency in the mortgage market.** This was expected to be achieved by facilitating the access of smaller financial institutions (FIs) to mortgage funding. (Planning documents note that, due to the difficulties associated with NHA MBS, small lenders in the late 1990s were starting to turn to other mechanisms for funding assistance.) As part of the original program design, a mechanism was built into the program to encourage the larger FIs to facilitate small lender participation in the program, for example by providing small lenders with access to a swap facility.[16]

---

[15] The public policy objectives noted below are referenced in the minutes of several meetings of CMHC's Housing Finance Task Force. They have since been updated, but the objectives related to the supply of low-cost mortgage funds and housing affordability and choice still form part of CMHC's official mandate (see *Summary of the CMHC Corporate Plan, 2007-2011*, page 11), and the competition objective is also mentioned in the Corporate Plan as an important objective of the Corporation (see, e.g., page 35.)

[16] This was done by making the facilitation of smaller lender access to the program one of the syndicate performance criteria for evaluating membership in the syndicate for issuing CMBs.

- **Ensure an adequate supply of low-cost mortgage funds**. The program is set up to do this by creating an MBS buyer, the Canada Housing Trust (CHT), which purchases MBS pools from the FIs and issues government-guaranteed bonds that are attractive to investors.

The program was also expected to contribute to a third element of CMHC's mandate, Promote housing affordability and choice. It was expected that this would occur as a result of:

- the pass-through by the FIs of the impact of low-cost funding in the form of lower mortgage interest rates[17]; and

- increased competition – specifically, it was expected that increased competition from small lenders would contribute to lower mortgage rates.

The two official objectives of the program are:

- to contribute to lower interest rates for borrowers; and

- to enhance competitiveness in the mortgage market.[18]

With regard to overall Government of Canada priorities, federal legislation passed in 1996 placed CMHC's insurance and securitization programs on a commercial basis. The rationale for the legislation was that this would provide CMHC with the tools and flexibility necessary to achieve its public policy objectives for housing finance, three of which are highlighted above. In 1999, amendments to the National Housing Act expanded on this legislation and formally authorized CMHC to offer enhancements to its securitization program and to offer new funding vehicles such as mortgage-backed bonds.[19]

The approval of the program by the Minister of Finance[20] confirms that the original program objectives were consistent with government priorities in the context of CMHC's mandate and the issue of risk to government. The approval letter specifically noted the expected contribution of the program to increased competitiveness and to lower mortgage costs.[21]

---

17 Note, however, that no specific mechanism was set up to encourage or monitor this, other than the commitment that: "Like all CMHC programs, we will do periodic assessments of the program to ensure it has attained its public policy objectives". See *Submission to CMHC Management Committee*, January 16, 2001.

18 *Canada Mortgage Bonds Program Evaluation Framework***,** CMHC Audit and Evaluation Services, May, 2006, page 13.

19 The previous NHA restricted MBS cash flow to the investor to a modified pass-through basis – i.e., the payment stream to the investor depended on the payments to the issuer, including pre-payments.

20 Approval letter dated October 2000.

21 DOF officials at the time were particularly positive about the fact that the CMB program would provide an additional vehicle for the securitization of mortgages, which would contribute to a diversified and efficiently functioning capital market in Canada.

4.2 EVALUATION QUESTION 1.2 (A): WHAT WAS THE RATIONALE FOR THE CMB PROGRAM AT THE TIME IT WAS INTRODUCED, AND WAS THIS A VALID RATIONALE?

Findings

1. The rationale for the CMB program – i.e., the reasons the program was considered necessary – was three-fold namely to:

   (a) improve residential mortgage securitization tools in Canada, and, in particular, to overcome the limitations of the NHA MBS product;
   (b) promote competition in the mortgage market; and
   (c) ensure an adequate supply of low-cost mortgage funds to financial institutions.

2. These three needs formed a valid rationale for the CMB program at the time of its inception.

3. Canada has a significant degree of government involvement in mortgage markets through enabling legislation, regulation and active intervention. Research indicated that the United States has the highest degree of government involvement. Other comparable countries such as Australia and the UK have limited their involvement to enablement.

Discussion

The objectives of the CMB program are described in the previous section. To recap, they are:

- to contribute to increased competition in the primary residential mortgage market; and
- to contribute to increased housing affordability (as a result of lower mortgage rates).

In this section we deal with the issue of the rationale for the CMB program at the time it was introduced. (In program evaluation we distinguish between the rationale for a program and the objectives of the program.[22])

---

[22] The "rationale" for a program involves the reasons why the program is **needed**. Consider, for example, a program in an economically disadvantaged region of the country that provides grants to new or expanding businesses that are able to demonstrate that the grant will enable them to hire more workers. The rationale for this program might be as follows: (1) The region has a long history of high unemployment with few opportunities for employment growth in the absence of government assistance – i.e., there is a **need** for government assistance in order to alleviate chronic unemployment; (2) The provision of grants to businesses has been shown to be the most effective form of government assistance in this kind of situation – i.e., in order to address this problem, there is a **need** for this particular type of government assistance. The "objectives" of a program involve statements outlining what the program is intended to **accomplish**. For example, the objectives for our business assistance program might be: (a) to contribute to the establishment of new businesses and the expansion of existing businesses in the region that would not have occurred in the absence of the program; (b) to contribute to increased employment in the region. Note that the description of a

We begin by describing some important characteristics of the mortgage funding environment in Canada in the late 1990s:

- Although NHA MBS had been in place since the mid-1980s and had increasing volumes to the mid-1990s, the potential for further growth in MBS was seen as limited because of low acceptance of a pre-payable amortizing security among investors.
- Various problems had been identified with the NHA MBS product, which were mainly due to the structure of MBS as a "pass-through" security. These included: lack of liquidity, cash flow uncertainty, prepayment risk, spread volatility, accounting complexities, negative perceptions held by investment dealers, and onerous administrative requirements.
- These NHA MBS "market imperfections", as they were referred to internally within CMHC, were particularly troublesome for smaller financial institutions, which relied heavily on funds from the sales of MBS to fund their mortgages.
- The volume of bank deposits, which were the major source of mortgage funding, was shrinking, mainly because of increased competition from mutual funds.
- The market share of the large banks in mortgage lending was increasing. In 1989 the top six banks originated 51% of mortgage funding; this grew to 71% in 1997.[23]
- Four of the top six banks were seeking to merge. This would have created even greater concentration of market share.
- Based on experience in other countries, mortgage securitization was seen as having the potential to address the banks' dominance in mortgage origination, funding, servicing, and investment, as well as having other benefits for the mortgage market and mortgage borrowers.
- There was pressure from some of the large banks and trust companies, as well as from the investment community, to create a security that would effectively transform mortgages into bond-like investments[24], where the addition of a government guarantee would create a secure, relatively cheap funding source.

---

program's rationale can often include statements that are quite similar to its objectives, such as rationale statement #1 and objective (b) in our example.

[23] This was due, in large part, to the banks' acquiring several of the larger trusts and life insurance companies.

[24] I.e., non-amortizing, semi-annual fixed interest payments, with principal at maturity.

Two elements of the original rationale for the CMB program follow directly from this description of the mortgage funding environment. It was recognized that there was:

- a need to promote competition in the mortgage market (due to market domination by the big banks), and
- a need to ensure an adequate supply of low-cost mortgage funding (due to shrinking bank deposits and difficulties experienced by FIs – especially small FIs -- in selling MBS.)

A third element of the rationale, and, based on our review of the documentation, the driving force behind the formation of the CMB program, was the need to improve mortgage securitization tools in Canada in order to make it easier to securitize mortgages.[25] Securitization was viewed as having significant benefits for the mortgage market and borrowers, including the potential to contribute to both increased competition and the increased availability of low-cost mortgage funding, and the development of securitization tools in other countries had generally been facilitated by government. NHA MBS was the main securitization tool in Canada at the time, and, as noted above, it had limitations; so there was a need to develop other, more effective securitization vehicles. These three needs, therefore, formed the original rationale for the program – greater competition, increased availability of low-cost funds, and improved securitization tools. Note that the first of these rationales – increased competition – became a program objective, but the other two did not.

Note also that one of the program objectives – lower mortgage costs – was not part of the program rationale. Although it was recognized at the time of the initiation of the program that: "improving housing affordability should follow from facilitating the development of an active secondary market for mortgages,"[26] this was not used as part of the program justification in the early discussions of the CMB program. It was seen as one of the benefits of improved securitization tools: "As a more efficient mortgage securitization vehicle, MBB can bring about lower mortgage costs for Canadian borrowers."[27-28] Therefore, quite reasonably, it became a program objective.

There was good support for the validity of the program rationale described above at the time of the program's inception.

---

25 A number of the early internal CMHC meetings regarding the program concept focused on the need to address imperfections in the NHA MBS market and improve/modernize the NHA MBS product. The formal proposal for the CMB program states: "The [CMB] proposal is a corrective action to address current market imperfections in the MBS secondary market." See *Submission to CMHC Management Committee,* November 17, 1998.

26 *Memorandum to CMHC Management*, November 17, 1998.

27 In order to form part of the program rationale it would have been necessary to demonstrate that there was a need for lower mortgage rates. It is well accepted in Canada that the rationale for government programs has to be based on needs, not desirable outcomes.

28 *Memorandum to CMHC Management*, July 4, 2000; also repeated in CMHC's October 5, 2000, letter to the Minister of Finance seeking his approval of the program. "MBB" was used at the time to refer to what became "CMB".

With regard to the securitization rationale, there is no question about the low acceptance of NHA MBS in Canada at the time and its limitations as a securitization tool. Furthermore, considerable evidence was available regarding the benefits of mortgage securitization in academic and trade publications.[29] The MacKay Task Force Report[30] notes that securitization allows lenders to conserve their capital and permits "separate financial institutions to originate, fund, service, and assume risk related to a portfolio of loans or other assets. This allows for the development of specialized expertise in different areas of activity and can be effective in bringing new sources of competition to the different functions involved in credit granting, as well as bringing additional funding from non-traditional sources to certain activities."

With regard to the other two rationales:

- The primary mortgage market was indeed dominated by the big banks, with the potential for much greater market domination with the proposed mergers. Market concentration is often associated with relatively high prices and a lack of innovation in products and services.

- The concerns about the adequacy of the supply of low-cost mortgage funding were legitimate. In addition to the low acceptance of NHA MBS, bank deposits were shrinking. A 1998 report by McKinsey & Company[31] noted: "Customers are bypassing the intermediary [financial institutions] and investing directly in capital markets through mutual funds, stocks, bonds, and other such instruments. Low inflation and subsequent low deposit interest rates have fuelled the disintermediation trend."

The literature review found that the main rationale for the CMB program (the need to improve and expand securitization tools) falls into an accepted category of rationales justifying government intervention – specifically, market failure[32] and the need to improve market efficiency[33].

---

[29] These include: (a) lowering the funding costs of lenders; (b) promoting integration with capital markets; (c) eliminating regional mortgage markets (d) providing a funding source for non-deposit-taking institutions and providing a back-up funding source for deposit-taking institutions; (e) if government-backed, enabling securitizers to pass their funding advantage on to loan originators and potentially to borrowers.

[30] *Task Force Report on the Future of the Canadian Financial Services Sector*, September 15, 1998.

[31] *The Changing Landscape for Canadian Financial Services,* McKinsey & Company, September, 1998.

[32] The term "market failure" in this context refers to a situation in which market forces are not fully operational. As noted above, NHA MBS were not well received by investors, and this limited growth in the secondary mortgage market until a better structure became available.

[33] The CMB program created efficiency in the sense that the government guarantee and bond-like structure increased investor demand, and the secondary market therefore became more liquid and larger and had predictable costs for mortgage lenders.

The review of international practices found that governments are involved in the capital market funding of mortgages in all other countries reviewed, and the CMB rationale is consistent with the rationale for intervention used in many other countries. All countries support mortgage capital market development through enabling legislation and regulation, and some of the countries surveyed, including Canada, actively intervene to enhance its development. The CMB program is relatively unique in terms of its structure and the layering of government involvement.

With regard to the comparative degree of involvement in this area, the US is at one end of the spectrum[34], with numerous institutions involved in credit enhancement and capital market funding, followed by Canada, Japan, and Hong Kong, all of which have extensive involvement. Australia and the UK are at the other end of the spectrum restricting their involvement to enablement, with continental European countries falling in the middle.

The range of government intervention is illustrated in the following table.

---

34 Note, however, that recent US literature concludes that the role of the GSEs may have diminished, and consideration has been given to fully privatizing the GSEs and removing the government sponsorship.

Country	Type of Involvement	Rationale
Canada	State owned mortgage insurer and guarantor (CMHC)	Improve securitization model Promote competition Increase supply and lower the cost of mortgage funding
Australia	Enablement; state-owned mortgage insurer sold in 1997	Market allocation of resources
Denmark	Mortgage bond legislation	Improve CoMB quality, safety and use; indirectly increasing supply of funding
Finland	Mortgage bond legislation; Partial (20%) guarantees on loans securitized through Housing Fund of Finland	Improve CoMB quality, safety and use; indirectly increasing supply of funding Facilitate homeownership
France	Mortgage bond legislation Guarantee Fund for Social Home Ownership (FGAS)[35] Guarantee for CRH bonds (temporary)	Improve CoMB quality, safety and use; indirectly increasing supply of funding Expand homeownership for lower income households Facilitate development of a mortgage securities market (1985) – withdrawn after 3 years
Germany	Mortgage bond legislation State-owned development bank (KfW) provides credit default swaps	Improve CoMB quality, safety and use; indirectly increasing supply of funding Facilitate removal of risk from bank balance sheets by providing a stronger counterparty for CDS and reduce capital requirements on retained assets
Hong Kong	State owned mortgage insurer and conduit (HKMC)	Reduce bank exposure to real estate through off-balance sheet finance; standardize MBS and improve attractiveness for investors
Japan	Stated owned guarantor and issuer (GHLC)	Transition from past direct funding model; increase volume of securitization and non-govt. supply of mortgage funds
Netherlands	State owned mortgage insurer (NHG)	Expand access to homeownership and replace local government guarantees with a national program
Spain	Mortgage bond legislation Covered bonds and RMBS accepted as collateral by Central Bank (note generally the case with covered bonds)	Improve CoMB quality, safety and use; indirectly increasing supply of funding Improve liquidity of the securities
Sweden	Mortgage bond legislation State owned mortgage bank (SBAB) State-owned mortgage insurer (BKN)	Improve CoMB quality, safety and use; indirectly increasing supply of funding Transformed direct lender
UK	Enablement	Market allocation of resources
US	Public mortgage insurance (FHA, VA) Public guarantor (GNMA) Govt.-backed Liquidity facility (FHLB) Govt.-backed conduits (Fannie Mae, Freddie Mac)	Expand homeownership Facilitate securitization of FHA loans Improve liquidity of mortgage assets and lenders Expand the secondary mortgage market; improve the affordability of mortgages

[35] *Fonds de Garantie d'Aide Sociale*

4.3 EVALUATION QUESTIONS 1.2 (B) AND (C): HAVE THERE BEEN ANY CHANGES IN THE EXTERNAL ENVIRONMENT SINCE THE TIME OF THE PROGRAM'S INCEPTION THAT MAY HAVE AFFECTED THE CURRENT VALIDITY OF ITS RATIONALE? HOW VALID IS THE ORIGINAL PROGRAM RATIONALE TODAY?

Findings

1. Because of the evolution of the capital market financing environment, the rationale for the program based on the need for the government to provide securitization vehicles was less relevant at the end of 2006 than at program inception because (a) securitization has become better understood and accepted by investors and (b) FIs are better able to understand and manage securitization vehicles and, therefore, to develop them on their own.

2. The competition rationale and the related low-cost funds rationale are still valid, because of the continued need for support for smaller FIs.

Discussion

Changes in the external environment during the study period (2001 – 2006) that are specifically related to the program rationale are summarized below.

Changes in the capital markets related to the securitization rationale

The interviews of market participants found that securitization markets in Canada have grown in sophistication and size and that investor acceptance of mortgage-based securities has also increased significantly. Today, all major lenders and some smaller lenders have the expertise to fully understand – and even to manage – securitization vehicles that convert amortizing mortgages into bullet bonds.

The private sector in Canada has started to develop other mortgage securitization vehicles. These include mortgage-backed securities (for a few small lenders MBS pools are still created and sold via private placement), securitizations of lines of credit (a number of lenders are securitizing home equity lines of credit), private mortgage bonds, and asset-backed commercial paper (this market has developed extensively, although the current turmoil in this market has created uncertainties regarding this funding channel).

Mortgage covered bonds are a securitization vehicle that has been used in Europe for over two centuries, where many countries have a well-developed legal and regulatory framework to ensure the standardization of these private securities. Canada has not had covered bond legislation or a framework for covered bonds, but the interviews of market participants found that at least two of the big five banks planned to issue these bonds.[36]

---

[36] In June, 2007 the federal Office of the Superintendent of Financial Institutions announced that it has approved the issuance of covered mortgage bonds in limited quantities by federally regulated financial institutions.

The international comparison study found that the other common law countries in the comparison (Australia and the UK) have achieved relatively high levels of capital market funding with little explicit government involvement (beyond supportive regulation). Most of the other countries reviewed are not moving toward more government intervention. The situation in the United States is discussed in the literature review – US government intervention is in the form of implicit, not explicit, guarantees, and the mortgage-related secondary market is enormous.

Changes in the regulatory capital environment under the most recent Basel Capital Accord, Basel II, may result in reduced incentives to securitize mortgages for the sake of reduced regulatory capital requirements.[37]

Changes in the mortgage market structure related to the competition rationale

The primary mortgage market has become much more competitive over the past five years, due primarily to the rise of the mortgage broker channel. (This is discussed in detail in section 6.3.)

The past five years has been a period of huge growth in the mortgage market, and the small FIs have maintained, but not increased, their market share during this period. (This is discussed in detail in section 6.1.)

Changes in mortgage market financing related to the low-cost funds rationale

The big five banks have developed multiple funding sources and, in the absence of the CMB program, would have had no difficulty during the study period accessing sufficient funds from other sources, although at higher cost. (This is discussed in detail in section 5.2.)
This is less true of the smaller lender[38], which rely on aggregators[39] and institutional investors for funding – and these organizations, in turn, rely heavily on the CMB program. (This is discussed in detail in section 5.2.)

Summary

Based on the discussion above, it could be concluded that the validity of the securitization rationale is not as strong today (end of 2006) as it was originally -- with the additional knowledge and solutions now in the marketplace there is currently less need for a high degree of government involvement in the provision of securitization tools.

---

[37] Securitizing mortgages, selling them into the market, and getting them off balance sheet reduces capital requirements.

[38] The term "smaller lenders" is used in this report to include all lenders other than the big five banks, even though some of these institutions might not be considered small.

[39] Aggregators are organizations that purchase mortgages from other lenders and sell these mortgages into the CMB. They may also originate mortgages themselves.

The counter argument is that there is a continued need for improved securitization tools – including a need for an improved CMB program (including making the program more accessible to smaller lenders) – as part of the government's role to support mortgage markets in Canada.

The competition rationale is still valid – there is a need to support smaller lenders because, in the absence of smaller lender activity in the mortgage market, the market would be dominated by a few large banks, and the literature review indicates that this is problematic. The low cost funds rationale is still valid because the program provides an important source of low-cost funding to the smaller lenders (see section 5.2).

4.4 EVALUATION QUESTIONS 1.3 (A) AND (B): WHAT WAS THE RATIONALE FOR THE METHOD OF PROGRAM FINANCING THAT WAS CHOSEN WHEN THE PROGRAM WAS INTRODUCED (I.E., A SPECIAL PURPOSE BOND ISSUE)? (B) HOW VALID IS THIS RATIONALE TODAY?

Findings

1. The issuance of government guaranteed bonds was the most obvious way of dealing with the low acceptance of MBS by Canadian investors.

2. The use of a special purpose bond issue by an organization that is at arms length from the government (CHT) was due to the need to avoid the direct funding of mortgages by the government. The specific features of this structure were designed to transfer the interest rate risk back to the MBS originators/swap counterparties. The rationale for this is still valid.

3. The use of a syndication method by CHT was the best and most feasible way of issuing the bonds at the time. The rationale for this may not be as strong today, because the CMB program currently meets the criteria identified in the literature for an auction process to be efficient. However, there are many factors that are relevant to the choice of the method of bond issuance that would need to be assessed if a change to an auction method were contemplated.

Discussion

The idea of issuing bonds arose early on in the discussions of the Housing Finance Task Force as an obvious way to address one of the main perceived problems associated with MBS, the cash flow uncertainty. It was recognized that this problem could be dealt with by making the product more bond-like. At the same time, there was strong lobbying from the lending community and the investment community for CMHC to come up with a mechanism to transform mortgages into bond-like investments. The original idea of CMHC's Housing Finance Task Force was that CMHC itself would issue bonds and use the proceeds to buy MBS.

The Canada Housing Trust was subsequently created to do this because the Department of Finance did not want CMHC involved in buying and selling mortgages. There were also various legal and accounting reasons for creating an arms-length trust. However, in 2005, CMHC started to consolidate the financial statements of CHT into its own as a result of new accounting requirements.

The inclusion of the swap arrangements in the program design was necessary in order to manage the cash flow of the Trust and, especially, to ensure that prepayment and interest rate risk do not reside in the Trust.

There were several reasons it was decided to issue the bonds through individual sales by investment dealers, rather than by an auction method or by having CMHC issue the bonds itself:

- It is generally believed that an auction method can only work well in the case of a known and accepted product. Auctions also require a certain amount of critical mass, and the initial bond issuance volumes were fairly low. (CMHC always planned to consider an auction in the future.)

- In addition, syndicated bond offerings provide greater control over pricing, incentives to dealers to market the product, and the ability to incent dealers with international placement capabilities to participate.

- It was more convenient for CMHC to work with dealers, with whom they were already used to working, for issuing CMHC bonds, than to issue the bonds themselves. It was also felt that, because of this pre-existing relationship and the potential size of the CMB bond issuance volumes in the future, CMHC would be able to negotiate relatively low commissions.

- Finally, this method provides an incentive for FIs to participate in and support the CMB process – and, in particular, an incentive for large FIs to facilitate the participation of smaller lenders.

The literature review found that, while the criteria for successful auctions were not satisfied when the program was initiated, the CMB program currently meets the criteria for an auction process to be efficient. These mainly involve the following:

- Information gathering about the issuer and the specifics of the security are not needed; and

- Auctions for the same type of securities are held at regular intervals, so that the pool of participants in the auction is stable.

On the other hand, the interviews of market participants indicated that there are risks and uncertainties associated with an auction process that may affect any price efficiency gained. Factors related to the method of bond issuance are discussed in more detail in section 8.4.

4.5 EVALUATION QUESTIONS 1.4/1.5/1.6: GIVEN THE DESIGN AND SCALE OF THE CMB PROGRAM, IS IT LOGICALLY REASONABLE TO BELIEVE THAT THE PROGRAM COULD HAVE SIGNIFICANT EFFECTS ON:

(a) enabling mortgage lenders to obtain funds at lower costs than they would pay for borrowing in the absence of the program?

(b) the costs of mortgages for Canadian borrowers?

(c) facilitating the increased participation of smaller lenders in the mortgage market?

Findings

The answers to the three questions posed above are:

(a) It was clear at the outset that the program would result in a significant cost of funds advantage for mortgage lenders;

(b) It was also clear that the program's impact on mortgage rates for the average borrower would be on the order of a few basis points.

(c) It was reasonable to expect that the increased availability of low-cost funds to smaller lenders could increase their participation in the mortgage market.

Discussion

(a) Straightforward calculations presented in the planning documents for the CMB program showed that the cost of the funds lenders could obtain through participation in the program would be significantly less than the cost of funds they could obtain from alternative funding sources. For example, a submission to CMHC's Management Committee dated January 9, 2001 compares funds that could be obtained by FIs through the CMB program with bank debt, swapped bankers' acceptance, asset backed securities, and NHA MBS and concludes that "a benefit of 12-24 basis points could be achieved with CMB."[40] When applied to the very large funding requirements of the FIs, one can see that the resulting reduction in the overall cost of funding for mortgages over the study period would be hundreds of millions of dollars. (An 18 basis point savings applied to $100B of CMBs outstanding amounts to $180M per year.)

(b) Even if one were to make optimistic assumptions regarding the pass-through of the CMB cost of funds advantage to mortgage borrowers, it would not be possible for the CMB program to lower mortgage rates for an average borrower more than a few basis points. In particular, if one were to assume that:

[40] This is consistent with the cost of funds advantage estimated in this study – see section 5.1.

(1) the CMB cost of funds advantage were fully reflected by FIs in the way they price the cost of funds to their mortgage departments,

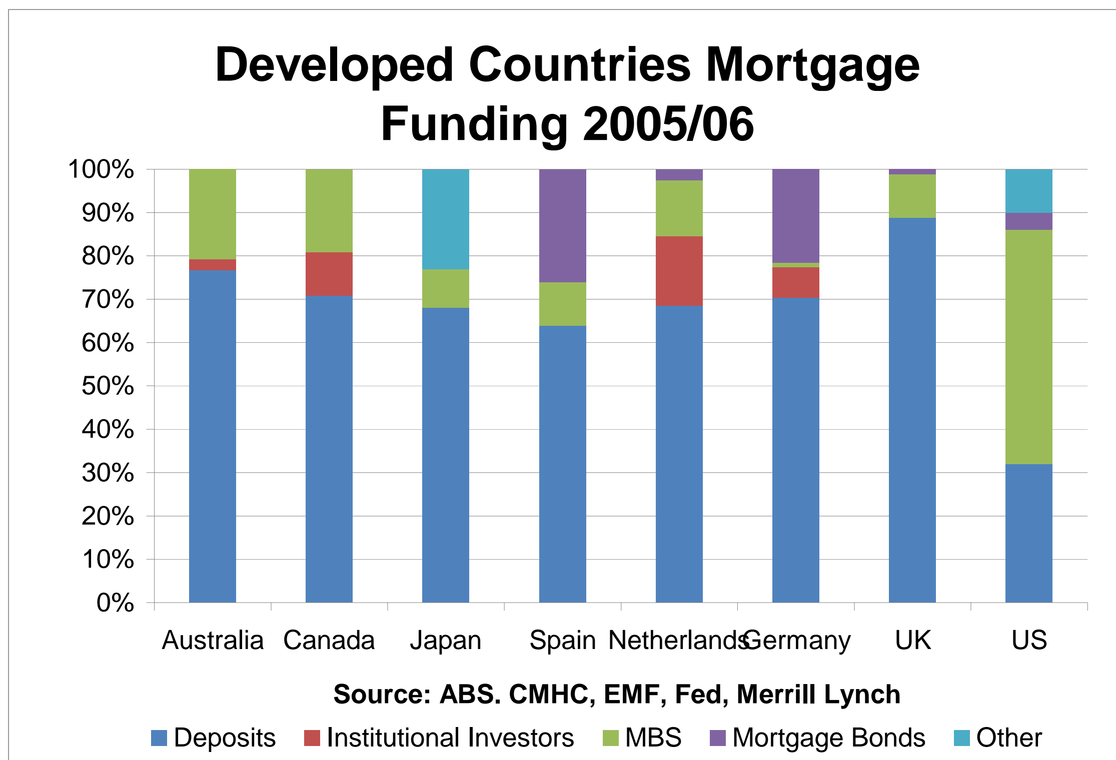
(2) this were done in accordance with the maximum percentage of mortgage funding that could theoretically be made up by CMB funds, and

(3) this funds pricing advantage were fully passed on to borrowers in the form of lower mortgage rates;

then, the cost savings for an average borrower would not be large.

To illustrate this point, if one were to calculate the cost savings to borrowers by starting with the mid-point of the early CMHC estimated cost of funds advantage (i.e., 18 basis points relative to the next cheapest source of wholesale funding) and then using the above assumptions, the maximum savings to an average borrower would be 3.6 basis points off their mortgage interest rate. This is because of assumption (2) and the fact that CMB funding to FIs is less than 20% of their total mortgage funding (18 times 0.2 = 3.6). For a $150,000 mortgage with an interest rate of 6.7% paid monthly over a 25 year amortization period, a reduction of 3.6 basis points in the interest rate would save the borrower about $39 per year, or $975 over the life of the mortgage. (Note, however, that the total savings to Canadian borrowers as a whole could be significant – see section 5.3)

The majority of mortgage funding in Canada is from deposits (and, except for the US, this is also true in other developed countries, as illustrated in the following exhibit.)



(c) It was expected that the program would result in the increased availability of low-cost funds to smaller lenders, and the program was designed, to some extent, to ensure that this would happen.[41] Since the limited availability of low-cost funds was known to be a constraint to the increased participation of smaller lenders in the mortgage market, it was reasonable, therefore, to expect that the program would contribute to their increased participation.

[41] As noted in section 4.1, this was done by making the facilitation of smaller lender access to the program one of the syndicate performance criteria for evaluating membership in the syndicate for issuing CMBs. However, there was never an explicit program guideline regarding the extent of small lender participation in the program.

5.0 FINDINGS RELATED TO THE IMPACT OF THE CMB PROGRAM ON MORTGAGE FUNDING AND BORROWING COSTS

This section examines the impact of the program on increasing the availability of low-cost funds to mortgage lenders and on lowering the costs of mortgages for borrowers. In assessing the contribution of the CMB to lower mortgage costs for Canadian borrowers, the evaluation had to determine, first, the cost of funds advantage of CMB to FIs versus alternative sources of funds and, secondly, the extent to which the CMB cost of funds advantage is passed through to the mortgage lending departments of the FIs. These questions involve considering the availability of alternative sources of funding that existed during the 2001-2006 period, as well as other funding sources that might have been available in the absence of the program.

There are three main sources of evidence: the Funds Transfer Pricing (FTP) study, the interviews with lending institutions, and the quantitative analysis of mortgage interest rates.

5.1 EVALUATION QUESTION 2.1: HOW MUCH LOWER HAS THE COST OF FUNDS OBTAINED BY MORTGAGE LENDERS THROUGH THE CMB PROGRAM BEEN COMPARED WITH WHAT THEIR COST OF FUNDS WOULD HAVE BEEN IN THE ABSENCE OF THE PROGRAM?

Findings

1. The cost of funds obtained by the big five banks through the CMB program during the study period has averaged about 18 basis points less than the cost of their cheapest alternative source of long-term wholesale funds.

2. The question of the cost of funds advantage of the CMB program compared with the cost of the funds the big five banks might have accessed (hypothetically) if the program had not existed, is difficult to quantify.

3. The smaller lenders have probably experienced a smaller cost of funds advantage than the big five banks.

Discussion

The Funds Transfer Pricing (FTP) study compared the cost of funds obtained by the big five banks through the CMB program with the cost of their cheapest alternative source of long-term wholesale funds, bank deposit notes (BDNs). The study found that, while the gross costs of CMB funds have been about 23 basis points less than the gross costs of BDNs during the study period, the expenses associated with CMB participation have been about 5 basis points

higher than BDN expenses.[42] The study concludes, therefore, that the net cost of funds obtained through the CMB program has been about 18 basis points less than the cost of BDN funding.

Note that this cost advantage is consistent with the cost advantage predicted by CMHC in its internal working papers at the inception of the program (see section 4.5).

The FTP study notes the following in relation to this estimate:

- Given the variability in funding spreads, one must not over-estimate the precision of the funding cost advantage. In the interviews the banks often described the advantage to be in the range of 10-20 basis points. In fact, several of the banks indicated that they use a 15 basis point cost advantage in their internal analysis.

- This cost advantage has been calculated as the difference between the cost of CMB funds and the cost of the next cheapest source of funds to the banks (BDNs) during the study period. There are arguments presented in the FTP study that suggest this estimated cost advantage is smaller than the difference between the cost of CMB funds and the cost of the funds the banks may have accessed instead of CMB funds in the absence of the CMB program:

  - In the absence of CMB, banks would have sought to diversify their funding and may have used markets that are more expensive than BDNs.
  - If banks had been required to fund with BDNs to a much larger degree, the cost of BDNs may have increased.

However, this question – the cost of CMB funds compared with the cost of funds that would have been accessed in the absence of the program – was not formally addressed in the FTP study.

The CMB cost advantage discussed above is based on the analysis of information regarding the big five banks. It is much more difficult to develop a similar analysis for the smaller lenders due to the wide range in their business models. However, based on study team discussions with this smaller lender group and the information they shared, the FTP study concludes that their cost advantage was similar to that of the big five banks. While their cost of non-CMB wholesale funding tends to higher than that of the big five banks (which, on its own would lead to the conclusion that the CMB cost of funds advantage is higher for them), the all-in cost of their CMB-funding is also higher due to the swap and the operational complexity of administering the CMB program.

---

[42] The only material BDN costs are commissions in the 4 – 6 basis points per year range. CMB expenses include timely payment guarantee (5 basis points per year), underwriting commissions (4 basis points per year), as well as a number of smaller internal and external costs.

The other main source of information regarding this evaluation question is the interviews of financial market participants. In that component of the evaluation, interviewees were first asked about the CMB cost of funds advantage compared with the next cheapest source of funds, and their responses were consistent with (although slightly lower than) the estimates arrived at in the FTP study. The Treasury Departments interviewed generally believed that, as at the end of 2006, the CMB delivered about 15 basis points of benefit compared to their cheapest external funding alternative (usually BDNs). While the amount of savings has varied over time during the study period as credit spreads and CMB spreads have moved, a range of 10 to 18 basis points was consistently cited.

As noted above another question that can be posed is the question of the CMB cost of funds advantage compared with the cost of the funds FIs might have accessed instead of CMB funds in the absence of the program. Although the FTP study considered this question, this question was posed more formally in the interview component of the evaluation.

In the interviews the representatives of the big five banks indicated that, in the absence of the CMB program, private securitization vehicles would have been issued, probably by the big five banks as single issuers and possibly as multi-seller vehicles for smaller players. The interview evidence indicated that the cost of funds advantage of CMB funds compared to these private securitization vehicles would have been five to 10 basis points. (Note that this study is reporting what the representatives of financial institutions said. It does not seem highly plausible that these private securitization vehicles would have sold at prices this close to CMBs.) However, this does not mean that the cost of CMB funds would have been just five to 10 basis points less than the cost of funds that would have been accessed instead of CMB funds in the absence of the program, because the liquidity and size of the market for private mortgage bonds would have likely been less than for CMBs, so the amount of funding raised through this vehicle would have been less than the amount raised through the CMB program. Consequently, the CMB cost of funds advantage would have been higher than five to 10 basis points.

> Example: If, in the absence of the CMB program, the big five banks would have replaced half the funding raised through the CMB program with private mortgage bonds which would have been 8 basis points more expensive than CMB funding and half the funding with BDNs which would have been 18 basis points more expensive than CMB funding, then the cost of funds advantage of the CMB funding – compared to the cost of funds that would have been accessed instead of CMB funds in the absence of the program – would have been 13 (= (8+18)/2) basis points.

As in the FTP study, the interview component of the evaluation concluded that it is not possible to reach definitive conclusions regarding the cost of funds advantage for the smaller lenders, other than the conclusion that there has been some cost of funds advantage for most small lenders. Because of the higher costs for smaller lenders of accessing the CMB program, their cost of funds advantage has probably been less than for the big five banks – possibly on the order of 10 basis points. (There would be no cost of funds advantage, of course, for smaller lenders that have not participated in the CMB program, such as those who use brokered GICs as their main or only funding source.)

5.2 EVALUATION QUESTIONS 2.2 AND 2.3: WHAT HAS BEEN THE IMPACT OF THE CMB PROGRAM ON THE AVAILABILITY OF FUNDS TO MORTGAGE LENDERS? WHAT OTHER BENEFITS DO LENDERS OBTAIN FROM PARTICIPATION IN THE CMB PROGRAM?

Findings

1. The program has had a negligible impact on the availability of funds to the big five banks, although, as noted in section 5.1, the funds they would have accessed in the absence of the CMB program would have been more expensive.

2. The CMB has had a significant impact on the availability of funds to the smaller lenders that rely on aggregators and institutional investors to purchase mortgages, because the aggregators and institutions could not have easily replaced CMB as a source of funding.

3. The main other benefit lenders obtain from participation in the program is that it enables them to relatively easily and regularly monetize a portion of their mortgage portfolio.

Discussion

As background to this discussion, it should be noted that residential mortgage securitization, particularly through the CMB program, has played an increasingly important role in financing the mortgage portfolios of the banks over the past several years. Analysis of the balance sheets of the major banks for the three years 2004 through 2006 shows that the share of the mortgage portfolio securitized by the banks and no longer held on their own balance sheets has grown from about 9% in 2004 to close to 14% in 2006. (The great majority of banks' securitized mortgages not held on their own balance sheets flow through the CMB program.)

Nevertheless, during the interview process all the major banks indicated that, if the CMB program had not existed, they would have had no difficulty accessing sufficient funds for their mortgage business, albeit at somewhat higher rates. They cited their variety of domestic and foreign funding choices (which includes bank deposit notes, subordinated debt, and various types of securitizations) and strong investor appetite for high quality assets with a credit spread component. The high demand for European covered mortgage bonds during the study period, which is discussed in the international comparison study, supports this contention.[43]

During the interviews most of the smaller lenders and monoline lenders also stated that they would have been able to raise the funds they required in the absence of the CMB program. They cited other securitization vehicles (e.g., asset-backed commercial paper and private securitization vehicles that could have evolved) as well as whole loan sales to institutional investors. However, based on the totality of interview evidence obtained, the study team

---

[43] Readers are reminded that all statements in this report are as at the end of 2006 and do not take into account the difficulties being experienced in the current market.

concluded that some of the smaller lenders did not appreciate the importance of the CMB program as a source of funds for two reasons:

- The CMB program was the instigator for the development of the aggregator channel, and in the absence of the program, the aggregator channel would not have been likely to develop. During the study period some smaller lenders and monoline lenders grew more dependent on selling mortgages to aggregators for obtaining mortgage funding. If the aggregators had not existed, the smaller lenders would have been mainly confined to whole loan sales to a limited number of institutional investors (many of whom are their competitors in the mortgage lending market).

- The aggregators and the institutional investors are very heavily involved in selling mortgages into the CMB program.[44] Without the CMB, they would have had to replace CMB as a source of funding, which likely would have significantly limited the availability of funding for small FIs through these channels. Other potential sources of funding for small FIs, such as other securitizations, would have likely become crowded with more participants, pushing rates higher and diminishing investor appetite for smaller lenders' assets.

With regard to other program benefits (evaluation question 2.3), the availability of the CMB program means that, in any quarter, and potentially subject to limits, lenders are able to monetize a portion of their residential mortgage portfolio. All lenders, including the monoline lenders, indicated in the interviews that they consider this to be a benefit, since this enables them to originate new mortgages without injecting additional capital into their business.

5.3 EVALUATION QUESTION 2.4: WHAT HAS BEEN THE IMPACT OF THE CMB PROGRAM ON MORTGAGE COSTS FOR CANADIAN BORROWERS?

Findings

1. Some of the big five banks explicitly pass on the CMB cost of funds advantage to their mortgage departments by way of their internal pricing of funds that are used for mortgages; others also factor the cost of funds advantage into mortgage pricing considerations.

2. Given this finding and the fact that the mortgage market has been highly competitive during the study period, it is reasonable to conclude that a large percentage of the cost of funds advantage has been likely passed on to mortgage borrowers.

---

44 Section 6.2 contains some data showing the increased share of program participation accounted for by the aggregators over the past two years.

3. The interviews of FIs indicated that the mortgage rate reduction impact was not constant across all borrowers. Typically, it was suggested that the main beneficiaries of the rate reduction impact were preferred branch customers, generally in urban areas, obtaining new (as opposed to renewal) five-year mortgages who negotiated with their lender or shopped carefully in the broker market. The rate reduction for this group of borrowers may have been in the range of five to 10 basis points, which is several basis points higher than the rate reduction experienced by the average borrower.

4. A significant impact on mortgage rates during the study period is not evident from quantitative analyses of mortgage rate data, but this was expected given the inevitable small impact of the program on mortgage rates for the average borrower (see section 4.5).

5. An upper bound estimate of total savings to mortgage borrowers over the study period due to the CMB program is $426 million. At the December 2006 level of CMB outstanding ($96 billion), the annualized savings to borrowers could be up to $174 million.

Discussion

The literature review summarizes the economic theory regarding the factors affecting the extent to which a cost of funds advantage for financial institutions is passed on to mortgage borrowers. It concludes that the extent of the pass-through depends mainly on two factors:

1. the extent of competition in the mortgage market, and

2. the extent to which the cost of funds advantage is passed on to the mortgage originators.

There is widespread agreement, which is documented in the report on the interviews, that the Canadian primary mortgage market has been highly competitive during the study period. (This is discussed further in section 6.3.) With regard to point (2), in the case of the big five Canadian banks, the mortgage originators are their mortgage departments, so the question of the extent of pass-through to borrowers depends mainly on the extent to which the banks pass the CMB cost of funds advantage on to their mortgage departments.

This question was addressed in detail in the FTP study. That study found that:

- Some of the big five banks explicitly pass on the cost of funds advantage from their treasury departments to their mortgage departments – i.e., the internal cost of funds to the mortgage departments reflects the CMB cost of funds advantage.

- Other banks that do not have this cost advantage hard-wired into their financial processes, the CMB cost of funds advantage still factors into their mortgage pricing strategy.

Accordingly, one would expect a high degree of pass-through of the CMB cost of funds advantage to borrowers, at least for the big five banks. To recap the argument:

- We conclude from the FTP study that, during the study period for the big five banks, most of the CMB cost of funds advantage was passed on to their mortgage departments.

- We conclude from the literature review that, because of the high degree of competition in the mortgage market during the study period, it is likely that much of the cost of funds advantage that was passed on to the mortgage departments was subsequently passed on by them to mortgage borrowers.

Of course, we know from the simple analysis presented in section 4.5 that, even if all of the cost of funds advantage is passed through[45], the savings to the average borrower could not possibly be more than a few basis points.[46]

We also attempted to see if we could identify the impact of the CMB program on mortgage rates through the analysis of historical mortgage rate data (recognizing that it might be difficult to see an impact of a few basis points). Exhibits 6 and 7 present the data on rates for fixed 5-year term mortgages expressed in terms of spreads over four different measures of interest rates generally – five-year Government of Canada bonds, five-year GIC rates, the cost to one of the large banks of raising five-year term subordinated debt, and five-year swap rates. (The use of spreads removes factors influencing interest rates in general.) The vertical line represents the time of introduction of the CMB program. The two exhibits are for the two different sets of data on mortgage rates that were used in this study[47]. It should be noted that the mortgage rates for NHA-insured mortgages in these data are the *qualifying rates* used for mortgage insurance purposes which tend to be higher than the actual rates paid by mortgage borrowers. Therefore, these data would tend to under-estimate the impact of the CMB on actual mortgage rates.

---

45 In proportion to the percentage of mortgage funding made up of CMB funds.

46 On the basis of experience in the US one should not expect full pass-through. The literature review found that the US GSEs have experienced a cost of funds advantage of 35-40 basis points, but the pass-through of benefits to borrowers has only been approximately seven basis points. Note, however, that there are lots of differences between Canada and the US that would not enable one to draw the same sort of conclusion regarding the likely percentage of pass-through in Canada – imperfect competition among the GSE's. number of intermediaries between the GSEs, and so on.

47 CMHC insurance data and MBS data.

Exhibit 6

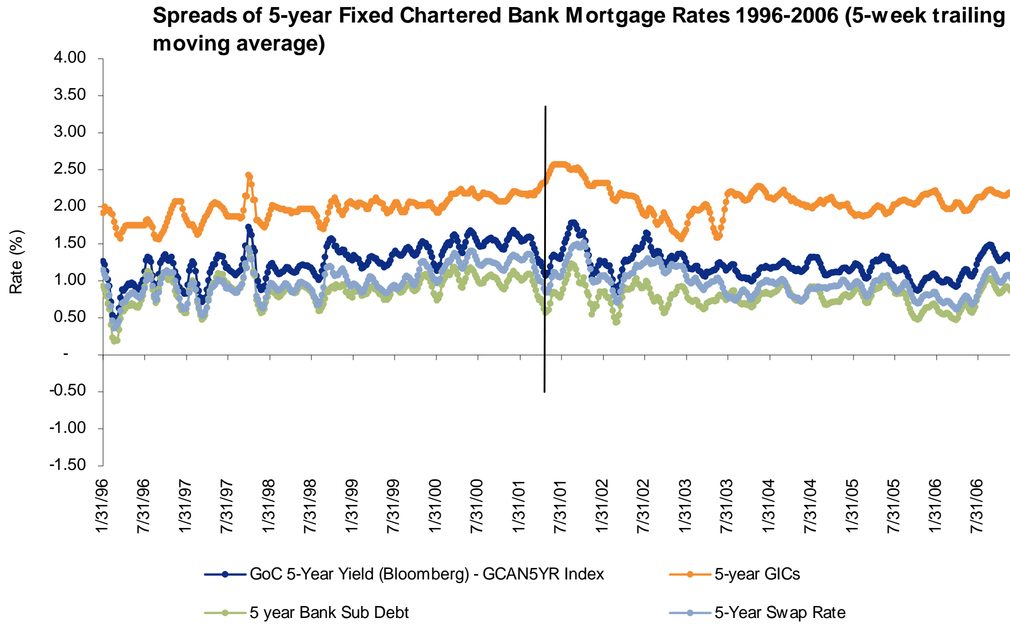
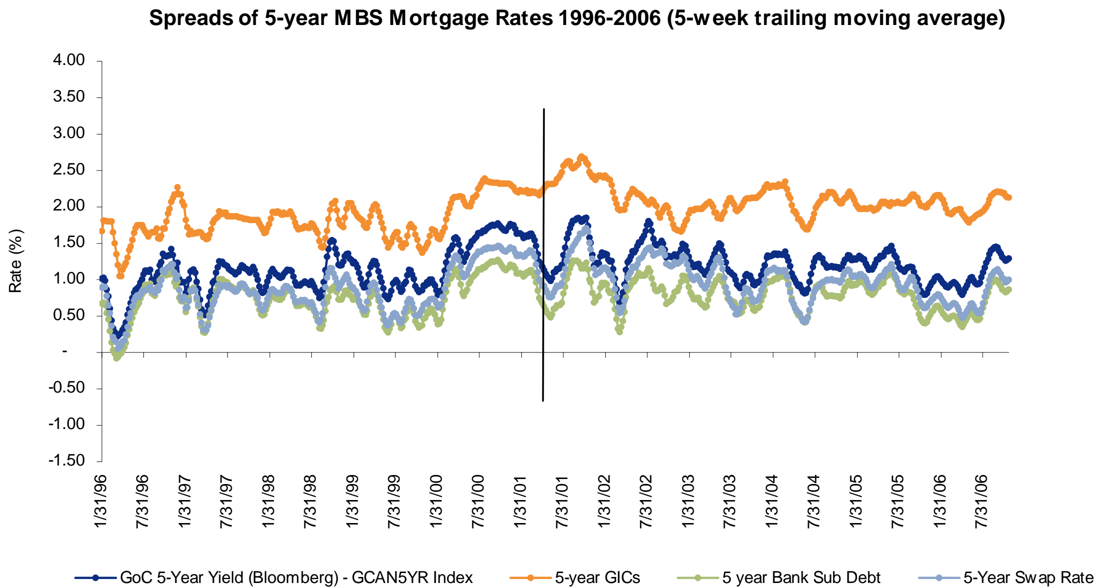


Exhibit 7



There was an evident peak in mortgage rate spreads shortly after the introduction of the program. However, when comparing longer time periods, visual inspection does not indicate that rate spreads were significantly different following program introduction than they were before program introduction.

Regression analyses on the data underlying these two figures were undertaken in order to identify effects that may not be apparent visually. These tests were designed to compare the pre- and post- program periods. As can be seen below, the analyses provided weak and mixed results – some formulations show small but statistically significant reductions in mortgage rate spreads (the largest estimates are on the order of eight basis points) after program introduction, while others show no effect, or effects in the wrong direction (i.e., increasing spreads after program introduction).

Exhibit 8 summarizes the regressions results.

Exhibit 8
5-year Fixed Rate Mortgage Spreads Against Various Spread Variables

	Spread Variables			
Mortgage Rate Source	**GOC**	**GIC**	**Bank Sub Debt**	**5 yr. Swap Rate**
MBS	**W**	**W**	**W**	**W**
Insurance	**0.04***	**W**	**0.02***	**NS**
Insurance Lagged	**NS**	**W**	**0.08***	**NS**

The rows correspond to the source of the data (MBS, Insurance, and Insurance data lagged 13 weeks.) The columns reflect the various spread variables (5-year Government of Canada Bonds, 5-year GICs, 5-year bank subordinated debt, and 5-yr swap rate). A "W" signifies that the results were statistically significant in the wrong direction, i.e., showed an increase in spreads post-program initiation. "NS" means that the estimated spread difference was of the expected sign but is not statistically significant. The three asterisked results are statistically significant, and range from 2 to 8 basis points.

Because until very recently there has been a general narrowing of spreads over Government of Canada rates for all asset types for several years, we also tested an alternative formulation to see whether the data are better described by first fitting them into a downward trend line, and then looking for further evidence of the impact of the CMB program. There is no evidence that any of these data are fitted better by a downward trend line, which strengthens the results presented in Exhibit 8.

The analyses presented above are for fixed-rate mortgages. Similar quantitative analyses were carried out for variable rate mortgages (VRMs) and adjustable rate mortgages (ARMs). The results were as follows:

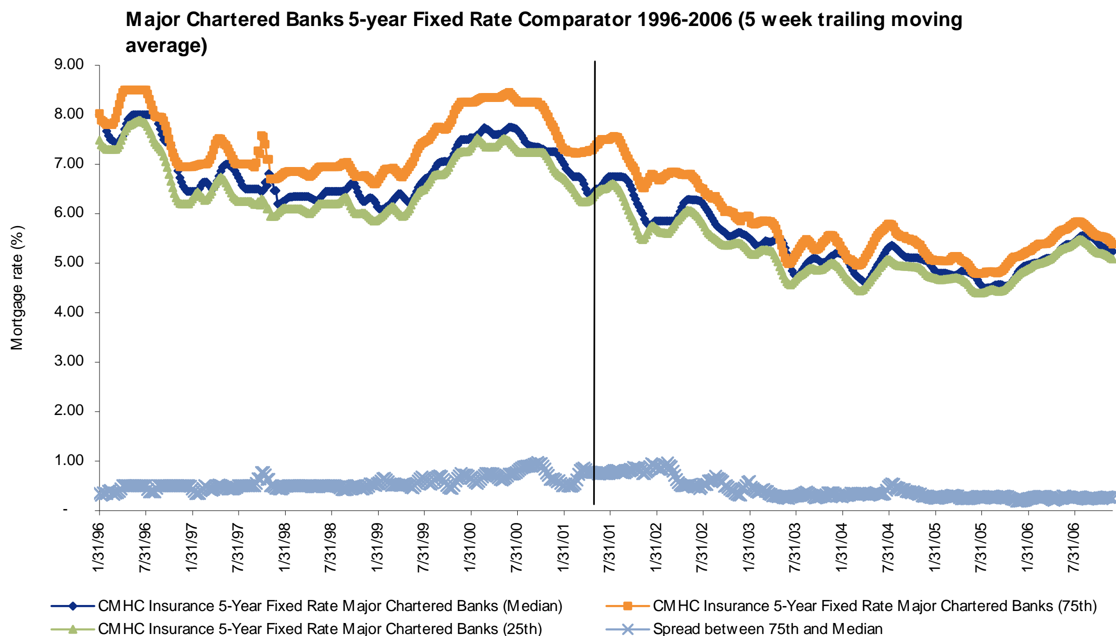
- There is no evidence that VRM spreads narrowed after the incorporation of VRMs into the CMB program in December of 2004.

- There is some evidence that ARM spreads narrowed after the incorporation of ARMs into the CMB program in June of 2005. However, the value of CMB pools based on ARMs is relatively small (about one-half billion dollars), which makes it unlikely that this was due to the flow-through of a pure funding advantage. It is more likely that the introduction of ARMs into CMB pools may have focused lenders' attention on ARMs and enhanced the competitiveness of that marketplace.

On balance, the quantitative analyses of mortgage rate data provide at best weak evidence that the CMB program has had an impact on reducing mortgage rate spreads. This may be either because there was no effect, or it may be because – when considered in the context of the quality of the data, the presence of other factors affecting spreads, and the sophistication of the analytical tools employed – the effect was not sufficiently large to be identified.

The data analyses did provide some evidence that the program may have had an impact on reducing mortgage rates paid by borrowers who tend to have higher-rate mortgages. (All the quantitative analyses above examine, in essence, the potential program effect on an <u>average</u> borrower.) Exhibit 9 provides the results of analyses of the CMHC insurance data regarding the spread of rates for five-year fixed rate mortgages, comparing the median rates with the 75th percentile rates.

Exhibit 9



There is evidence of a tightening of the variability of mortgage interest rates since the introduction of the program (from 56 to 41 basis points). This suggests that the introduction of the program coincides with a reduced dispersion of mortgage interest rates. In other words, the CMB program may not have had a major effect on the rates paid by a typical borrower, but it may have had more of an impact on reducing rates paid by borrowers who tend to have higher rate mortgages. Note, however, that this effect coincides with the increased presence of mortgage brokers in the market, which is also a plausible explanation for the observed patterns.[48] Also, the same analysis of the MBS data did not reveal this effect.

Our final source of data regarding the impact of the CMB program on mortgage rates was the interviews of market participants, although this was treated as a secondary data source because of the possibility of respondent biases. In these interviews all the big five banks stated that the cost of funds advantage due to the CMB program has influenced mortgage rates. Both the treasury departments and the mortgage departments agreed on this point. The majority of the banks suggested that most or all of the cost of funds advantage is passed through to five-year mortgage rates offered to preferred branch customers (generally in urban areas) and through the mortgage broker and mortgage specialist channels, particularly for new mortgage financing (as opposed to renewals). Most indicated an impact in the range of five to 10 basis points. The fact that this segment of the market (new five-year mortgages) would be the primary beneficiaries of the cost of funds advantage is consistent with other interview evidence which indicates that this segment is the most competitive part of the market, with competition focused on price rather than other features or customer service[49]. The pass-through of the funding advantage for other maturities or other types of mortgages was more difficult for interviewees to identify, and this has likely been less than for new five-year mortgages. This is due to certain specific features of the renewal market and less price competition in the other market segments[50].

Smaller lenders who access the CMB program also stated that they pass on most or all of the CMB cost of funds advantage.

Although it is clear from the above discussion that the <u>average</u> savings to individual borrowers due to the CMB program has not been large, it should be noted that the CMB is one factor that enables stronger price competition – i.e., the CMB cost advantage enables the banks to set lower mortgage rates than they otherwise could and still have their mortgage departments remain profitable. The actual savings to borrowers is dependent on the competitive process. Price leadership plays a major role (e.g., which bank is the price leader at a given point in time and their particular funds transfer pricing process), as does the relative competitiveness of different mortgage sub-markets.[51]

---

48 As discussed in section 6.4, the CMB program likely facilitated the growth of the broker channel.

49 The liquidity of this class of mortgages, due in large part to the CMB program, is one of the main factors that enhances their appeal to lenders.

50 For example, most interviewees suggested that profitability on renewals and their transacted rates are higher than for comparable new mortgages since renewal customers may shop less carefully.

51 And because of this it is unlikely that cost savings to borrowers are passed on uniformly.

The FTP study calculates the possible savings to borrowers as a function of the size of the CMB program relative to the size of the mortgage market. It is clear from those calculations that the estimates of savings are quite sensitive to the size of the program. For example, if the proportion of wholesale mortgage funding accounted for by CMB were to increase from 15% to 25%, then the average cost savings to borrowers (based on the assumption of a full pass-through of the cost of funds advantage for the portion of mortgage funding derived from CMB) would increase from 2.7 to 4.5 basis points.

The savings to borrowers are also sensitive to the cost of funds advantage of CMB compared with alternative sources of funding. Any increase in the relative CMB cost advantage (such as through higher costs for other funding sources[52]) would lead to a corresponding increase in the savings to borrowers.

At most 15% of the total mortgage market during the study period has been funded by the CMB program. If one assumes that the CMB cost of funds advantage of approximately 18 basis points on the portion of mortgage funding derived from CMB has been passed on to borrowers, the average borrower has saved at most three basis points on their mortgage rate. This translates into an upper bound estimate of total savings to Canadian borrowers over the study period of approximately $426 million. At the December 2006 level of CMBs outstanding, an upper bound estimate of the annualized cost savings would be about $174 million.

5.4 EVALUATION QUESTION 2.5: WHAT HAS BEEN THE IMPACT OF THE CMB PROGRAM ON NEW MORTGAGE PRODUCT DEVELOPMENT?

Findings

The CMB program has had very little impact on new mortgage product development.

Discussion

The only data relevant to this evaluation question came from the interviews of market participants. Almost every lender interviewed wishes to increase its volume and market share in residential mortgages. Mortgage lending is seen as a low risk business with economies of scale in origination, servicing, and risk management; and product differentiation is one way to compete. Accordingly, the variety of mortgage products has grown significantly.

However, interviewees in the big five banks and many smaller lenders noted that the CMB program has had no impact on their decisions to offer new products. Instead, they focus on customer demand.

---

[52] As might be the case, for example, in today's market.

The CMB program may have had a small impact on product development for monoline lenders and certain small niche FIs, but the direction of the impact is not clear. On the one hand, it may have served as a constraint to new product development in that, before developing a new product, these lenders need to ensure that the product is eligible for the CMB program. By necessity, they make product decisions and financing decisions simultaneously, since they lack sufficient capital to hold large volumes of mortgages on balance sheet. On the other hand, the CMB program may have supported new product development by these lenders, since it provides a stable funding base that has enabled them to offer a wider variety of products than would be possible otherwise.[53]

---

53 It should also be noted that the program has been modified on several occasions to accommodate new mortgage products (e.g., VRMs, ARMs).

6.0 FINDINGS RELATED TO THE IMPACT OF THE CMB PROGRAM ON COMPETITIVENESS

This section examines the role of the CMB program in supporting the different segments of the mortgage lending sector, particularly smaller lenders, and thereby contributing to more competitive market conditions.

6.1 OVERALL CHANGES IN THE COMPETITIVE ENVIRONMENT

As discussed in section 1.1, market conditions over the study period were characterized by low interest rates, high growth in residential mortgage lending, and highly competitive primary mortgage markets. Virtually all the lenders interviewed in the evaluation study indicated that the residential primary mortgage market is much more competitive now than it was in 2001. As background to the analysis of the evaluation questions in this section, we briefly discuss the main factors that have contributed to this. For additional information regarding the structure of the Canadian residential mortgage market see Annex B.

- **Growth of the mortgage broker channel.** The mortgage broker channel has increased substantially since 2001, and it now represents at least 25% of the market. This channel has relatively transparent pricing with limited haggling. Smaller lenders originate mortgages almost exclusively through the broker channel, and the big five banks originate a substantial portion of their mortgages through the broker channel as well.

- **Foreign and small lenders.** A foreign bank that entered the Canadian market in 1997 was among the first to offer no-haggle low-rate mortgages through the internet. Their price transparency has been adopted by many competitors, and this has forced other lenders to match, or at least approach, these rates. Other foreign lenders have also entered this market, with similar no-haggle rates.

- **Better consumer product information and market knowledge.** The internet has allowed borrowers to research market rates and products prior to meeting with a traditional FI at its branch site or with another lender or broker.[54]

- **Improvements in technology.** Knowledge-sharing software enables lenders to instantaneously communicate with mortgage brokers and mortgage specialists, and has allowed for automated underwriting. Commercially available software programs have allowed new lenders to cost-effectively originate and service mortgages and to develop new products.

[54] CMHC's research found that in 2006 70% of consumers did at least one of three things: check competitive interest rates, get information from other lenders, or shop actively for options.

- **Rise of mortgage specialists.** Many FIs have been developing their mortgage specialist channel to expand the reach of their branch network, as well as to respond to the mortgage broker channel in a way that reduces the head-to-head competition in favour of a relationship-based approach to the client. These mortgage specialists tend to match the pricing of mortgage brokers, but they have a higher likelihood of cross-selling and winning the mortgage renewal.

6.2 EVALUATION QUESTION 3.1: (A) WHAT HAS BEEN THE LEVEL OF USE OF CMB FUNDING DURING THE STUDY PERIOD BY TYPE OF LENDER? (B) WHAT HAS BEEN THE LEVEL OF PARTICIPATION IN THE RESIDENTIAL MORTGAGE MARKET DURING THE STUDY PERIOD BY TYPE OF LENDER?

Findings

1. The big five banks are by far the major users of CMB funding. However, the smaller lenders have been able to access CMB funding (mainly through the aggregators) to a much greater extent in the last two years than in the early years of the program.

2. Mortgage approvals by smaller lenders increased from approximately $11 billion per year in the pre-program period to over $24 billion per year during the study period, and the smaller lenders maintained their share of a rapidly growing market during the study period. The availability of CMB funding was probably a factor in enabling them to do this.

Discussion

(a) The use of CMB funding by type of lender was analyzed based on the volumes of MBS issuance sold to the CHT or held as replacement assets for sale to the CHT. Data on MBS issuance from CMHC's NHA MBS program were classified by the consultants into four types of lenders: big five banks, medium-sized FIs, small lenders, and aggregators. Note that these data, which are the only data available on CMB participation, are categorized by issuer, which is not exactly the same as by lender (i.e., mortgage originators). There is insufficient information to allow for an analysis by lender type. However, because of the close correspondence between issuers and lenders (except for the aggregators, who do not originate mortgages but package mortgages issued by other, generally small, lenders and finance these mortgages using CMB), this analysis provides some insight into program participation by type of lender.

The following three charts show issuance of MBS pools that have been sold to CHT by type of issuer.

Exhibit 10

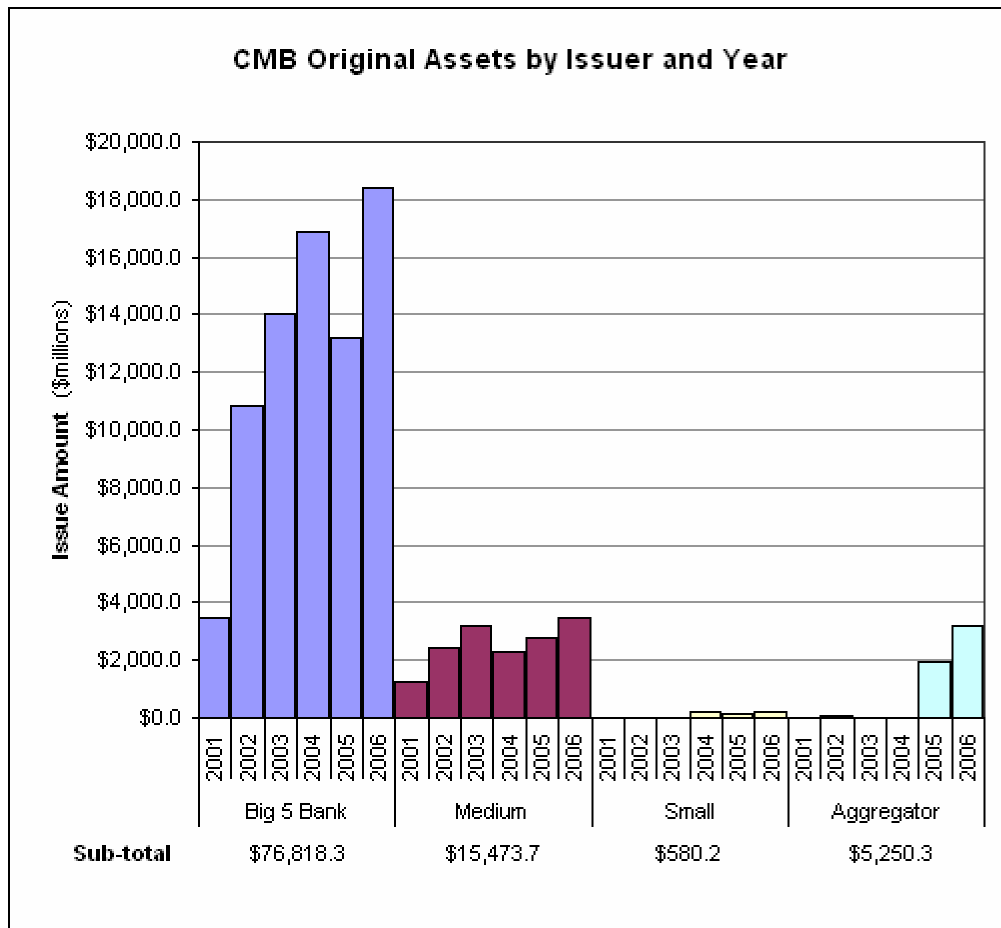


Exhibit 11

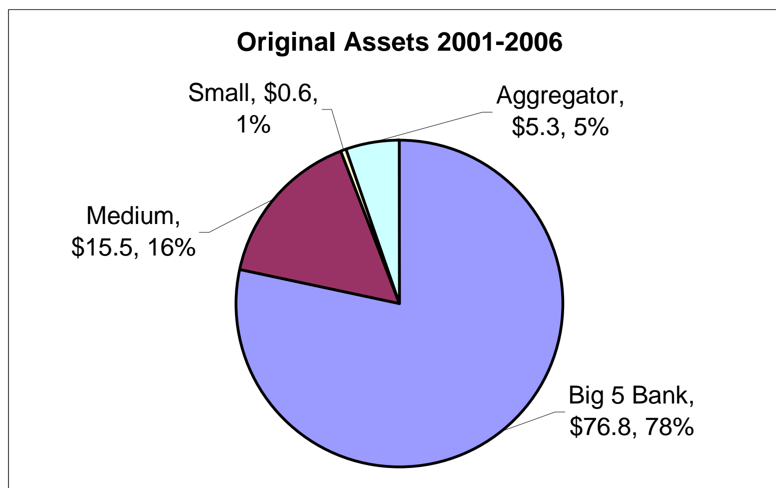


Exhibit 12

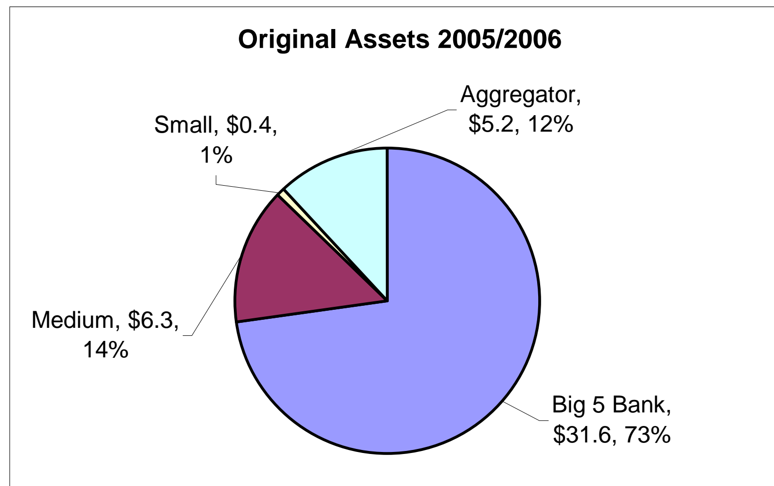


Exhibit 10 provides information on CMB original assets by issuer type and year. Exhibits 11 and 12 show the breakdown of these original assets by issuer group for the entire period of the CMB (2001 to 2006) and for the two most recent complete years (2005 and 2006).

All these exhibits show that the big banks are by far the major users of the CMB program, although their share has fallen as the aggregators have taken on a more important role over time. Since these aggregators were reported in our interviews of market participants to service mostly small and non-traditional lenders, it is reasonable to conclude that the smaller lenders have been able to access CMB funding to a much greater extent in the last two years than in the early years of the program.

(b) The total residential mortgage market has grown substantially during the study period, with the stock of residential mortgages outstanding increasing from about $400 billion to about $650 billion. Exhibit 13 provides information on historical mortgage approvals by type of mortgage lender. It shows the significant growth in this market and also shows that growth has quickened since approximately 2001, which coincides with the beginning of the CMB program. Both the bank/trust sector and the smaller lender sector have seen their mortgage volumes grow substantially.[55] For the smaller lender sector, mortgage volumes increased from an average of $11.3 billion per year over the 1995-1999 period to an average of $24.2 billion over the 2002-2006 period.[56]

[55] Note that in this exhibit we are using institution type as a somewhat imperfect proxy for size. Some trusts are small and some organizations in the "life insurance and other" category are fairly large.

[56] We have excluded 2000 and 2001 from these calculations in order to have clear pre and post-program periods, avoiding transition years (and also because 2000 was an anomalous year).

Exhibit 13

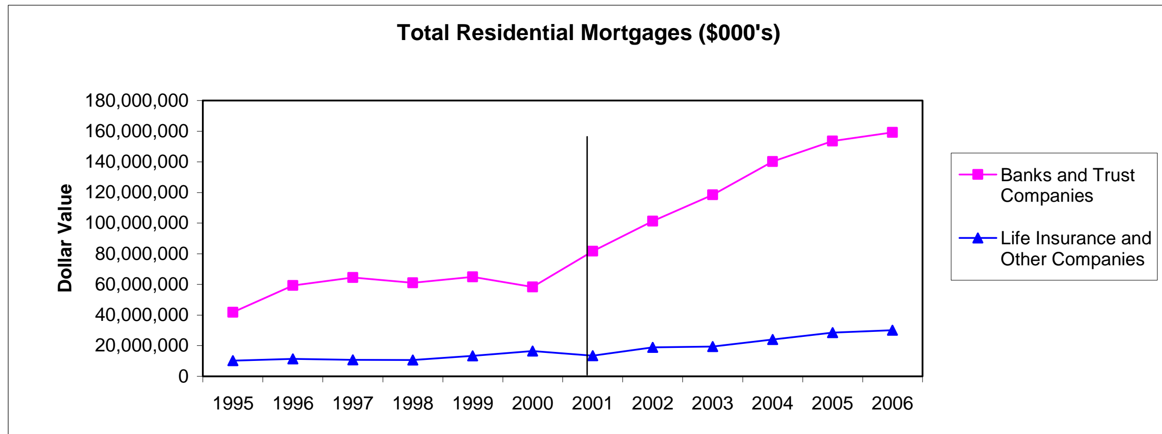
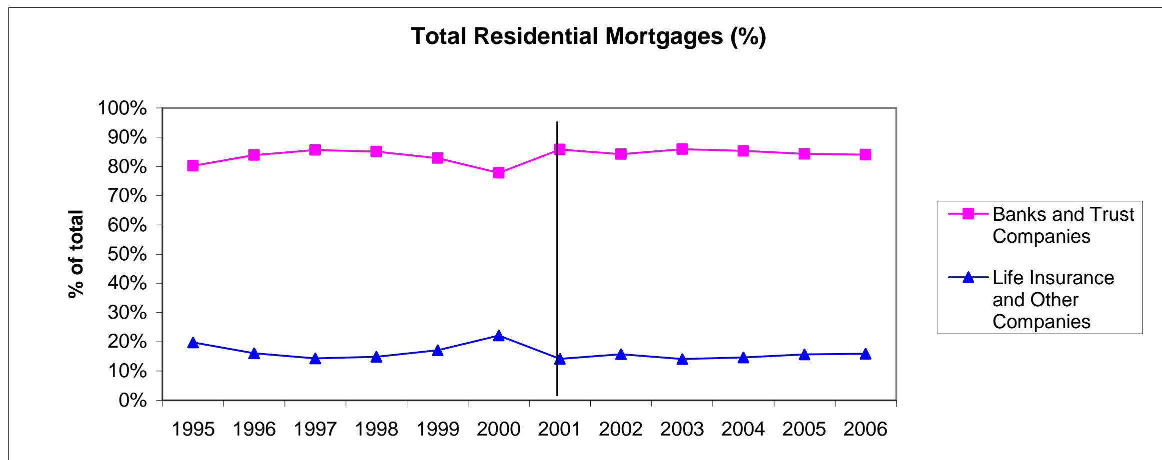


Exhibit 14 provides information on changes in market share by type of mortgage lender. As can be seen, market shares have been relatively stable since 2001. Comparing the five year periods before and after the introduction of the program, the market share of the smaller lender sector has remained relatively constant (16% in the pre-program period; 15% in the post-program period).

Exhibit 14



Thus, there is evidence that the smaller lender sector has maintained its share of a rapidly growing market. Since the CMB program has had an impact on the availability of funding to this sector (see section 5.2) and since this sector is generally more capital-constrained than the banks and trust companies, it is plausible to conclude that access to CMB funding was a factor that permitted the sector to maintain its market share.[57]

---

[57] There are two qualifications regarding this conclusion: (i) the data are not focused clearly on the segmentation of the market under consideration (i.e., the "Life insurance and Other Companies" are used as a proxy for new, small, and non-traditional lenders); and (ii) other factors besides the CMB program may also have influenced market shares.

6.3 EVALUATION QUESTIONS 3.2/3.3: IN WHAT WAYS HAS THE PROGRAM EITHER FACILITATED OR ACTED AS A BARRIER TO THE LEVEL OF LENDING ACTIVITY OF SMALL LENDERS?

Findings

1. The CMB program has supported the entry/expansion of smaller lenders because of its role in facilitating funding for mortgages by purchasing mortgages from them (mainly through aggregators and institutional investors). Funding to smaller lenders would probably have been more constrained in the absence of CMB funding. The program has also indirectly facilitated market access for smaller lenders due to its [indirect] support for the growth of the broker channel.

2. Many smaller lenders do not have the expertise to deal with some of the complexities of securitization strategies and/or they do not have the capacity or business model to deal with some of the program requirements, particularly requirements related to replacement assets.

Discussion

The bulk of the evidence for addressing these evaluation questions is from the interviews of market participants.

With regard to facilitating the activity of small lenders, note that two things are required in order for any group of lenders to expand their level of activity: (1) funding for mortgages and (2) market access. As discussed in section 5.2, the CMB program has had a significant impact on the availability of funds to smaller lenders, because smaller lenders have been highly reliant on the aggregators and institutional investors to purchase their mortgages. The aggregator channel would have been less likely to develop in the absence of the program. Even if aggregators had existed in the absence of the program, they could not have easily replaced CMB as a source of funding, since they sell virtually all their mortgages to the CMB program. Institutional investors often access the CMB program as well. Thus, one would conclude from the interviews of aggregators and institutional investors that funding to smaller lenders would probably have been more constrained in the absence of CMB funding.

The evidence regarding the impact of the CMB program on the second factor – market access – is less clear cut. Market access for smaller lenders has been primarily provided by mortgage brokers[58], so a key question is the influence of the CMB program on the growth of the broker channel. Much of the interview evidence indicated that the growth of the mortgage broker channel has not been significantly affected by the CMB program – when interviewees were asked how large the mortgage broker channel would have become in the absence of CMB,

---

[58] Very few smaller lenders have branch networks or significant origination directly through the internet or other channels.

most of them felt it would have a similar market share today, even if CMB had not existed. A minority felt that this channel would be somewhat smaller, but not significantly smaller.[59]

However, the CMB program may have had an influence on the growth of the broker channel that was not recognized by some interviewees, due to the role of the program in enhancing small lender access to funding. This increased availability of funding was likely a factor that enabled small lenders to participate in the mortgage market to the level they did, and this, in turn, would have contributed to the growth of the broker channel.[60] The interviews of financial institutions confirmed that the smaller lenders were a significant factor in the growth of the broker channel.

The evaluation did not identify any ways in which the CMB program acted as a barrier to the lending activity of smaller lenders, but it did identify some reasons why the direct use of CMB funding by smaller lenders has not been larger than it has been. In order to participate in the program, smaller lenders have two choices: (1) whole loan sales to the aggregators or others, or (2) find an eligible back-to-back swap counterparty. They typically prefer the back-to-back swap, since they believe they can generate more profit in this way than through whole loan sales. Despite the fact that all the aggregators and some of the big five banks said in the interviews that they are willing to provide such swaps, certain smaller lenders indicated that they have had difficulty finding a swap counterparty at a reasonable cost. In addition, some smaller lenders indicated that they lack the sophisticated systems and tools to deal with the program complexities (e.g., accounting complexity and earnings volatility[61]), and many expressed concerns related to the program requirements regarding replacement assets.

They have several concerns regarding replacement assets:

- They believe the criteria regarding which asset classes are eligible as replacement assets are too stringent.

- There is a significant risk due to changing interest rates when borrowers begin to convert fixed mortgages to floating, or floating to fixed. When such a conversion happens, the mortgage is no longer eligible for the pool that it is included in, and is considered to have been legally prepaid. A replacement asset must be sought, and in a time when a large number of borrowers are converting from floating to fixed, say, it may be difficult for small lenders to find sufficient floating mortgages to use as replacement assets. In such cases a Government of Canada bond may have to be used, resulting in negative carry, since the

---

[59] These opinions are consistent with experience in other countries, in which the mortgage broker channel has become very large in the absence of a CMB-like program. For example, in Australia mortgage broker origination is significantly higher than in Canada – nearly 40% of Australian mortgages are originated through brokers.

[60] The interviews confirmed the influence of small lender activity on the growth of the broker channel.

[61] This occurs because the lender recognizes the transaction as an asset sale for external accounting purposes, but for internal purposes most treasury departments treat the transaction as financing. This has several negative implications – e.g., mark-to-market accounting on the swap transaction results in unpredictable earnings volatility.

yield earned on a Government of Canada bond is lower than the yield that the borrower is required to pay on the CMB.

- Challenges arise as CMB maturity approaches when a large portion of the assets may need to be replaced.[62]

6.4 EVALUATION QUESTIONS 3.4 AND 3.5: HAS THE ROLE OF THE CMB PROGRAM IN SUPPORTING THE ENTRY/EXPANSION OF SMALL LENDERS HAD AN INFLUENCE ON REDUCING MORTGAGE RATES? HAS THE PROGRAM FOSTERED AN OVERALL MORE COMPETITIVE ENVIRONMENT?

Findings

1. Mortgage rates are driven mainly by the big banks. Smaller lenders generally use methods such as new product development and broker compensation models to gain market share rather than undercutting rates.

2. However, to the extent that rates were pushed downward by the broker channel, the CMB program may have had an impact, since the program likely facilitated the growth of the broker channel (see previous section and point 3 below).

3. The competitiveness of the primary mortgage market has increased greatly since 2001. Although the CMB program was not among the factors that directly contributed to increased competitiveness, it may have had an indirect impact on the competitive environment due to the support it provided for small lender funding and the fact that small lender activity was a significant factor in the growth of the broker channel.

Discussion

The evidence for these evaluation questions is from the interviews of market participants, which addressed how mortgage rates are set and competitiveness generally. Note that there are no data regarding the number of smaller lenders who have entered and left the market during the study period. As a result, the analysis of the impact of the CMB program on mortgage rates due to the role of CMB in facilitating the entry and expansion of smaller lenders is limited.

The interviews examined price leadership in two channels – in the big five banks and in the mortgage broker channel.

For the big five banks, interviewees indicated that, due to intense competition, they generally have virtually identical posted rates. One of the big five banks will be the first mover, and the others tend to immediately follow any rate changes, unless the rate is too low relative to costs. Price differentiation in posted rates is not heavily used by the big five banks as a method for

[62] MBS repo eligibility has relieved some of these concerns.

winning customers – instead, their methods for winning customers are based primarily on service, relationships, and product differentiation. Accordingly, since mortgage rates are not a significant competitive factor, any expanded activity of the smaller lenders that may be due to the CMB program has not had much direct influence on the mortgage rates of the big banks. If the expanded activity of smaller lenders had an influence on mortgage rates, it would most likely be in the mortgage broker channel, where the small lenders are participating. However, the smaller lenders that were interviewed indicated that they generally use methods such as new product development and broker compensation models to gain market share rather than undercutting mortgage rates that are driven mainly by the big banks. (In the mortgage broker channel, one of the larger lenders – usually one of the big five banks or a subsidiary – tends to take a price leadership role as first mover. Some small lenders that participate in this channel told the study team that they tend to price within a few basis points either way of bank rates, depending on the volume they desire, their name and reputation in the channel, and their relationship with the mortgage brokers.)

On the other hand, the expanded activity of smaller lenders due to the CMB program (see sections 6.2 and 6.3) could have had an indirect impact on mortgage rates, because small lender activity was an important factor during this period in the growth of the broker channel, which, in turn, contributed to downward pressure on mortgage rates.

Regarding the impact of the CMB program on competitiveness generally, the mortgage market has become much more competitive since 2001, and the main contributing factors for this are outlined in section 6.1. The reasons listed there do not include the CMB program. In the section of the interviews dealing with competitiveness, few lenders mentioned the CMB program, other than noting that the reliable funding offered by the CMB program for smaller lenders has supported their presence as competitors in the mortgage market, and this has prevented the increased dominance of the big banks.

However, as discussed in the previous section, this support for small lender activity could have also contributed to a more competitive environment in another way – specifically, as a result of the impact of small lender activity on the growth of the broker channel. This "second order impact" may not have been recognized by many of the interviewees because of the indirect nature of the impact.[63]

---

[63] I.e., CMB contributed to increase small lender activity, which, inturn, contributed to increased broker activity, which, in turn, contributed to increased competitiveness.

7.0 FINDINGS RELATED TO THE IMPACTS OF THE CMB PROGRAM ON CAPITAL MARKETS

The CMB is a mechanism for accessing funding from capital markets. This section examines the impacts of Canada Mortgage Bonds on these markets – particularly impacts on bond markets (including GOC bonds), as well as the possibility of several other unintended impacts.

7.1 EVALUATION QUESTION 4.1: (A) WHAT IS THE SIZE OF THE CMB PROGRAM IN RELATION TO CAPITAL AND BOND MARKETS? (B) IS IT REASONABLE TO EXPECT THAT A PROGRAM OF THIS MAGNITUDE COULD BE EXPECTED TO HAVE SIGNIFICANT IMPACTS ON THESE MARKETS?

Findings[64]

1. In the context of capital markets, the CMB program is very large and dominates the short end of the Canadian government bond market.

2. CMBs have filled investor demand for high quality bonds as GOC issuance has fallen.

Discussion

(a) CMBs have become a significant part of the Canadian fixed income market. CMBs are roughly equal in amount outstanding to GOC bonds between one and five years to maturity – total amount of CMBs outstanding is $106 billion, versus comparable maturity GOC bonds of $93 billion.

The weight of CMBs in the Canadian Bond Index (i.e., all bonds with more than one year to maturity) is 13.1%.[65] The weight of GOC bonds in the Canadian Bond Index has fallen from a high of 63% in 1997 to about 31% today. The overall amount of GOC debt outstanding has gone down as the government fiscal position has improved and the Bank of Canada has been buying back less liquid bonds to boost the size of new issue benchmark bonds. In contrast, CMB issuance has grown each year.

(b) Due to extensive marketing efforts by CMHC and participating dealers, most domestic and international investors view CMBs as nearly perfect substitutes for GOC bonds. Many buy-and-hold investors prefer CMBs over GOC bonds of similar term due to the extra spread and the comparable risk due to the government guarantee. This has contributed to the steady appetite for CMB issuance, but the demand from these investors has not been sufficient to eliminate the spread. However, large issues have been well accepted and have not pushed spreads wider.

---

[64] The Findings and Discussion in this section are taken from the *Report on Capital Markets Impacts*, Twist Financial, October 11, 2007.

[65] The CMB weight is 27% of the Short Index (bonds with 1 to 5 years maturity).

7.2 EVALUATION QUESTION 4.2: WHAT IMPACT IS THE PROGRAM HAVING ON THE BOND MARKET?

Findings

1. CMBs serve to satisfy the demand for high quality bonds, and this is their main impact on the bond market.

2. Other impacts are more subtle and are not significant. In particular, there is no significant bond market disruption due to the large issue size of CMBs.

3. Because of the attractiveness of CMBs compared to other forms of borrowing, CMBs have substituted, to some extent, for bond issuance and private securitization issuance by participating financial institutions.

Discussion

The impact of CMBs on filling investor demand for high quality bonds is discussed in section 7.1 above. This section discusses more subtle impacts (e.g., of issuance and maturity dates). The coupon and maturity payments of CMBs were originally March 15 and September, 15, but in 2006 these were moved to June 15 and December 15. This change was generally viewed as a positive change by dealers and most investors. These new dates more closely align with the most common coupon and maturities for GOC bonds, June 1 and December 1. (The GOC dates are a focal point for fixed income portfolio managers, since the benchmark risk characteristics change significantly on these dates.)

When CMBs enter or roll out of the index, the impact on duration and sector weight can be meaningful and can affect trading patterns of institutional investors, particularly index fund managers.

Investors and dealers that were interviewed did not indicate any significant bond market disruption due to large issue size – either upon new issue or when issues roll out of the index. The impact of the issues entering and rolling out can be estimated in advance and incorporated into trading activity in the context of the market without abnormally influencing spreads on CMBs or other bonds.

Because the CMB program provides a standardized government guaranteed vehicle for mortgage funding that is well accepted by investors and because banks recognize the CMB as the lowest cost funding source, it has substituted for other solutions to prime mortgage funding. These include private mortgage bonds (bonds with a structure similar to CMBs but without the government guarantee) and other sources of bank funding for their operations, such as bank deposit notes, subordinated debt, and other forms of asset-backed securities. This has reduced growth in the corporate and securitization sectors of the Canadian bond market, and increased the government sector.

7.3 EVALUATION QUESTION 4.3: WHAT IMPACT IS THE PROGRAM HAVING ON THE MARKET AND RATES FOR GOC BONDS?

Findings

1. There has been no noticeable impact of Canada Mortgage Bonds on the GOC yield curve.

2. GOC bonds are more actively traded and more liquid than CMBs, but CMBs themselves are highly liquid.

Discussion

The general market perception from the interviews conducted is that, since inception, despite the size of the CMB program, there has been no impact on the GOC yield curve (i.e., government interest rate levels). All interviewees agreed that GOC yields are determined by macro and global factors, with the supply of CMBs having only a limited effect.

With regard to trading and liquidity, data and interviews support the conclusion that GOC bonds are more actively traded and more liquid than CMBs[66], but CMBs themselves are highly liquid. In fact, although benchmark GOC bonds are more liquid than CMBs, CMB liquidity is perceived by interviewees as better than provincial bonds and comparable to or better than "off the run" GOC bonds.

The availability of CMBs has decreased the attractiveness of GOC bonds for investors who do not highly value the better liquidity of GOC bonds. For some investors with relatively low turnover, CMBs have replaced all GOC holdings under 5 years to maturity. For more active traders, the CMB program has had no impact on their activity in GOC bonds.

7.4 EVALUATION QUESTION 4.4: WHAT IMPACT IS THE CMB PROGRAM HAVING ON CAPITAL MARKETS GENERALLY, INCLUDING MBS AND SWAP MARKETS?

Findings

1. The CMB program dramatically increased NHA MBS issuance volumes by creating a buyer for MBS pools, but other (non-CMB) secondary market activity in MBS has been minimal.

2. Thus far CMB replacement assets have not created any market disruptions.

3. CMB issuance has not had a significant impact on swap rates.

---

[66] This is despite the fact than CMB issuance is greater than five-year GoC. There are several technical factors that account for the greater liquidity of GoC bonds – for example, CMBs tend to be subject to more buy and hold investment than GoC bonds due to the spread.

Discussion

Impact on the NHA MBS market

As discussed in section 4, historically the NHA MBS market in Canada did not gain wide acceptance with investors, primarily due to the complex pass-through payment structures. The CMB program generated a new buyer for NHA MBS pools – specifically, the sale of these pools into the CMB program.

In this way the CMB program has dramatically increased NHA MBS issuance volumes. However, secondary market activity in non-CMB MBS has been minimal since inception of the program.

Replacement asset impact on capital markets

Approved issuers in the CMB program pool mortgages and sell them to the Canada Housing Trust (CHT). As these mortgages prepay principal, issuers are obligated to maintain the original principal amount of assets in the Trust. This is accomplished through replacement assets.

The need for replacement assets grows as each CMB issue nears maturity and principal is paid down. As of December 2006, there were $98 billion of MBS issued into the CHT as original assets and $54 billion as replacement assets.[67]

Interviewees in the repo and money markets said that thus far, CMB replacement assets have not created any market disruptions. However, only two relatively small CMB issues have matured. Interviewees expressed some concern that, as larger issues mature, replacement asset volumes will rise commensurately, and that there is potential for particularly large repo market flows, which could affect trading patterns and spreads.

Impact on the swap market

Interviews with dealers and investors confirmed that swap rates do not experience unusual volatility on or surrounding CMB new issue dates despite significant flows due to hedging activity. Some swap traders said there was an adjustment period early in the CMB program, but that operations are now smooth.

---

[67] The definition of eligible replacement assets is restricted to maturities shorter than the CMB, and includes GOC securities, NHA MBS, repos collateralized by NHA MBS or GOC, and ABCP with R-1 High rating fully backed by residential mortgages, and similar repos.

8.0 FINDINGS RELATED TO THE COST-EFFECTIVENESS OF THE CMB PROGRAM

This section examines the issue of whether there are potential changes in the CMB program design and delivery that may enhance program cost-effectiveness and achievement of program objectives. The findings are based on a compilation and analysis of costs, revenues and factors shaping these costs and revenues plus findings regarding the success, competitiveness and capital markets issues of the CMB program (see sections 5-7) that have a bearing on the cost-effectiveness issue. The primary focus in the cost and revenue analysis was on the CMB-related costs and revenues of the CHT and CMHC, for which detailed financial data was made available by CMHC. This was supported by a qualitative analysis of the costs, revenues and risks of the program to other participants, such as Approved Sellers, Swap Counterparties, and Underwriters.

8.1 EVALUATION QUESTION 5.1: WHAT IS THE DISTRIBUTION OF COSTS, REVENUES, AND RISKS FOR MAJOR PROGRAM PARTICIPANTS?

Findings

1. A mix of methods is in place to align and balance costs, revenues and risks while providing incentives for participating financial institutions, intermediaries, and investment dealers to facilitate participation by lenders, maximize take-up of CMB issues, and ensure investors receive timely payments.

2. Interest risk created by the design of CMB (converting a varying flow of interest and principal payments into a stream of constant payments of CMB interest) is carried by swap counterparties (who are often the same entities as the respective originators). Counterparties retain interest earned in excess of CMB interest payments (net of CHT administration and operation costs) as compensation for carrying this risk.

3. The CMB guarantee fee of 0.20% is intended to cover two categories of risks:

   (a) risks associated with the timely payment to CHT of interest and principal on its holdings of NHA MBS; and

   (b) any additional risks associated with the timely payment of interest and principal to CMB investors, primarily the risk of default by swap counterparties and the risk of default by ABCP issuers (when high quality ABCP are used as replacement assets).

   The evaluation study found that the risks in category (b) could be as high as 0.047% at current interest rates. The risks in category (a) were not analyzed as part of this study; they are currently being analyzed internally within CMHC.

4. The program has resulted in net revenues to the government – based on guarantee fees earned and the revenues and expenses associated with CMHC's role as Financial Services Advisor – of approximately $79 million through the end of 2006 on total issuance of $97.6 billion. (Net revenues in 2006 were $31 million.)

Discussion

Exhibit 15 summarizes the factors that drive the costs and revenues of the principal participants in the CMB program – CMHC, CHT, underwriters, approved sellers, and swap counterparties – and associated risks incurred. Key points to note from this exhibit:

- With regard to CMHC's role as Guarantor:
  - Bond issuance expenses paid by CHT include the CMB Guarantee Fee (0.20% of the value of each CMB issue), which is paid to CMHC in return for a Canadian Sovereign guarantee of timely payment of CMB interest and principal to CMB investors.
  - Approved Sellers pay their proportional share of the CHT's bond issuance expenses, including the CMB Guarantee Fee.
  - The CMB Guarantee Fee is intended to cover the following risks:

    1. *Swap counterparty credit risk*. The risk that a counterparty defaults and the value of the remaining cash flows owing on a CMB (CHT liabilities) exceeds the value of the associated NHA MBS and reinvested principal assets (CHT assets).
    2. *Principal reinvestment risk*. NHA MBS principal repayments and prepayments can be reinvested in a limited range of permitted investments – NHA MBS, GOC bonds, asset-backed commercial paper (ABCP) backed by residential mortgages, and short-term (30 day) reverse repurchase agreements (reverse repos). GOC bonds are risk free, and NHA MBS are guaranteed by the MBS guarantee, but ABCP carry a risk that the issuer may face liquidity difficulties and the CHT may face delays and incur costs in accessing and liquidating the underlying mortgages. The risks associated with reverse repos are considered to be minimal.[68]
    3. *Seller default risk*. The risk that approved sellers of NHA MBS do not pass through interest and principal payments to CHT due to, for example, a default by a mortgage servicer, which would expose CHT to the administrative cost and time issues arising from the need to find a replacement servicer.
    4. *Operational risk*. The risk that errors, failures of operating systems or technologies, fraud, or failed transactions would result in losses to CHT and potentially lead to an inability to make timely payments of obligations to CMB investors.

---

68 The main risk is that the repo counterparty may default, i.e., refuse to repurchase the securities at the previously agreed-upon price, and in this case the CHT would have to sell these securities at market prices. However, the combination of collateral requirements and monitoring practices minimizes the CHT's exposure. (In addition, because the repo counterparty and swap counterparty are the same organization and the most likely cause of a repo default is a rise in interest rates, CHT's exposure to repo default is mitigated by a concurrent reduction in exposure to swap counterparty default.)

- CMHC pays the Government of Canada (GOC) a risk premium for the GOC's ultimate backing in the event of CMHC being unable to honour its timely payment guarantee due to an extreme outcome. For the purpose of calculating this risk premium, an extreme outcome is defined as the default of a financial institution operating as a swap counterparty.[69] The risk premium is reviewed annually and adjusted to reflect movements in interest rates and other parameters, and the payment expense amortized over the life of each CMB issue. The GOC fee was initially set at 0.026% of the value of the CMB issues and has subsequently varied between 0.021% and 0.0289%.

- The analysis of credit risks associated with the CMB program prepared by AKA examined the risk of swap counterparty default, as well as risks associated with the reinvestment of NHA MBS principal repayments, particularly the risk of a default by an issuer of ABCP used as replacement assets. With regard to the risk of a swap counterparty default, AKA estimated the likelihood of a default, at interest rates in place in mid-2007, to be on the order of 2.3 to 3.2 basis points (depending on the mix of floating and fixed rate NHA MBS and CMB). While the AKA analysis used slightly different assumptions from those used by CMHC in its initial estimate of swap counterparty risk, the two risk assessments are in line – that is, a current level of 2.89 basis points used by CMHC to calculate the GOC fee and an estimate in the range of 2.3 to 3.2 basis points by AKA.

- CMHC's Financial Service Advisor (FSA) revenues have lagged behind its CMB-related expenses (including overhead allocations) in every year of the program's operation. Excluding overheads, revenues progressively increased in each year of the program (as a percentage of direct expenses) and exceeded direct expenses in 2006. Given that FSA activities have a bearing on the management of the CMHC guarantee, this raises a question as to whether the FSA fee (0.01%), which is deducted from the amounts paid to approved sellers for NHA MBS by CHT, is too low. (Alternatively, the annual value of CMB issues would need to be of the order of $28-30 billion for CMHC's current, fully-loaded FSA expenses to be covered by FSA fee revenues.)

- Non-dealers in the interviewing program suggested underwriting fees could be reduced given the significant growth in the value of CMB issues (and, by extension, growth in underwriting fees) and their level of acceptance among investors. These fees are paid to investment dealers in return for their buying and holding the full amount of an issue allocated to them and accepting the risk that they may not find institutional and retail buyers. However, current underwriting rates – at 0.175% -- have been progressively reduced from a level of 0.25% in 2001 as the size of CMB issues has grown, and appear to be below underwriting rates applied to other sources of funding available to financial institutions, such as BDN and ABS, of 0.35% and 0.55%, respectively, according to

---

[69] Two possible sources of loss were identified by CMHC at the time this fee was introduced in 2002: (1) the interest earned on principal prepayments, which could be lower than the interest rate that must be paid on the CMB; and (2) the amount of accrued interest owed to the Trust by the counterparty, since CMB interest is only paid semi-annually while MBS payments are monthly. See *Proposal to Pay the Federal Government for its Ultimate Backing of Securitization Activities,* CMHC Securitization Group, April, 2002.

information provided by CMHC's Treasury group.[70] Participating dealers also have incentives to support secondary market trading of CMB and facilitate participation in the CMB program by small lenders. This combination of decreasing costs and active support for the delivery of the CMB program suggests that syndication is a cost-effective approach to the marketing of CMB issues.

- Costs of participation in the program by approved sellers are recovered through the operation of their fund transfer pricing processes and pricing of their products, and factored into the profitability of their mortgage and other business lines.

- Risks of swap counterparty default are managed through the specification of permitted investments and application of strict eligibility criteria and collateral requirements for counterparties and their monitoring by CMHC (in its role as Financial Advisor and Guarantor) and CHT's Trust Administrator. The risk of a default is covered by the CMHC guarantee. Swap Counterparties cover the costs of their CMB activities from the spread between the returns they generate from their reinvestment of interest payments transferred by CHT and the interest payments owing on CMB issues. This means that they accept a downside risk that they may not be able to meet their periodic payment obligations but have no cap on their potential upside benefits.

[70] Of course, one would expect higher underwriting rates given the economies of scale and regular issuance and also because of differences between marketing private securities and government securities.

Exhibit 15
Distribution of costs, revenues and risks among major participants in the CMB program

<table>
<tr><th>Participants</th><th>Cost Factors</th><th>Revenue Factors</th></tr>
<tr><td>1. CMHC – Guarantor</td><td>▪ There have been no claims against the guarantee since program inception. In the event of a claim CMHC would have to cover any shortfalls in obligations to make timely payments of CMB interest and principal.
▪ CMHC pays a Guarantee Fee to the Government of Canada as a risk premium for the ultimate backing of the GOC. This premium for this risk was initially at 0.026% (2.6 basis points). The level is reviewed annually and has ranged between 0.021% (2003) and 0.0289% (2006).</td><td>▪ CMB Guarantee Fee (risk premium) of 0.20% (20 basis points) of each CMB issue, paid by Approved Sellers, via CHT. This guarantee fee is for the timely payment of interest and principal on both CMB issues and NHA MBS. (Guarantee fee for 5-year NHA MBS[71] held outside of the CMB program is also 0.20%.) Guarantee fee paid at time of CMB issuance covers both the initial NHA MBS and replacement NHA MBS added over the life of each CMB issue.</td></tr>
<tr><td colspan="3">Risk Considerations:

CMHC guarantee of timely payment of CMB interest and principal to investors. CMB risk is managed by application of eligibility criteria and collateral requirements for participating counterparties, relating to minimum credit ratings and capacity to engage in swaps, and specification of permitted investments.

Analysis of the swap counterparty credit risk concluded that this exposure depends on interest rate levels at the beginning of the funding lifecycle for each CMB issue, and the risk increases with higher interest rates at the time of CMB issuance. This risk was estimated by AKA to not exceed 0.032% (3.2 basis points), at current interest rates. Additionally, CHT and CMHC incur risks of default by ABCP issuers, which AKA estimated to be on the order of 0.015% (1.5 basis points).

Majority of participants in our interviewing program indicated that the guarantee fee is critical to the ongoing acceptance of CMB as government bonds, and without this guarantee, spreads would widen and some participants would withdraw.

Guarantee of timely payment of NHA MBS interest and principal by NHA MBS sellers. NHA MBS risk is managed by application of eligibility criteria for prospective sellers and requirement for NHA MBS pools to consist of insured mortgages.</td></tr>
<tr><td colspan="3"></td></tr>
</table>

71 20% fee applies to NHA MBS with terms in the range of 4 years 7 months to 5 years 6 months.

<table>
<tr><th>Participants</th><th>Cost Factors</th><th>Revenue Factors</th></tr>
<tr><td>2. CMHC – Financial Services Advisor</td><td>▪ Provision of advisory services to CHT and CMHC (as Guarantor) related to the selection of NHA MBS sellers, swap counterparties and underwriters; establishment of swap counterparty credit criteria; planning and management of CMB issues; monitoring financial performance and management of CMB issues through to maturity.
▪ Annual direct cost of FSA services (excluding start-up costs) has been running at ~$2.0-2.2 million since 2003 ($2.8-3.0 million including overhead).</td><td>▪ CHT pays an FSA fee of 0.01% of the value of each CMB issue as well as reimbursing CMB marketing costs incurred by CMHC.
▪ Annual FSA revenues directly linked to the value and number of CMB issues, and have varied between ~$1.8 and ~$2.6 million since 2003.</td></tr>
<tr><td colspan="3">Risk Considerations:
Major challenge for FSA role is to ensure:

▪ Quality of due diligence in reviewing and approving sellers and underwriters has a direct bearing on CMHC's risks as the Guarantor.
▪ Appropriate pricing of issues.
▪ Effective oversight of, and support for, servicing current CMB issues and their disposal at maturity.
▪ Costs of these activities have exceeded FSA revenues (if overhead is included in costs) in every year since program inception.</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>3. Canada Housing Trust /Issuer Trustee/ Trust Administrator</td><td>▪ Costs of CMB issuance are paid by approved sellers.
▪ Ongoing administration and operation are funded from the stream of interest payments received for re-investment by the swap counterparties.</td><td>▪ All revenue received is either income from NHA MBS acquired at the time of each CMB issue or interest on the reinvestment of principal repayments and prepayments.</td></tr>
<tr><td colspan="3">Risk Considerations:
CHT essentially operates on a break-even basis and incurs no liabilities for the performance of CMB issues nor repayment of NHA MBS liabilities.</td></tr>
<tr><td colspan="3"></td></tr>
</table>

<table>
<tr><th>Participants</th><th>Cost Factors</th><th>Revenue Factors</th></tr>
<tr><td>4. Underwriters</td><td>▪ These investment dealers buy the full amount of their share of each new CMB issue.
▪ Incur marketing costs and costs to buy, hold, and sell their allocated shares of each CMB issue.</td><td>▪ Underwriting fee is negotiated with CMHC and CHT as part of the process of assembling underwriting syndicates and allocating each dealer's share of the total issue.
▪ Underwriting fees have progressively fallen in percentage terms (0.25% in 2001 to 0.175% at the end of 2005) but increased in revenue terms as the size of most CMB issues has grown.</td></tr>
<tr><td colspan="3">Risk Considerations:

Agree to purchase the share of each CMB issue allocated to them and, in so doing, assume any risk of not being able to find sufficient CMB investors. However, the combination of a government guarantee and a higher rate than GOC bonds makes CMB very attractive to investors.

Factors that influence CMB allocations among the members of syndicates include the level of support for small lender participation in the program, and support for secondary market trading of CMB. (In total there are eight formal evaluation criteria used to assess and select dealers.)

Many participants in our interviewing program who were not investment dealers felt that there was room to negotiate further reductions in the underwriting fee due to the increased value of CMB issues and ready acceptance of CMB issues among investors.</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>5. Approved Sellers</td><td>▪ Costs of participation in CMB program – costs of CMB issuance, costs to assemble NHA MBS pools – are allocated through the funds transfer pricing processes of the participating lenders, and factored into the profitability of their mortgage and other business lines.
▪ Small lenders have trouble with the complexity of the CMB program. Participation is indirect, via whole loan sales to aggregators or arrangements for back-to-back swaps with swap counterparties.
▪ Small lenders also encounter greater difficulties in satisfying replacement asset requirements.</td><td>▪ Receive the proceeds of pools of NHA MBS assembled and sold to CHT.
▪ Receive servicing fees for the management of mortgages underlying the NHA MBS.
▪ Findings from interviews with financial institutions and the FTP analysis indicate that the cost-of-funds advantage of CMB for major lenders (big 5 banks) is estimated to range between 10 and 20 basis points, and was of the order of 15-18 basis points at the time of interviews (end-2006, start 2007).
▪ Interviewees also estimated that the cost-of-funds advantage for smaller lenders is on the order of 10 basis points.</td></tr>
</table>

<table>
<tr><th>Participants</th><th>Cost Factors</th><th>Revenue Factors</th></tr>
<tr><td colspan="3">Risk Considerations:

CMB program is the lowest cost source of term wholesale funding for approved sellers and lenders. Comparisons of the estimated cost of participation in the CMB program versus use of BDN funding suggest that CMB have a cost advantage of approximately 18 basis points.

Risk of default on underlying mortgages in NHA MBS pools is covered by the insurance on these mortgages.

Smaller and mid-sized mortgage lenders – who participate as approved sellers or approved NHA MBS issuers – reported difficulties in satisfying the requirements for replacement assets to replace pre-payments of principal on mortgages in the NHA MBS pools. This challenge intensifies as maturity approaches, when a large proportion of the replacement assets may need to be repo assets. (NHA MBS repo eligibility has relieved some of these concerns.)

Some smaller and mid-sized lenders also indicated that they have difficulty finding a swap counterparty (which is required for direct participation in the CMB program) at what was considered to be a reasonable cost.

Availability of the aggregator channel (whose development was facilitated by the introduction of the CMB) provides small lenders with an alternative means of accessing CMB funding.</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>6. Swap Counterparties</td><td>▪ Costs of operation are recovered from spread between returns generated on the reinvestment of interest payments transferred by CHT.</td><td>▪ Revenues (and profitability) of swap activities are determined by the spread between CMB interest payments and revenue from investment of NHA MBS interest payments and interest on re-invested principal.</td></tr>
<tr><td colspan="3">Risk Considerations:

Swap counterparties must meet pre-determined eligibility criteria (e.g., relating to credit ratings) and collateral requirements to participate in the CMB program.

Incur risk that they may have difficulty finding appropriate replacement assets that generate sufficient returns to maintain periodic CMB interest payment obligations and thus default. (Risk to CMB investors is offset by the CMHC Guarantee.)

Exposure to the swap counterparties increases when interest rates decrease from the level in place at the time of CMB issuance.

In the event of a likely default by a counterparty the FSA has the right to arrange for the transfer of the defaulting party's assets and associated interest payment obligations to another approved swap counterparty.</td></tr>
</table>

Exhibit 16, which provides the annual costs of the operations of the Canada Housing Trust over the period 2001-2006, show the magnitude of some of the cost items discussed above.

Exhibit 16
Annual Revenues and Expenses for Canada Housing Trust, 2001-2006

Canada Housing Trust (CHT)	2001 ($,000)	2002 ($,000)	2003 ($,000)	2004 ($,000)	2005 ($,000)	2006 ($,000)
Revenue:						
Income from NHA MBS	$ 86,562	$522,281	$1,095,222	$1,838,365	$2,457,529	$2,860,221
Income from securities held for investment	228	4,869	24,871	51,486	144,378	539,110
Other income	22,508	58,425	71,778	80,013	72,536	98,597
	$109,298	**$585,575**	**$1,191,871**	**$1,969,864**	**$2,674,443**	**$3,497,928**
Expenses:[1]						
Interest Expense	$ 86,123	$524,242	$1,115,567	$1,884,642	$2,595,847	$3,392,043
Operating expenses	23,165	61,323	76,294	85,212	78,586	105,875
	$109,288	**$585,565**	**$1,191,861**	**$1,969,854**	**$2,674,433**	**$3,497,918**
Surplus	$ 10	$ 10	$ 10	$ 10	$ 10	$ 10

1. Fees paid to third parties, including CMHC, include GST.

Source: Audited CHT Financial Statements.

CMHC revenues and expenses related to the CMB program are shown in Exhibit 17.

Exhibit 17
Annual CMHC Revenues & Expenditures Related to the CMB Program, 2001-2006

CMHC	2001 ($,000)	2002 ($,000)	2003 ($,000)	2004 ($,000)	2005 ($,000)	2006 ($,000)
CMHC - Guarantor						
Guarantee fees earned (amortized over the life of each CMB issue)	$770.0	$4,596.8	$10,045.3	$16,440.0	$23,674.9	$31,258.3
CMHC – Government of Canada Guarantee Fee						
GOC Guarantee fees paid	-	($588.6)	($1,071.4)	($2,022.4)	($2,904.6)	($3,931.7)
CMHC – Financial Services Advisor (FSA)						
Revenue:	$502.9	$1,334.5	$1,837.5	$2,095.0	$1,968.1	$2,578.9
Expenses:	$4,331.2	$2,535.6	$3,015.3	$2,909.6	$2,793.4	$2,764.9
FSA Revenues less Expenses – Excluding Overhead	($3,448.1)	($534.3)	($186.8)	($57.6)	($100.5)	$497.8
FSA Revenues less Expenses – Including Overhead	($3,828.3)	($1,201.1)	($1,177.8)	($814.6)	($825.3)	($186.0)

Source: Expense data extracted from CMHC's financial and time management systems. Revenue data provided by CMHC's Corporate Accounting group.

8.2 EVALUATION QUESTION 5.2: WHAT IS THE DISTRIBUTION OF PROGRAM DELIVERY COSTS, RISKS, AND BENEFITS AMONG STAKEHOLDER GROUPS?

Findings

1. The introduction of the CMB program has reduced the cost of funds to financial institutions and a substantial proportion of this funding advantage has likely been passed on to borrowers, as competition for market share amongst mortgage lenders has intensified.

2. Lenders have used CMB to increase the rate of mortgage securitization and reduce their costs-of-funds, compared to alternative funding sources, such as Bankers Deposit Notes. This cost of funds advantage to the big banks has been on the order of 18 basis points.

3. The CMB cost-of-funds advantage for smaller lenders compared to their next cheapest sources of funds has been similar, although probably less than for the big banks. The complexity of the CMB program also poses challenges for smaller lenders, with most reporting difficulties with the replacement asset requirements.

4. CMHC currently pays a GOC fee on each CMB issue to cover the risk of losses under extreme economic conditions, which is currently set at 0.0289% and amortized over the life of each issue.

Discussion

Mortgage borrowers

Findings from interviews with market participants and the Funds Transfer Pricing study suggest that the introduction of the CMB program has reduced the cost of funds to financial institutions and that a substantial proportion of this funding advantage has probably been passed on to borrowers, due to intense competition for market share amongst mortgage lenders[72]. Since CMB funding only accounts for less than 20% of total mortgage funding, the savings from lower mortgage rates for an average borrower are not large. Quantitative analysis of available mortgage rate data showed that the impacts of the CMB program on mortgage rates for the average borrower are not discernable from the data. Savings to Canadian borrowers as a whole are currently estimated at up to $174 million per year.

Comments made by market participants suggested that the benefits of this lower cost of funds have not been evenly distributed but have been more likely to accrue to certain segments of the market or types of mortgage products. In this regard, the majority of interviewees representing financial institutions suggested the impact of the CMB funding advantage was greatest for holders of new five year fixed rate mortgages (the most price-competitive segment

[72] As noted in section 6.4, the CMB program may have contributed to increased competitiveness during the study period through its indirect support for the broker channel (i.e., through its support for small lenders who, in turn, facilitated the growth of the broker channel).

of the market), especially for preferred branch customers and in the most competitive locations, such as urban areas.

Lenders

Analysis of lenders' balance sheets shows that securitization has played an increasingly important role in financing the mortgage portfolios of the major banks, with the share of mortgage portfolios securitized by the major banks going from approximately 9% in 2004 to about 14% in 2006. Analysis of the big five banks' funds transfer pricing processes suggests that the cost-of-funds advantage of the CMB is in the range of 10 to 20 basis points. The Funds Transfer Pricing analysis estimated that, over the course of the study period, the CMB advantage has averaged approximately 18 basis points (0.18%) below the next cheapest source of wholesale funds (Bankers' Deposit Notes), after allowing for additional costs for CMB.

The cost-of-funds advantage for smaller lenders was estimated to be possibly smaller than for the five big banks. In addition, small and medium sized lenders reported difficulties in satisfying program requirements for replacement assets, and a number reported difficulty in finding swap counterparties at a reasonable cost. These difficulties reduced the attractiveness of the CMB program to these participants and raised the threshold level at which an approved issuer could consider becoming an approved seller.

The CMB program is generally regarded, among the financial institutions interviewed, as having made possible the establishment of the aggregator channel, which in turn, has improved the availability of funds to smaller financial institutions and monoline lenders. With increased competition and new entrants in the mortgage lending market, the share of mortgage lending held by smaller and non-traditional lenders has remained stable at the same time as the overall volume and value of mortgages has grown substantially. The ability of these lenders to maintain their share of the market during a period of total market growth has probably benefited from the availability of the CMB program.

Lenders that are Approved Sellers also benefit from there being no additional guarantee fee on NHA MBS that are transferred to CHT as replacements when the principal on mortgages in the initial NHA MBS is pre-paid. This has the effect of reducing the effective guarantee fee compared to assembling and selling NHA MBS outside of the CMB program.

Investors

Investors benefit by having access to a bond that carries a government guarantee and an additional spread over GOC bonds. The CMB program was introduced in a period when the supply of GOC bonds was below historical levels as the federal government reined in its deficit, and it provided an opportunity to satisfy demand for a safe, high quality fixed income investment product at a time when there were limited opportunities available within Canada. Compared to NHA MBS, investors are able to buy bullet bonds with known terms and interest flows, as well as a liquid secondary market.

Federal government

As noted under the previous point, the CMB program was introduced at a time when the net supply of GOC bonds was falling and, thus, tapped into strong latent demand for a government guaranteed fixed income investment. The cost and risk considerations associated with the CMB program have to do with whether the cost of the GOC fee, which is intended to address the risk of losses under an extreme outcome, is appropriate. (An "extreme outcome" is defined by CMHC for the purposes of calculating the fee as the risk of default by a financial institution acting as a swap counterparty combined with a stressed decrease in interest rates scenario.) As discussed above, the current GOC fee, of 0.0289% is broadly consistent with the estimate of the risks made by AKA in their assessment of the adequacy of this component of the CMB Guarantee Fee.

Underwriters

CMB issues are sold using a negotiated sale process in which participation and syndicate roles are negotiated between the underwriters and CMHC in its role as FSA. Participation in CMB sales and size of allocation is a function of such considerations as: market coverage/position, quality of issue management, CMB marketing strategies, quality and effectiveness of past CMB performance, secondary trading, and market making capabilities, mortgage origination performance, and extent to which participation by small lenders is facilitated. The expectations concerning facilitation of small lender participation have, in turn, encouraged the development of dealer activity in the aggregator segment of the mortgage market and access to swaps.

Underwriters agree to purchase the full amount of their CMB allocation and accept the risk that they may not be able to re-sell this allocation, for example, if interest rates change after a CMB issuance or if investor demand is not as strong as expected, and thus, have to carry the bonds on their books until sold. Dealers are able to manage their risks by assessing likely levels of demand among investors as part of their pre-selling activities, and they provide feedback to CHT and CMHC regarding expected CMB demand.

8.3 EVALUATION QUESTION 5.3: HOW IS THE COST-EFFECTIVENESS OF THE PROGRAM AFFECTED BY THE MAIN PROGRAM PARAMETERS? WHAT CHANGES, IF ANY, TO THESE PARAMETERS COULD INCREASE THE COST-EFFECTIVENESS OF THE PROGRAM?

Findings

1. The analysis of the CMB guarantee fee prepared for this evaluation was concerned with risks of a default by a swap counterparty and an issuer of ABCP used as replacement assets, and it did not investigate the adequacy of the NHA MBS and operational risks that also fall under the CMB guarantee fee. Further analysis, which goes beyond the scope of this study, would be necessary to determine if the CMB guarantee fee of 0.20% is sufficient to cover all these types of risks. This analysis is currently being carried out internally within CMHC.

2. Underwriting fees have been progressively reduced – from 0.25% of the value of each CMB issue to 0.175% (a 30% reduction) – and appear to be below underwriting rates applied to other sources of funding available to financial institutions. However, there is some possibility that they might be able to be reduced further.

3. The criteria for replacement assets could possibly be modified to facilitate efforts by lenders, particularly small and medium-sized lenders, to meet these requirements. Any changes to the types of replacement assets may also require changes to the guarantee fee.

Discussion

Changes to the guarantee fee

The majority of the participants in the key informant interviewing program were of the view that the CMHC guarantee is critical to the acceptance of CMB issues and that such a fee is viewed as part of the cost of funds from this source. Without the guarantee the CMB would become another asset-backed security (as opposed to being analogous to a GOC bond) and require higher rates of interest to attract a sufficiently large pool of investors.

The analysis of the CMB guarantee fee carried out as part of this evaluation did not investigate its adequacy for covering all the risks it is intended to cover. Further analysis, which is being carried out internally within CMHC, deals with this question, and following that analysis, a determination could be made regarding whether the guarantee fee could be changed.

If the CMB guarantee fee were to be changed, that change could, in turn, have an impact on:

- ***Cost of funding available to approved sellers***. The analysis of funds transfer pricing processes suggests that, even after allowing for the higher costs involved, the CMB program has a substantial cost advantage over the next best option available to approved sellers. As such, the cost of the CMB program to the approved sellers could be increased without significantly altering its attractiveness relative to the next cheapest source of wholesale funds, while recognizing that the program needs to have a clear cost advantage to offset other factors, such as earnings volatility created by the mark-to-market requirements for swap transactions.

- ***Cost to mortgage borrowers.*** An increase in the cost of the guarantee fee would be expected to flow through to mortgage borrowers in some form, which would then affect the affordability of mortgages. The magnitude of any impacts (or rate at which they flow through to borrowers) would also be influenced by other market forces, such as whether interest rates are stable, rising or falling, and the level of competitive intensity in the market.

Changes to the bond underwriting fee

CMHC currently negotiates the terms of each CMB sale with a group of investment dealers, including the rate at which underwriters will be paid for selling their allocated shares of the total issue. Underwriting rates have been progressively reduced – from 25 basis points in 2001 to 17.5 points from December, 2005, a reduction of 30% – as CMB issues have become established in the bond market and issue sizes have increased. As noted earlier, these rates are considerably less than underwriting fees for other types of syndicated bonds, such as, BDN and ABS. At the same time, the amount of underwriting fees paid has had a net increase due to the increasing sizes of CMB issues.

Some non-dealer participants in the interviewing program suggested that, as the unknowns associated with the design and performance of the CMB program have become better known among institutional investors and the typical size of each CMB issue has steadily increased (to over $5 billion in all six issues since the start of 2005), the underwriting fee could also be further reduced below the current rate of 0.175% (17.5 basis points). Any further reduction in underwriting rates would also need to consider potential impacts on the willingness and ability of investment dealers to support the CMB program through the provision of aggregator services for smaller lenders and support for secondary market trading in CMB. In addition, while a reduction in the underwriting rate may have a relatively large impact on the CHT's costs - $500,000 for every 1 basis point reduction on an issue of $5 billion – it would have a very small effect on mortgage rates if the reduction were passed on to mortgage borrowers and uniformly applied across all new or renewed mortgages. Any action to reduce underwriting rates would also have to take into account the prevailing sentiment of fixed income investors at the time of issue and relative ease or difficulty the dealers may have in selling their CMB allocations.[73]

Broader range of replacement assets

Financial institutions that participated in the interviewing program expressed concerns about the limits on the types of assets that are eligible for reinvestment of principal payments and pre-payments, that is, replacement NHA MBS, GOC bonds, asset-backed commercial paper and, more recently, reverse repos. These concerns included the risk that if interest rates change and mortgage borrowers convert from fixed to floating rate mortgages (or vice versa), then the mortgage is considered to be repaid when the conversion occurs, at which point a replacement fixed rate asset must be provided, which may be difficult to find. In these situations, the seller may have to provide a GOC bond as an alternative which results in a negative carry (that is, generates a lower yield than the accompanying CMB liability). The relative significance of replacement assets increases over the life of each CMB issue as an increasing proportion of the underlying mortgages are pre-paid. The challenge of providing sufficient replacement assets in the final year of a CMB issue has, however, been somewhat moderated by the inclusion of repos as eligible investments.

---

[73] CMHC analyzes the appropriate level of underwriting fees on a regular basis.

Many of these interviewees suggested that the eligibility criteria for replacement assets could be loosened without increasing risks to the program, with the most common suggestion being to allow sellers to use CMB as replacement assets or to purchase CMB on the open market and thereby cancel out a portion of the NHA MBS pool. A number of sellers also suggested that the range of mortgages included in NHA MBS pools could be broadened to include non-insured low loan-to-value mortgages without requiring the seller to purchase portfolio insurance.

8.4 EVALUATION QUESTION 5.4: HOW WOULD A CHANGE TO THE METHOD OF BOND ISSUANCE AFFECT THE COST-EFFECTIVENESS OF THE PROGRAM (BOTH THE COSTS/RISKS/REVENUES FOR PROGRAM DELIVERY PARTIES AND THE COSTS/RISKS/BENEFITS OF STAKEHOLDER GROUPS)? WHAT BENEFITS AND COSTS WOULD BE INCREASED/DECREASED WITH A CHANGE TO THE METHOD OF ISSUANCE?

Findings

1. CMB issuance by auction could potentially result in cost savings of up to 4 basis points per year due to the elimination of underwriting fees. Note, however, that the available evidence indicates that syndication is a cost-effective approach to the marketing of CMB issues (see section 8.1).

2. These potential cost savings could be reduced or eliminated as a consequence of risks and uncertainties. The theoretical conditions favouring the use of auctions appear to be present: the program is well-established, the issuer is well known, information gathering requirements are low, and there is a predictable and stable pool of bidders. However, a change to an auction method would carry risks: increased uncertainty around the size and/or pricing of issues, reduced opportunities for CMHC to influence the facilitation of small lender participation by investment dealers, and possibly a lower level of primary and secondary market support by investment dealers.

Discussion

Use of a competitive auction process to market CMB issues may provide an alternative way of marketing CMB issues and be more cost-effective than the current process of negotiating the terms of the sale with a pre-selected underwriting syndicate.[74] Two possible approaches to the use of auctions have been suggested:

- CMB issuance by auction rather than syndication.
- Centralization of bond issuance with the issuance of GOC bonds.

---

[74] If syndication is maintained, some small and large dealers suggested using a “pot system” for syndication to improve transparency during the issuance process.

In either case, savings may be achieved by eliminating the underwriting fees, of up to about four basis points per year (at the current underwriting rate of 17.5 basis points over five years). Note that the rate for underwriting fees has fallen over the life of the program, but the total fees paid have risen as issue size has grown.

Participants in the interviews of market participants suggested a number of potential risks and costs that may arise if an auction process were used for CMB issuance:

- ***Uncertainty of funding size or cost.*** Syndication fees compensate investment dealers for finding new investors to purchase an increasing volume of CMB, managing the order book, and standing ready to hold unsold bonds on their books. CMHC gathers information regarding the amount of mortgage funding desired by issuers, and solicits input from dealers who reflect their perception of investor interest. Issue size and spread are set at levels that are anticipated to clear the market, and dealers bear the risk of unsold bonds. In an auction process, if supply of mortgages by issuers exceeds demand for CMB, two outcomes are possible: CMB could remain unsold, or spreads could widen. Unsold bonds results in CMHC making a decision about which issuers are cut back, and NHA MBS remain on approved sellers' balance sheets, requiring alternative funding. Alternatively, the spreads could widen sufficiently to place the intended issue amount. This could result in a higher cost of funding that may reduce, or eliminate, any benefits of the auction process (i.e. absence of syndication fees). Issuers stated in interviews that they desire as much certainty as possible regarding obtaining funding, while spread is the secondary consideration since CMB funding cost is most likely lower than the next best alternative.

- ***Significance of CMB issues.*** Recent CMB issues have exceeded $8 billion and all six issues since the start of 2006 have exceeded $5 billion, which are larger issue sizes than any recent Canadian government bond auctions. Some investors interviewed, and most investment dealers, were concerned that auctions of issues of this size may not be able to reliably clear the market as efficiently as the current syndication process. Some interviewees perceived that marketing effort by dealers may still be an important determinant of investor demand since issue sizes are increasing, while others disagreed.

- ***Sovereign versus agency.*** Bonds are typically issued via auctions by sovereign governments, while agencies, such as CHT, typically issue bonds by syndication. There are few, if any, international examples of agencies undertaking auction processes. However, most interviewees did not see this as necessarily meaning issuance by auction should be ignored.

- ***Investment dealer behaviour.*** In its role as FSA, CMHC evaluates the performance of investment dealers and the performance of these financial institutions as approved sellers, and awards better syndicate positions/shares to those that most actively support the achievement of the CMB program goals. With an auction process, it would not be possible to align incentives for the investment dealers so directly with the achievement of the program goals, thereby reducing the ability of CMHC to facilitate participation by small lenders in the program. It is also possible that some investment dealers could withdraw from bidding at auction on CMB issues if they felt that their related revenues were

insufficiently attractive (although that would enable existing dealers to expand and new dealers to enter without negative impacts on the CMB program).

- ***Secondary market support.*** Without syndication fees, investment dealers may be inclined to reduce their level of secondary market support for CMB issues since they are currently incented to provide secondary market support through the syndication criteria used by CMHC. Investors and some dealers who were interviewed noted, however, that the same arguments were made when the auction process for GOC bonds was established, but ultimately, investor demand for secondary market liquidity in GOC bonds has generated an active market with tight bid/ask spreads. Client demand for CMB liquidity might be expected to produce a similar outcome regardless of the issuance process.

The literature review also identified research on the conditions that would favour the use of an auction process over syndication:

- One of the papers reviewed noted that the purpose of U.S. Treasury bond auctions was to provide the lowest cost financing needs of the U.S. government. A direct way to generate low cost was to promote competition in the bidding and indirectly to promote a liquid secondary post auction market for new issues.

- Researchers noted that auctions will be successful when information gathering regarding the issuer and the security is not necessary and when auctions for the same type of security are held regularly so that the pool of participants is stable.

- The conditions under which auctions are likely to be unreliable include situations where information gathering and price discovery is important (and costly), where the number of bidders varies unpredictably, and where a large number of bidders may try to free ride on the information gathering efforts of others. A key issue in the success of auctions, then, is the availability of information and the cost of information acquisition.

The interview findings suggest that the market for mortgage-related products likely suffered from a lack of transparent information during its initial establishment and start-up, but this is less likely now. However, some potential cost savings from the elimination of underwriting fees may be offset by the uncertainty of issue size (which is undesirable for MBS issuers) and the funding cost may differ with an auction process. An auction process may also lead to less liquidity or wider bid/ask spreads in the secondary market, or may have no impact in this regard. The potential magnitude of these impacts cannot be estimated since the impact is speculative.

The second possible change to the CMB issuance process is to centralize issuance with GOC bond issuance, which would result in a *de facto* form of CMB auction[75]. This approach would offer potential savings in two areas: elimination of the spread between CMB and GOC bond yields plus the elimination of underwriting fees (before any fees that the GOC may choose to

---

[75] Alternatively, one could view this arrangement as a syndicate with only one dealer, depending on how the arrangement were structured and the associated fees and rates.

apply for providing this service). These cost savings would need to be balanced against the same risks posed by a direct auction of CMB issues, namely uncertainty about issue size and funding costs. Furthermore, centralized issuance would mean that the Government of Canada would no longer be only providing a guarantee, but would be issuing government debt for the purchase of MBS pools or CMB bonds (if CHT remains in place and issues debt to the government, which then issues to the public).

9.0 SUMMARY OF KEY FINDINGS

This section consolidates the key findings from Sections 4 to 8, summarizes the overall conclusions of the evaluation and the effects of recent changes in market conditions, and identifies potential areas for future research.

9.1 RATIONALE FOR CMB PROGRAM

- The CMB program is consistent with CMHC's mandate. It specifically addresses three elements of CMHC's mandate for housing finance.

- The program design is consistent with Government of Canada objectives laid out in the 1996 federal legislation which placed CMHC's securitization programs on a commercial basis.

- The rationale for the CMB program, i.e., the reasons the program was considered necessary, was three-fold, namely to:

  - improve residential mortgage securitization tools in Canada, and, in particular, to overcome the limitations of the NHA MBS product;
  - promote competition in the mortgage market; and
  - ensure an adequate supply of low-cost mortgage funds to financial institutions.

- These three needs formed a valid rationale for the CMB program at the time of its inception.

- Canada has a significant degree of government involvement in mortgage markets through enabling legislation, regulation and active intervention. Research indicated that the United States has the highest degree of government involvement. Other comparable countries such as Australia and the UK have limited their involvement to enablement.

- Because of the evolution of the capital market financing environment, the rationale for the program based on the need for the government to provide securitization vehicles was less relevant at the end of 2006 than at program inception because (a) securitization has become better understood and accepted by investors and (b) FIs are better able to understand and manage securitization vehicles and, therefore, to develop them on their own.

- The competition rationale and the related low-cost funds rationale are still valid, because of the continued need for support for smaller FIs.

- The issuance of government guaranteed bonds was the most obvious way of dealing with the low acceptance of MBS by Canadian investors.

- The use of a special purpose bond issue by an organization that is at arms length from the government (CHT) was due to the need to avoid the direct funding of mortgages by the

government. The specific features of this structure were designed to transfer the interest rate risk back to the MBS originators/swap counterparties. The rationale for this is still valid.

- The use of a syndication method by CHT was the best and most feasible way of issuing the bonds at the time. The rationale for this may not be as strong today, because the CMB program currently meets the criteria identified in the literature for an auction process to be efficient. However, there are many factors that are relevant to the choice of the method of bond issuance that would need to be assessed if a change to an auction method were contemplated.

- It was clear at the outset that the program would result in a significant cost of funds advantage for mortgage lenders. It was also clear that the program's impact on mortgage rates for the average borrower would be on the order of a few basis points. It was reasonable to expect that the increased availability of low-cost funds to smaller lenders could increase their participation in the mortgage market.

9.2 IMPACT ON MORTGAGE FUNDING AND BORROWING COSTS

- The cost of funds obtained by the big five banks through the CMB program during the study period has averaged about 18 basis points less than the cost of their cheapest alternative source of long-term wholesale funds.

- The question of the cost of funds advantage of the CMB program compared with the cost of the funds the big five banks might have accessed (hypothetically) if the program had not existed, is difficult to quantify.

- The smaller lenders have probably experienced a smaller cost of funds advantage than the big five banks.

- The program has had a negligible impact on the availability of funds to the big five banks, although, the funds they would have accessed in the absence of the CMB program would have been more expensive.

- The CMB has had a significant impact on the availability of funds to the smaller lenders that rely on aggregators and institutional investors to purchase mortgages, because the aggregators and institutions could not have easily replaced CMB as a source of funding.

- The main other benefit lenders obtain from participation in the program is that it enables them to relatively easily and regularly monetize a portion of their mortgage portfolio.

- Some of the big five banks explicitly pass on the CMB cost of funds advantage to their mortgage departments by way of their internal pricing of funds that are used for mortgages; others also factor the cost of funds advantage into mortgage pricing considerations .
- Given this finding and the fact that the mortgage market has been highly competitive during the study period, it is reasonable to conclude that a large percentage of the cost of funds

advantage has likely been passed on to mortgage borrowers.

- The interviews of FIs indicated that the mortgage rate reduction impact was not constant across all borrowers. Typically, it was suggested that the main beneficiaries of the rate reduction impact were preferred branch customers, generally in urban areas, obtaining new (as opposed to renewal) five-year mortgages who negotiated with their lender or shopped carefully in the broker market. The rate reduction for this group of borrowers may have been in the range of five to 10 basis points, which is several basis points higher than the rate reduction experienced by the average borrower.

- A significant impact on mortgage rates during the study period is not evident from quantitative analyses of mortgage rate data, but this was to be expected given the inevitable small impact of the program on mortgage rates for the average borrower.

- An upper bound estimate of total savings to mortgage borrowers over the study period due to the CMB program is $426 million. At the December 2006 level of CMB outstanding ($96 billion), the annualized savings to borrowers could be up to $174 million.

- The CMB program has had very little impact on new mortgage product development.

9.3 IMPACT ON COMPETITIVENESS

- The big five banks are by far the major users of CMB funding. However, the smaller lenders have been able to access CMB funding (mainly through the aggregators) to a much greater extent in the last two years than in the early years of the program.

- Mortgage approvals by smaller lenders increased from approximately $11 billion per year in the pre-program period to over $24 billion per year during the study period, and the smaller lenders maintained their share of a rapidly growing market during the study period. The availability of CMB funding was probably a factor in enabling them to do this.

- The CMB program has supported the entry/expansion of smaller lenders because of its role in facilitating funding for mortgages by purchasing mortgages from them (mainly through aggregators and institutional investors). Funding to smaller lenders would probably have been more constrained in the absence of CMB funding. The program has also indirectly facilitated market access for smaller lenders due to its [indirect] support for the growth of the broker channel.

- Many smaller lenders do not have the expertise to deal with some of the complexities of securitization strategies and/or they do not have the capacity or business model to deal with some of the program requirements, particularly requirements related to replacement assets.

- Mortgage rates are driven mainly by the big banks. Smaller lenders generally use methods such as new product development and broker compensation models to gain market share rather than undercutting rates. However, to the extent that rates were pushed downward

by the broker channel, the CMB program may have had an impact, since the program likely facilitated the growth of the broker channel.

- The competitiveness of the primary mortgage market has increased greatly since 2001. Although the CMB program was not among the factors that directly contributed to increased competitiveness, it may have had an indirect impact on the competitive environment due to the support it provided for small lender funding and the fact that small lender activity was a significant factor in the growth of the broker channel.

9.4 IMPACT ON CAPITAL MARKETS

- In the context of capital markets, the CMB program is very large and dominates the short end of the Canadian government bond market.
- CMBs have filled investor demand for high quality bonds as GOC issuance has fallen.
- CMBs serve to satisfy the demand for high quality bonds, and this is their main impact on the bond market.
- Other impacts are more subtle and are not significant. In particular, there is no significant bond market disruption due to the large issue size of CMBs.
- Because of the attractiveness of CMBs compared to other forms of borrowing, CMBs have substituted, to some extent, for corporate bond issuance and private securitization issuance by participating financial institutions
- There has been no noticeable impact of Canada Mortgage Bonds on the GOC yield curve.
- GOC bonds are more actively traded and more liquid than CMBs, but CMBs themselves are highly liquid.
- The CMB program dramatically increased NHA MBS issuance volumes by creating a buyer for MBS pools, but other (non-CMB) secondary market activity in MBS has been minimal.
- Thus far CMB replacement assets have not created any market disruptions.
- CMB issuance has not had a significant impact on swap rates.

9.5 COST-EFFECTIVENESS OF THE CMB PROGRAM

Note that the analysis of cost-effectiveness was based largely on findings related to the other evaluation issues, so some of the points below repeat points from earlier sub-sections of section 9.

- A mix of methods is in place to align and balance costs, revenues and risks while providing incentives for participating financial institutions, intermediaries, and investment dealers to facilitate participation by lenders, maximize take-up of CMB issues, and ensure investors receive timely payments.

- Interest risk created by the design of CMB (converting a varying flow of interest and principal payments into a stream of constant payments of CMB interest) is carried by swap counterparties (who are often the same entities as the respective originators). Counterparties retain interest earned in excess of CMB interest payments (net of CHT administration and operation costs) as compensation for carrying this risk.

- The CMB guarantee fee of 0.20% is intended to cover two categories of risks:

  - risks associated with the timely payment to CHT of interest and principal on its holdings of NHA MBS; and
  - any additional risks associated with the timely payment of interest and principal to CMB investors, primarily the risk of default by swap counterparties and the risk of default by ABCP issuers (when high quality ABCP are used as replacement assets).

  The evaluation study found that the risks in the latter category could be as high as 0.047% at current interest rates. The risks in the former category were not analyzed as part of this study; they are currently being analyzed internally within CMHC.

- The program has resulted in net revenues to the government —based on guarantee fees earned and the revenues and expenses associated with CMHC's role as Financial Services Advisor – of approximately $79 million through the end of 2006 on total issuance of $97.6 billion. (Net revenues in 2006 were $31 million.)

- The introduction of the CMB program has reduced the cost of funds to financial institutions and a substantial proportion of this funding advantage has likely been passed on to borrowers, as competition for market share amongst mortgage lenders has intensified.

- Lenders have used CMB to increase the rate of mortgage securitization and reduce their costs-of-funds, compared to alternative funding sources, such as Bankers Deposit Notes. This cost of funds advantage to the big banks has been on the order of 18 basis points.

- The CMB cost-of-funds advantage for smaller lenders compared to their next cheapest sources of funds has been similar, although probably less than for the big banks. The complexity of the CMB program also poses challenges for smaller lenders, with most reporting difficulties with the replacement asset requirements.

- CMHC currently pays a GOC fee on each CMB issue to cover the risk of losses under extreme economic conditions, which is currently set at 0.0289% and amortized over the life of each issue.

- The analysis of the CMB guarantee fee prepared for this evaluation was concerned with risks of a default by a swap counterparty and an issuer of ABCP used as replacement assets, and it did not investigate the adequacy of the NHA MBS and operational risks that also fall under the CMB guarantee fee. Further analysis, which goes beyond the scope of this study, would be necessary to determine if the CMB guarantee fee of 0.20% is sufficient to cover all these types of risks. This analysis is currently being carried out internally within CMHC.

- Underwriting fees have been progressively reduced – from 0.25% of the value of each CMB issue to 0.175% (a 30% reduction) – and appear to be below underwriting rates applied to other sources of funding available to financial institutions. However, there is some possibility that they might be able to be reduced further.

- The criteria for replacement assets could possibly be modified to facilitate efforts by lenders, particularly small and medium-sized lenders, to meet these requirements. Any changes to the types of replacement assets may also require changes to the guarantee fee.

- CMB issuance by auction could potentially result in cost savings of up to 4 basis points per year due to the elimination of underwriting fees. Note, however, that the available evidence indicates that syndication is a cost-effective approach to the marketing of CMB issues.

- These potential cost savings could be reduced or eliminated as a consequence of risks and uncertainties. The theoretical conditions favouring the use of auctions appear to be present: the program is well-established, the issuer is well known, information gathering requirements are low, and there is a predictable and stable pool of bidders. However, a change to an auction method would carry risks: increased uncertainty around the size and/or pricing of issues, reduced opportunities for CMHC to influence the facilitation of small lender participation by investment dealers, and possibly a lower level of primary and secondary market support by investment dealers.

9.6 CONCLUSIONS

Based on the evaluation study time period (2001-2006), the evaluation found that much of the original rationale for the program is still valid and that the objectives have been met. The main impacts of the program have been as follows:

- It has provided lower cost mortgage funding to financial institutions.

- It has resulted in savings to mortgage borrowers as a result of the pass through by financial institutions of a large percentage of this cost of funds advantage.

- It has increased the availability of mortgage funding to smaller lenders, and this was probably a factor in enabling them to maintain their share of a rapidly growing market leading to more than doubling their annual volumes of mortgage approvals during the study period.

- It has provided a mechanism to access capital markets for residential mortgage funding and has helped to meet investor demand for high quality bonds.

9.7 RECENT CHANGES IN MARKET CONDITIONS

During the course of the evaluation, and since the summer of 2007, financial markets in Canada and elsewhere have undergone (and are still undergoing) some major changes. Following the completion of the evaluation, three of the senior members of the evaluation study team prepared an addendum to the evaluation that describes how the findings of the evaluation would likely be different if it were based on today's conditions rather than the 2001-06 period. This addendum is a discussion paper, not a study, and these points are not based on the same level of data collection and analysis as the evaluation. The key points in the addendum (Annex C) are as follows:

- The cost of funds advantage of the CMB program has increased significantly since the evaluation study period.

- The program has played a stabilizing role in Canadian mortgage markets since the Fall of 2007 by providing a reliable funding source, and this has been particularly important for smaller lenders who have fewer alternatives in this environment compared to big five banks.

- Demand for CMB funding has increased from all lenders, while issue size has stabilized, so the allocation process to provide funding to financial institutions has become an important factor in supporting and potentially influencing competition among lenders.

- Mortgage spreads (relative to Government of Canada bonds) have widened, permitting new or expanded entrance into prime mortgage lending at profitable margins compared to pre-August, 2007, levels.

- Through its support for smaller lenders, the CMB program has enhanced the competitiveness of the mortgage market, and some smaller lenders have been price leaders in parts of the mortgage market in recent months, gradually reducing mortgage rates overall.

9.8 FUTURE RESEARCH

The CMB Evaluation was a comprehensive and in-depth study of the CMB Program to assess its impacts over the first five years of its operation. The evaluation identified a number of topics that were beyond the scope of this study but where future research may help improve understanding of housing finance vehicles and policy options. These include items such as: benefits and challenges related to continuing with the program as designed, government securitization policies in relation to changes in economic cycles over time, mortgage-backed

securities vehicles and other private financial mechanisms (including mortgage covered bonds) and the implications for government policies, analysis of actual mortgage interest rates for borrowers on new and renewing mortgages and in different segments of the markets, analysis of the various roles and relationships of smaller financial institutions in the structure of the Canadian mortgage market, and the use and structure of government guarantees in securitization and other policy areas. Further research in these types of areas could be beneficial for any future evaluation studies of mortgage securitization programs.

ANNEX A

GLOSSARY OF TERMS

This Glossary defines terms in this Report grouped alphabetically into 3 sections:

1. Types of Mortgages
3. Residential Mortgage Market
3. Capital Markets

A.1 TYPES OF MORTGAGES

Fixed rate, Variable rate ("VRMs") & Adjustable ("ARMs") rate mortgages are types of mortgages depending on how the mortgage interest is calculated:

- *Fixed rate mortgages* have interest rates and payments that stay the same for a number of years (currently 5 years is the most common). *VRMs* have interest rates that change with market rates but the payments stay the same. *ARMs* have floating interest rates and the payment changes as the rate changes.

Insured mortgages guarantee repayment of a mortgage to the lender if the borrower defaults. Borrowers with mortgages exceeding an 80% loan-to-value ratio must purchase **mortgage insurance** from either CMHC (NHA insurance) or from private insurers. Insurers also provide **'portfolio insurance'** that lenders can purchase on a group of mortgages without borrower default insurance.

Posted rates are the interest rates advertised for mortgages of various types and terms. Lenders commonly offer discounts (lower rates) to borrowers, and recently discounts often exceeded 100 basis points for 5 year mortgages. **Broker rates** are the interest rates provided by major lenders to mortgage brokers and are generally lower than posted rates. **Actual rates** are the interest rates on individual mortgages for individual mortgage borrowers.

Prime, Alt-A (or Near Prime), Sub-Prime and HELOCs are classifications of lending practices depending on borrowers' credit ratings and assets: *Prime* mortgages have the 'best' rates and are given to borrowers with good credit ratings, those with provable income and when mortgage payments fall within acceptable debt service levels. *Alt-A* mortgages have higher interest rates than 'prime' and are given to borrowers with good credit ratings but unverifiable income (e.g. self-employed, immigrants, commission sales people). *Sub-Prime* mortgages are given to borrowers with lower credit ratings (currently about 5% of mortgages in Canada are Sub-Prime versus over 20% in the US). *Home-Equity Lines of Credit (HELOCs)* are mortgages secured against equity in a home that provide a maximum credit line up to a percentage of the value with a fixed rate amortizing loan portion and a revolving floating line of credit.

Mortgage Securities are structured investments that use pools (i.e. groups) of assets (i.e. mortgages and the cash flows from the mortgages) as collateral to raise funding from capital markets (i.e. investors) to finance other lending. Pooling of a large number of assets lowers the risk for investors, making the investment more secure and higher quality than individual mortgages. In addition, credit enhancements on the securities (including mortgage insurance and guarantees) can further improve the quality of the investments and give them higher credit ratings by the rating agencies (i.e. the rating is based on the quality of the assets rather than the rating of the financial institution issuing the securities). The higher ratings mean that the rate of return on the securities for investors is higher than unsecured debt issued by the banks, and the cost of funds for the issuer (e.g. the banks) is lower (i.e. narrower spread to the Government of Canada bond rate which is the most secure form of investment and has the lowest rate). As a result, mortgage securities provide access to capital at a lower cost for lenders than their other sources of funding.

There are two basic types of mortgage securities depending on how the payments to investors are structured:

- 'pass-through' securities (such as mortgage-backed securities (MBS)) in which investors are paid a stream of interest and principal repayments (e.g. monthly). Examples of MBS are NHA MBS (that carry a CMHC guarantee), and private MBS (issued by financial institutions without a government guarantee but may carry a guarantee by a private institution); and,

- 'pay-through' securities such as bonds in which investors are paid a coupon amount (i.e. periodic payments such as semi-annual interest, and the principal is paid at the end of the term). Bonds convert the stream of returns from an amortizing asset (such as mortgages) into a more attractive form of investment and pay higher rates of return to investors, and generally have higher ratings and lower cost of funds for housing finance than mortgage-backed securities. Examples of bonds are CMB (with a government guarantee), and private mortgage bonds and covered mortgage bonds (issued by financial institutions without a government guarantee).

All types of mortgage securities are regulated by government regulatory agencies (including OFSI) and subject to legislative requirement (such as the Bank Act and the Canada Interest Act). These provisions govern the financial sector's operations including regulatory capital requirements that institutions must hold on their balance sheets to protect against default on their assets. Higher quality assets require lower amount of capital to be held, and assets guaranteed by the Government of Canada (such as Government of Canada bonds, NHA MBS and CMB) require no capital (i.e. provide 'capital relief' to the institutions). Certain assets (such as NHA MBS and CMB) can be used as collateral in the Bank of Canada's Large Value Transfer System (LVTS) with only a slightly higher rate than Government of Canada bonds. NHA MBS and CMB can also be used as collateral in the market for short term borrowing by investment dealers (called the Repo Market) at only a slightly higher rate than for Government of Canada bonds.

Therefore, mortgage securities have advantages for investors and for financial institutions (i.e. lenders) compared with other sources of funding for housing finance, and these in turn can provide benefits to mortgage borrowers. These include:

- For investors, the securities are lower risk investments because of the packaging (i.e. pooling) of a large number of assets (i.e. diversification).

- For lenders, the credit enhancements for the securities result in higher credit ratings of the securities than for other forms of financing so that the cost of funds is lower than the issuers' regular credit rating by the rating agencies. Therefore, securities provide a lower cost of funds than the issuer's alternative funding sources.

- For smaller lenders, securitization enhances their ability to compete in the primary market because it provides access to a lower cost of funds than their other funding sources. With securities, the credit rating by rating agencies is based on the quality of the assets rather than on the rating of the issuing financial institution because the assets are bankruptcy remote. Since ratings of institutions is based on the size (or capitalization) of the institution, smaller lenders can access lower cost of funds with securities than with their alternative funding sources even though their costs of funds through these vehicles may be slightly higher than the costs of these funds for larger lenders (due to liquidity, issue size, or other costs of accessing the funds).

- For lenders, securities are a form of off-balance sheet financing because the underlying assets are 'sold' in exchange for the securities. This provides additional leverage for lenders, freeing up balance sheet capacity to expand their loan origination business.

- Mortgage borrowers can benefit from the lower cost of mortgage financing for lenders through lower mortgage borrowing costs. In addition, by creating a reliable supply of funding for mortgage lending, securitization improves the availability of mortgage credit for borrowers seeking to purchase a home or refinance an existing mortgage.

Types of Mortgage Securities: As well as CMB, there are the following other types:

- **NHA Mortgage-Backed Securities (NHA MBS**) are securities issued on pools of mortgages in which the mortgage payments (i.e. monthly interest and amortizing principal repayments) are paid (i.e. passed-through) to investors. NHA MBS have two forms of credit enhancement: first, all the mortgages in the pools are insured (through either borrower mortgage insurance or portfolio insurance from NHA or private insurance), and, secondly, CMHC provides a timely payment guarantee to investors (i.e. guaranteeing the monthly interest and principal owed to investors). These enhancements result in a higher credit rating of the securities and a lower cost of funds to lenders.

- **Private lender Mortgage-Backed Securities** are MBS securities issued by private lenders. They have the same pass-through features as NHA MBS, and may be 'guaranteed' by the private lenders to provide a credit enhancement.

- **Private Mortgage Bonds** are securities issued by private lenders on pools of mortgages where the bonds are not guaranteed by CMHC, and the underlying mortgages may or may not be insured. They may include other private credit enhancements to increase the credit quality and rating of the securities. These may be structured as pass-through securities (like MBS) or to pay out semi-annual amounts ('coupons') or other desirable cash flow patterns. The bonds have a maturity of more than one year (which distinguishes them from short-term funding with ABCP). They are off-balance sheet (which distinguishes them from covered mortgage bonds) and provide leverage benefits to lending institutions.

- **Asset-Backed Commercial Paper (ABCP)** are short-term securities (less than one year) issued by private institutions on pools of various types of assets (including mortgages) with varying terms. Enhancements (such as over collateralization and excess spread) and liquidity backstops provided by large lenders can enhance the rating and lower funding cost with this vehicle. Recent market turmoil has hit this market with some issuers of ABCP being unable to refinance their issues.

- **Covered Mortgage Bonds (COMBs)** are bonds issued by private institutions on pools of mortgages that are held on the balance sheets of the lending institutions. Investors have access to both the cash flows generated by the mortgages and the underlying assets (i.e. the mortgages) as well as the assets of the issuer in the event that the underlying assets are insufficient. COMBs effectively segregate a portion of the issuers' assets to be used to first satisfy the investor in the event of financial shortfalls. COMBs have existed for a long time and are used in many European countries and the US (with various legal and regulatory frameworks). In June 2007, OFSI approved Canadian financial institutions to issue COMBs in limited quantity. However, small lenders that do not meet the criteria for financial institutions in Canada cannot issue COMBs.

Types of Risks to Mortgage Lenders - Commitment Risk, Interest Rate Risk & Prepayment Risk: *Commitment (or pipeline) risk* can occur if interest rates fall after they have approved a mortgage at a certain rate and guaranteed it to the borrower for some time period (typically 1-3 months). I*nterest rate risk* can occur if interest rates rise and the value of existing fixed rate mortgages declines (or borrowers prepay). P*repayment risk* can occur if borrowers prepay all or some part of existing mortgage principal. In most fixed rate mortgages, borrowers have the right to make additional (e.g. annual) principal payments without penalty, and may prepay other amounts subject to a penalty charge (under Canadian law the maximum penalty is 3 months' interest for a mortgage with a term longer than 5 years). Prepayment risk is much lower in Canada than in the US because in the US there is no penalty for prepayment and mortgages typically have longer terms (e.g. 30 years).

A.2 RESIDENTIAL MORTGAGE MARKET

Aggregators provide wholesale mortgage funding to other mortgage lenders. They are approved sellers into the CMB and may originate mortgages themselves but also purchase mortgages from other lenders and sell these mortgages into the CMB each quarter. They may manage the pipeline and interest rate risk themselves or the mortgage originator may retain and manage some of these risks. The most active aggregators are investment dealers.

Big Five Banks: the five largest Canadian financial institutions: Bank of Montreal, CIBC, Royal Bank of Canada, Scotiabank, and Toronto Dominion Bank.

Central Credit Unions provide wholesale funding for their affiliated credit unions. They may hold mortgages purchased on their balance sheets or use securitization vehicles including CMB (several are approved sellers into the CMB).

Credit Unions and Caisses Populaires: small deposit taking institutions that are owned by their members. There are 8 larger credit union centrals and one federation of caisses populaires. Most credit unions are shareholders in one of the credit union centrals. Individual credit unions are provincially regulated, and the centrals are federally regulated.

Financial Institutions (FIs) include banks, credit unions, trust and loan companies that are deposit taking institutions and regulated as such.

Institutional Investors provide wholesale mortgage funding and include domestic and foreign banks, insurance companies and pension funds. They may not have a retail channel for mortgage lending or wish to expand their market share. They often have agreements with mortgage lenders for whole loan purchase (i.e. purchase the mortgage at commitment or at time of lending). They may also buy portfolios of mortgages periodically. They may retain the mortgages on their balance sheets or securitize using CMB.

Monoline Lenders are companies with a primary focus on mortgage lending to borrowers (but may have some commercial mortgage or other business lines). They typically have a particular niche (defined by property type such as single family or multi-family lending) or by channel (such as on-line marketing or by offering mortgage brokers a unique commission structure). Some may be affiliated with other small regulated financial institutions to sell mortgages into the CMB.

Mortgage Brokers are parties that are not affiliated with any specific lender and provide services to borrowers to obtain a mortgage from various lenders. Brokers are paid by commission.

Mortgage Funding is the financing used by mortgage lenders to lend to borrowers. For deposit-taking institutions, the cheapest source of funding is retail deposits (i.e. money that clients place with the institution in cheques and savings account, and term deposits, such as guaranteed investment certificates (GICs). The growth of mutual funds in the last 2 decades has led to declining retail deposits, and lenders have to access other sources of funding for their lending (i.e. the *wholesale funding gap* between retail deposits and total funding requirements). For large FIs, the wholesale funding gap is met with a combination of short- and long-term funding in the domestic and global capital markets (such as CMB, bank deposit notes, subordinated debt, securitization and ABCP using various assets such as mortgages, credit card receivables, and HELOCs). Smaller lenders have limited access to these sources, and use *whole loan sales* (made at time of commitment to eliminate pipeline risk, or at time of mortgage lending which eliminates interest rate risk).

Mortgage Lenders are institutions that provide funds to borrowers to purchase a home or refinance an existing mortgage. Mortgage lenders include: the Big 5 banks, credit unions and caisses populaires, other financial institutions, and monoline lenders.

Mortgage Servicing is the collection of payments from borrowers, communication with borrowers, accounting and default management. Most mortgage lenders perform their own mortgage servicing, but some outsource this function to third party mortgage servicers.

Mortgage Specialists are employees of a financial institution who are part of the branch network (branches of the institution), and who work off-site with other organizations (e.g. homebuilders, real estate agents, lawyers) to source mortgages for their own FI. They are paid by commission and some are also on salary.

OFSI is the Office of the Superintendent of Financial Institutions, the federal regulatory body of Canadian financial institutions which regulates how lenders manage their balance sheets and finance their mortgage portfolios. Individual credit unions are provincially regulated, but central credit unions are regulated by OFSI.

Other Financial Institutions include the medium and smaller-sized Canadian banks, subsidiaries of foreign banks, independent trust companies, and other institutions that are not credit unions. Many offer a full line of banking services, while others have mortgage businesses similar to monoline lenders (except that they fund their mortgages through deposits).

Wholesale Funding Gap (see Mortgage Funding above): Sources of Wholesale Funding include: central credit unions, institutional investors and aggregators.

Whole Loan Sales (see Mortgage Funding above)

A.3 CAPITAL MARKETS

Capital Markets: The market for securities where governments and companies can raise short and long term funds from investors. New securities are issued through investment dealers in the **Primary Capital Market** and traded in the **Secondary Capital Market**. Mortgage related assets are issued and traded in the bond market, which is an over-the-counter market i.e. there is no central exchange.

Capital Relief: The benefit that some assets classes have for FIs since they reduce the regulatory capital requirement to protect the FI against default of these assets. The higher the credit quality of the asset, the lower the amount of capital required. Government of Canada bonds and guaranteed assets, such as NHA MBS and CMB, require no capital.

Investment Dealers (or "Dealers"): Their primary business is to help companies and governments and their agencies to raise money by issuing and selling securities (equity and debt) in the primary capital market. Investment dealers also provide other financial services for their clients, and may act as intermediaries or market-makers in trading (buying and selling securities) for clients or on their own account in the secondary capital market.

LVTS: The Large Value Transfer System is the Bank of Canada's daily clearing and settlement mechanism. Certain assets are eligible for use as collateral in this system, which includes NHA MBS and CMB[76]. The amount of collateral required is slightly higher for NHA MBS and CMB compared to Government of Canada Bonds, which is referred to as a "haircut".

Liquidity: Generally refers to the ability to buy or sell assets within a short time period without affecting the asset's price, or the ability to convert an asset into cash quickly. When FIs hold raw mortgages, their liquidity in the secondary mortgage market is generally limited to whole loan sales. However, when they are insured and pooled into NHA MBS, they become more liquid since they may be used as collateral in LVTS and repo markets without taking them off balance sheet. They have the additional benefit of capital relief.

Repo Market: The market for short term borrowing for dealers in government securities. NHA MBS and CMB may be used as collateral in the repo market, but the cost is generally about approximately 1 basis point higher than for Government of Canada Bonds.

[76] http://www.bankofcanada.ca/en/pdf/cf_expand.pdf

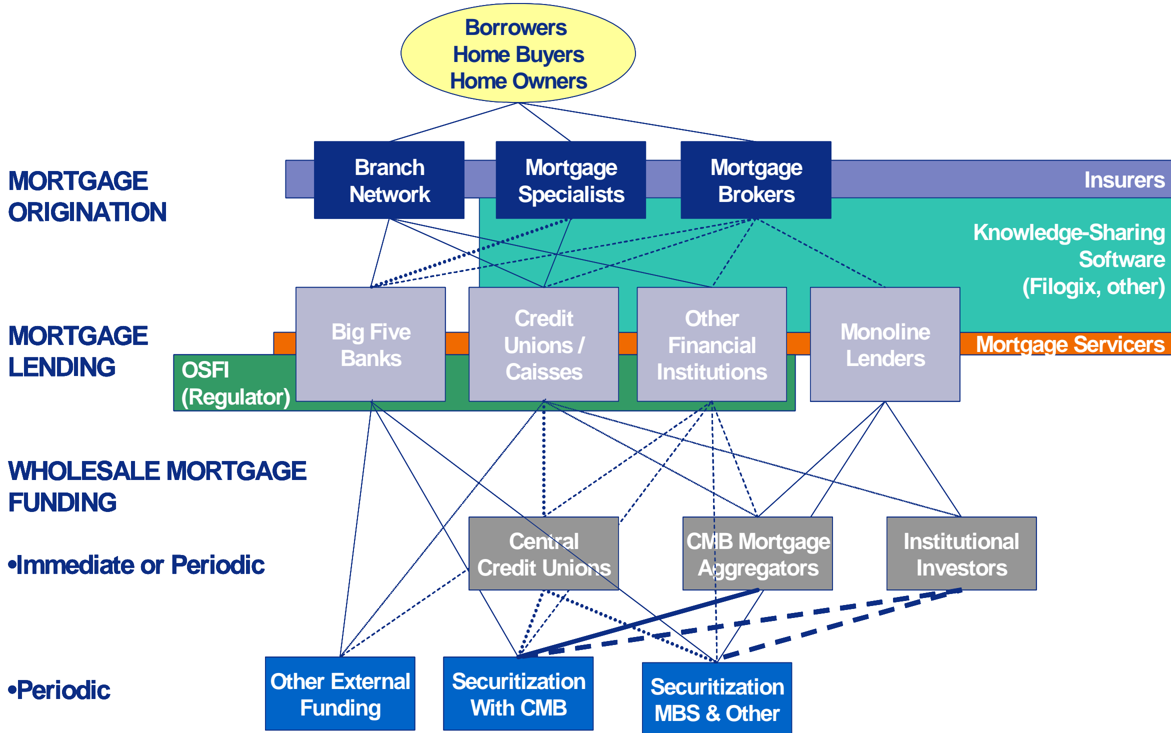
ANNEX B

BACKGROUND ON THE STRUCTURE OF THE CANADIAN RESIDENTIAL MORTGAGE MARKET

B.1 RESIDENTIAL MORTGAGE MARKET INSTITUTIONS

The exhibit below illustrates the types of institutions in the residential mortgage markets and their roles in mortgage origination, mortgage lending, and wholesale mortgage funding, as well as linkages among the various channels and to securitization with the CMB, MBS and other mechanisms. It illustrates the roles played by intermediaries (including credit union centrals, aggregators and institutional investors) as channels for smaller lenders to access to securitization under the CMB. (See Annex A for definition of terms and discussion of the roles of these institutions.)

Canadian Residential Mortgage Market Institutions



B.2 LENDER BUSINESS MODELS AND MEASURING PROFITABILITY

A variety of business models are used in the Canadian residential mortgage markets, linking mortgage origination and funding. Profitability measurement is particularly complex for the Big Five Banks and for other large FIs. Understanding this process is an important part of assessing the impact of the CMB cost of funds advantage on consumer mortgage rates.

Big Five Banks and other large Banks:

In order to achieve an acceptable level of profitability, mortgage prices are set relative to all the costs of operating the mortgage business, including the cost of funding, hedging, originating, and servicing.

Market conditions and targets for volume and market share are also considered. Low rates may lead to increased volumes but may result in substantially reduced profitability in this thin margin business. Large banks use the following concepts to establish mortgage prices and to assess profitability of their mortgage business.

- **FTP Rate**: Large banks measure the spread of each retail lending and deposit product as the external customer rate relative to its internal Funds Transfer Price ("FTP") rate. The FTP rate is the cost of funding (investing) the loan or deposit in a wholesale portfolio with a similar term structure as the underlying asset or liability. Industry practice is to use a marginal matched maturity FTP rate. The FTP rate will vary for each term/maturity of product offered, but the methodology for determining the FTP rate is consistent across products.

- **Department Profitability**: Each bank product, whether a loan or a deposit, is expected to earn the FI's target return on equity (ROE). ROE is determined as after-tax net income as a percentage of capital. For mortgages, the FTP rate is a function of the cost of wholesale funds with a similar term structure as the mortgage portfolio. This FTP rate does not depend on the actual funding mix of the financial institution. For example, consider an FI that funds 70% of their assets with retail deposits and 30% of their assets in the wholesale markets. The FTP rate for mortgages is totally based on the cost of wholesale funding. Any spread between the retail deposit and wholesale funding cost accrues to the retail deposit business.

- **Mortgage Pricing**: Like all departments of the FI, the mortgage department seeks to maximize profits. The mortgage department has full discretion to set mortgage pricing based on the FTP rate, other costs and competitive market forces. Discretion to branch employees and mortgage specialists in setting rates for borrowers is based upon discounts to posted rates, and larger discounts typically reduce the commissions earned by such employees. Accordingly, for large FIs, a complete link between its CMB cost of funds and the retail price of a mortgage can not be conclusively established.

- **Treasury Profitability**: The treasury department manages cash flows and commitment and interest rate risks, and manages relative to the FTP cost base. In some large FIs, the treasury department is a profit centre, where it seeks to make profits by outperforming the FTP. In others, any treasury department profits and losses are allocated to operating departments.

- **CMB Issue Costs and Dealer Profitability**: The treasury departments of the FIs pay fully-loaded costs of CMB financing, including guarantee fees and syndication fees. Syndication fees on CMB issuance are earned by bank dealers and others. Despite common ownership, the treasury department pays the full cost of syndication, and the dealers receive the full benefit. The bank-owned dealers work relatively independently of the bank, and all profits earned on commissions from syndicating and trading CMB are retained by the dealers.

- **Aggregator Profitability**: Each "desk" or department within a dealer is expected to make a profit. Desks do not generally cross-subsidize each other, and the dealer's CMB commissions are not used to subsidize the aggregator activities. Accordingly, each aggregator's activities must be profitable on their own in order for the dealer to continue providing CMB mortgage aggregator activities.

Credit Unions

Credit union centrals play a similar role to the bank treasury department in sourcing external funds on an aggregate basis, setting a cost of funds against which branch profitability may be measured, and managing interest rate risk and commitment risk centrally. For example, the FTP rate may not vary by the term of the asset, and the rate may reflect only one source of external funds, or may simply be an estimated spread over Government of Canada rates to approximate a relevant marginal cost of funds. For small credit unions without the benefit of centrals, the model is similar to that of monoline lenders described below. Funding cost of CMBs may be clearly recognized in the FTP rate, or it may be only indirectly recognized if the cost of mortgage funds is measured as the price at which mortgages are sold to aggregators or institutional investors.

Smaller Lenders

The business models of smaller lenders are less complex, with fewer products, and fewer sources of funds. FTP rates are less common, and often information regarding product line profitability is limited. Profitability at smaller FIs is typically measured on a branch basis, in other words, based on multiple product lines, with costs determined as total branch costs. Funding costs are mainly deposit rates or direct costs of sales to aggregators or institutional investors, and they may measure profitability directly as the mortgage rate compared to deposit/GIC rates plus other expenses. Given their small size, some fund their mortgage volume through retail deposits by raising advertised deposit rates slightly above their competitors to attract depositors. Mortgages may be held on balance sheet only up to a maximum volume that can be supported by the firm's capital, or periodically funded through securitization or sales to aggregators or institutional investors. Aggregators or institutional investors may base their fees on the CMB rate plus costs of hedging commitment and interest rate risk, and managing replacement assets for the CMB as needed.

Monoline Lenders

For monoline lenders that are not deposit-taking, profitability of the mortgage business is easily tracked since they generally focus on a single product, and usually have simple funding models. Funding may be on an ongoing basis solely through aggregators or institutional investors, through contracts with rates set relative to Government of Canada rates or CMB funding cost plus hedging costs. This business model requires little capital for the lenders since mortgages may not be held on the lender's balance sheet at all, or only for the commitment period, and the lender effectively acts as a commissioned sales channel for the aggregator or institutional investor. In this model, the lender may continue to service the mortgages, or sell the servicing contract to a third party.

ANNEX C

ADDENDUM ON CURRENT MARKET CONDITIONS

EVALUATION OF THE CANADA MORTGAGE BONDS PROGRAM

ADDENDUM ON CURRENT MARKET CONDITIONS

PREPARED BY:
TWIST FINANCIAL CORP.
KPMG LLP
ALM MODEL METRICS

TABLE OF CONTENTS

1.0 INTRODUCTION C.3

1.1 BACKGROUND C.3

1.2 PROCESS FOR PREPARING THIS ADDENDUM C.4

2.0 CHANGES IN FINANCIAL MARKETS SINCE AUGUST, 2007 .... C.5

3.0 HOW WOULD FINDINGS OF THE CMB EVALUATION DIFFER IF FINANCIAL MARKET CONDITIONS DURING THE STUDY PERIOD HAD BEEN THE SAME AS ARE THEY ARE CURRENTLY? C.6

3.1 COST OF FUNDS ADVANTAGE C.7

3.2 AVAILABILITY OF FUNDS TO MORTGAGE LENDERS C.10

3.3 IMPACT ON MORTGAGE COSTS FOR BORROWERS C.14

3.4 IMPACT ON SMALL LENDER ACTIVITY AND THE COMPETITIVE ENVIRONMENT C.16

3.5 CAPITAL MARKETS IMPACTS C.17

4. OTHER ISSUES C.19

5. CONCLUSIONS C.20

1.0 INTRODUCTION

1.1 BACKGROUND

The Evaluation of the Canada Mortgage Bonds (CMB) program dealt with the operation and impacts of the program during its first five years of operation, 2001 through 2006. The study findings are specific to the market structures, financing options, and conditions that prevailed during that time period, and the evaluation does not seek to predict how the program would perform under different market conditions.

The study period (2001-2006) was a period of very stable and positive economic and market conditions – generally and for housing markets in particular. This period was characterized by lower interest rates than had been seen for many years, high growth in residential mortgage lending, favourable credit markets, and a high degree of competition.

During the summer of 2007 financial markets in Canada and elsewhere began to undergo some important changes, initially sparked by the sub-prime mortgage crisis in the United States. These events are affecting the availability and cost of funds to mortgage lenders, factors which have obvious implications for the role and impacts of the CMB program. In addition, there are now new financing options for Canadian financial institutions that were not available during the study period, such as mortgage covered bonds.

It would be ideal to assess the impact of the CMB program over a full business cycle, but we are constrained by actual market conditions since inception of the program. The findings of the evaluation study should be revisited once markets have stabilized. However, as of February, 2008, that has not yet happened – in fact, market conditions are still changing dramatically almost daily – so a thorough and rigorous analysis of the evaluation findings in light of changed market conditions is not possible at this time. On the other hand, if the evaluation were to be based on today's conditions, some of the study findings would probably be different. The purpose of this paper is to discuss these likely differences.

Specifically, the objectives of this paper are to describe:

- recent (since the Summer of 2007) changes in financial markets and how these changes have affected the environment for the CMB program; and
- how the findings of the CMB evaluation would likely be different if financial market conditions during the study period had been the same as they are today.

1.2 PROCESS FOR PREPARING THIS ADDENDUM

The key word in the previous paragraph is "describe" – this paper does not pretend to be an analysis of how current market conditions would affect the evaluation findings. It is not a study – It is a presentation of the opinions of three of the senior evaluation study team members[77] regarding these effects. Prior to writing this paper, the consultants carried out a few interviews with some of the financial market participants who were interviewed during the evaluation study to ask them how their opinions regarding the original interview questions would be different if the questions had been asked in relation to current market conditions. Interviews were held with one large bank, two small lenders, two aggregators, three dealers, and two investors. The purpose of these interviews was to validate our opinions (or correct them if they were incorrect) and to obtain any additional relevant information related to the implications of current market conditions.

The three consultants then synthesized their opinions, prepared a draft of this paper, and submitted the paper to CMHC. Minor editorial revisions were subsequently made following the review of the paper by senior CMHC management.

---

77 The consultant responsible for the interviews of market participants, the literature review, and the analysis of capital markets; the consultant responsible for the analysis of the impacts of CMB on the internal funds pricing of financial institutions; and the overall study coordinator.

2.0 CHANGES IN FINANCIAL MARKETS SINCE AUGUST, 2007

Fixed income markets have been in turmoil since mid-summer 2007, with credit spreads widening to near record levels and liquidity significantly reduced in many markets. The trigger for the global liquidity crisis was rising defaults in the US subprime mortgage market, coupled with a lack of transparency regarding underlying assets in structured products such as Credit Default Obligations (CDOs) and Asset-Backed Commercial Paper (ABCP) conduits. Concerns arose that the structural enhancement within the conduits and CDOs would provide less protection against default than previously believed, and leverage in many structures amplified the problem. Specific concerns arose for Structure Investment Vehicles (SIVs) in the US, and Credit Default Swap spreads widened in general. Liquidity was reduced, credit problems spread to monoline bond insurers, significant write-downs occurred, and many financial institutions had to shore up their balance sheets.

In Canada, there was in fact relatively little exposure to subprime assets, but domestic credit markets nevertheless reacted to the global liquidity crisis and spread movements, and funding costs for mortgage lenders rose relative to Government of Canada rates. The non-bank sponsored ABCP market in Canada came to a complete standstill. The bank ABCP market was functioning but with wide spreads and limited volume in late 2007, but spreads and liquidity have stabilized in 2008.

Since August, 2007, access to other funding alternatives for domestic mortgage lenders has been both more limited, and more expensive. Issuance of Canada Mortgage Bonds has continued, with new issues in September and December, 2007 of $9.5 billion each, which were the largest CMB issues since the program began. Spreads on CMB vs. government of Canada bonds are substantially wider than prior to August, but their relative spread movement has been much less than for other funding alternatives such as subordinated debt and deposit notes. Swap spreads have widened more than CMB spreads, so that CMB spreads vs. floating rates have actually tightened. (The significance of this point is that, even with the higher CMB spreads today, the cost of CMB funds on a swapped basis – which is the way banks look at funding costs – is actually lower than during the evaluation period.)

3.0 HOW WOULD FINDINGS OF THE CMB EVALUATION DIFFER IF FINANCIAL MARKET CONDITIONS DURING THE STUDY PERIOD HAD BEEN THE SAME AS ARE THEY ARE CURRENTLY?

This section comments on the major evaluation questions in light of changes in financial market conditions since August 2007:

- Impact on cost of funds to mortgage lenders (large lenders and small lenders separately)
- Impact on availability of funds to mortgage lenders (large lenders and small lenders separately)
- Impact on mortgage costs for borrowers
- Impact on the level of activity of small lenders in the mortgage market and on the competitive environment
- Capital markets impacts

In general, compared to the evaluation period from 2001 through 2006, all lenders are much more focused on funding availability than cost. This is in sharp contrast to our interviews during the evaluation study when low borrowing cost was the main attraction of the CMB program for large lenders and some small lenders, while many small lenders declined to participate in CMB because ABCP or whole loan sales provided simpler solutions with roughly comparable or only slightly higher cost. The market turmoil has severely curtailed funding availability for small lenders through non-CMB channels. In particular, ABCP has been more expensive for large banks[78], and is virtually unavailable for small lenders at any spread.

---

78 Bank ABCP spreads were roughly 4 basis points over Bankers' Acceptances at the end of the Evaluation Period. In August through December, 2007, these spreads reached a peak of 60 basis points and banks were repurchasing very large proportions of their own ABCP to keep the market functioning. Spreads have stabilized recently at around 10 basis points, and banks are still actively supporting their own programs, but to a much smaller extent than from August through December, 2007.

3.1 COST OF FUNDS ADVANTAGE

Large Lenders

For large lenders, the table below summarizes the approximate cost of various sources of funds (gross of expenses[79]). Spreads are volatile, so this discussion of current rates should be viewed as an approximation at the time of writing. The comparison point is rates and spreads in the Evaluation Report that represent average rates from 2001 through 2006. Clearly, the cost of funds advantage of the CMB is much higher in this environment of wider overall credit spreads, with the advantage relative to banks deposit notes (BDNs) over 100 basis points, compared to roughly 23 basis points (18 basis points after expenses) on average from 2001 through 2006.

A significant development since the evaluation study is that as of June, 2007, Canadian banks have had approval from OSFI to issue limited amounts of Covered Bonds. As of February, 2008, two large Canadian banks have issued 4.25 billion Euros of mortgage Covered Bonds in the European market, and at least one other has indicated plans to do so. During our original interviews, lenders speculated that the cost of issuing covered bonds would be roughly 10 basis points wider than CMB (on a comparable basis vs. Govt of Canada 5-year yields), i.e. roughly 25 basis points tighter than BDNs at that time. In the context of the market at that time, this speculation was likely reasonable. Since that time, credit spreads have generally widened significantly, and it is not surprising that covered bond spreads were wider when they were issued, but are still roughly mid-way between CMB spreads and BDNs. When the first covered bonds were issued by a Canadian bank, the spread was roughly 45 basis points vs. CMB, and 45 basis points tighter than BDNs. Currently, covered bonds spreads are roughly 55 basis points wider than CMB and 50 basis points tighter than BDNs. Note that these comparisons do not include potential portfolio insurance costs and guarantee costs associated with the CMB, which are not required for covered bonds.

79 Any changes in expenses related to various forms of debt issuance are small relative to the changes in spreads, so we focus on gross spreads and ignore expenses in this addendum. In the Evaluation Reports, we detail the cost of funds advantage relative to BDNs as well as relative to the next best alternative that might have developed in the absence of CMBs. In this addendum, we focus on costs relative to BDNs and Covered Bonds only since other possible alternatives are unobservable regardless of the environment.

Large Lender Cost of Funds

Approximate Spreads to GOC Bonds (gross of expenses)	2001-2006	Feb. 2008	Change
5-year CMB	12	35	23
5-year BDN	35	140	105
CMB Cost advantage vs. BDN	**23**	**105**	**82**
5-year Covered Bonds to GOC Bonds	22 (estimated)	90	68
5-year CMB Cost advantage vs. Covered Bonds	**10**	**55**	**48**
Other Spreads			
5-year Swap rate vs. GOC Bonds	25	55	30
5-year BDN vs. Swap rate	10	85	75
CMB vs. Bankers' Acceptances (swapped)	-13	-20	-7
5-year Fixed Mortgage vs. GOC Bonds	100	250	150

Small Lenders

Small lenders were defined in the evaluation reports to include all lenders who were not the big five Canadian banks. This includes the Canadian operations of several large foreign financial institutions, as well as large and small caisses populaires, trust companies, insurance companies and independent mortgage lenders. Small lenders are not a homogeneous group, so the impact of recent events on the cost of funds has varied widely depending on the lender's business and funding model. Our analysis is therefore confined to a qualitative discussion.

Small lenders rely on various combinations of balance sheet funding, ABCP (when possible), commitment or whole loan sales to institutional investors, indirect participation in the CMB program through aggregators (commitment or whole loan sales), and direct participation in the CMB as approved issuers (some require credit enhancement in the form of swap arrangements with higher rated financial institutions).

During the evaluation period from 2001 to 2006, small lenders tended to focus on diversifying their funding sources, and on managing prepayment and commitment risk. Since spreads were close together for all funding sources, the relative cost was not their major concern. In recent months, their focus has shifted primarily to availability with less emphasis on diversification since there are fewer alternatives. Cost and risk management are secondary concerns.

For "small lenders" that are highly rated domestic or foreign financial institutions, the cost of funds through the CMB is very similar to that of the large lenders. However, for others who access the CMB indirectly or with credit enhancement, the cost of accessing funds through the CMB is higher than for the large lenders. This section focuses on changes in the cost of accessing the CMB directly or indirectly for small lenders. Since access to funds through ABCP has been effectively eliminated and direct issuance of NHA MBS is limited, the main comparison point is whole loan sales to institutional investors or aggregators, but the next section notes important limitations on the liquidity and depth of this market.

During the evaluation period, some small lenders did not access CMB funding at all, while others did. A few who did so were direct "approved" issuers or partnered with a financial institution who had that status, but most accessed the program through aggregators. Some small lenders continue to access only through aggregators, but since December, 2006, seven new small lenders[80] have become approved issuers into the Canada Housing Trust. They are now able to access CMB funding directly, provided they obtain any necessary credit enhancement from an approved swap counterparty.

Approved issuers who do not need credit enhancement and who efficiently manage prepayment risk and replacement assets internally face the lowest possible funding cost that is comparable to the large lenders' cost of CMB funding. Lenders who use aggregators (or who are approved issuers but use third parties to hedge some of the risks) have a slightly higher cost of funds to reflect the cost of credit enhancement and/or prepayment and replacement assets hedges. These costs have risen in the 10 to 20 basis point range compared to the original evaluation period[81]. However, alternative funding is either unavailable or the cost has increased even more, so the CMB has had participation from more small lenders and many lenders have increased their participation, both directly and indirectly.

---

[80] Note that "small lenders" refers to all lenders who are not the big Canadian banks.

[81] Measuring the cost of managing replacement assets is imprecise at best and was discussed in qualitative terms in the evaluation report. There are many alternatives in the approach to risk transfer between lenders and aggregators. Interviewees cited this range of increase as a reasonable indication depending on the specific transactions.

The absolute cost of funding through the CMB for most small lenders is relatively higher than for large lenders due to credit enhancement and hedging costs, and this relative difference has increased in the recent environment. However, some small lenders appear to have an overall funding cost advantage over the big banks in the current environment because they can fund virtually all of their originations via the CMB now, while the big banks must fund their much greater volume of originations through a mix of the CMB, covered bonds and BDN's. The costs of these alternatives for the large lenders are significantly greater than the incremental costs borne by small lenders in the CMB, so that the weighted average cost of funds for some small lenders is lower than for large lenders. Some small lenders fund mortgages directly through CMB as well as indirectly through aggregators or other institutions to maximize their access to CMB funding. The implications of this observation are discussed in the following sections. Some of these new or larger direct issuers into the CMB are lenders who felt previously that the relative cost advantage of the CMB program was insufficient to merit participation since the advantage was only a few basis points after all costs of participation were considered.

In today's environment, the CMB offers small and large lenders much needed reliability (vs. ABCP or whole loan sales), as well as a much greater cost advantage relative to whole loan sales to institutional investors or aggregators.

3.2 AVAILABILITY OF FUNDS TO MORTGAGE LENDERS

CMHC makes a decision about the size of each issue size to balance supply of mortgages (MBS) vs. demand for CMB from investors, with input from the investment dealer syndicate. The CMB bond issues in September and December, 2007 were each $9.5 billion, which were record size issues despite the challenging market environment for many other mortgage funding alternatives in Canada and in foreign markets. However, based on our interviews, it is clear that large lenders would have provided significantly more mortgages and that many were cut back from their desired CMB funding amounts. In the current market, lenders interviewed said they would generally prefer larger CMB issues even if wider spreads were required to satisfy investors[82]. (As noted above, even with higher spreads the cost of CMB funds is actually lower than during the evaluation period.) Prior to August, 2007, there were very few cutbacks relative to desired allocations and lenders were generally able to satisfy their full demand for CMB funding.

---

[82] Some banks have even offered to CMHC that they will buy the excess CMB to keep spreads from widening further. They would use the CMB as collateral, and sell T-bills or other Government of Canada securities that are currently being used as collateral, thereby achieving a net improvement in their liquidity position and higher yield. CMHC's concern regarding this proposal is that the banks could choose to sell their holdings at any time, potentially widening the CMB spreads to the detriment of investors and other future issuers.

This current excess supply of mortgages to the CMB program means that CMHC must make explicit choices regarding the tradeoffs among issue size, execution risk, and spread. If CMHC limits issue size relative to mortgage supply, there is an opportunity to influence the competitive landscape of the mortgage markets. The allocation process used by CMHC to ration access to CMB funding has become a focus of attention for lenders. These are important policy questions that merit further attention.

Large Lenders

Prior to August, 2007, large lenders believed that they could satisfy their full funding needs in the capital market in the absence of the CMB, and liquidity contingency planning was not a major concern. Generally speaking, banks have diversified global funding platforms to protect their cost of funds, and conservative capitalization to protect against a widespread liquidity crunch. In the current market environment, large lenders have still been able to access funding, but funding need has been particularly high in light of reduced balance sheet capacity, credit losses and write-downs. Canadian banks have faced liquidity constraints in some markets (ABCP), and substantial spread pressure in response to issuance in others, which has increased their desire for funding through the CMB.

From August 15, 2007 through February 8, 2008, the table below shows that despite the global liquidity crunch and wider spreads, Canadian banks have issued significant amounts of senior and subordinated debt, including over $20 billion in Canada and nearly $12 billion in the US market. Two Canadian banks have also issued their first mortgage covered bonds in the European markets, totalling 4.25 billion Euros[83]. This is a new source of funding that was not available earlier last year due to OSFI regulatory restrictions. In addition, at least one bank has issued $500 million NHA MBS directly to institutional investors.

---

83 Many regular foreign issuers faced challenges raising funds through mortgage covered bonds (the market was virtually shut down for several months in late 2007), and the Canadian banks undertook substantial marketing efforts to ensure the success of their covered bond issues. They launched successfully, due to the strong international reputation of Canadian banks' mortgage lending, other business and risk management models as well as the diversification impact of Canadian issuers for international investors.

Canadian Bank Debt Issuance
August 15, 2007 to February 8, 2008

	Local Currency Amount
CAD	20,035,000,000
US	11,977,000,000
EUR	6,820,000,000
HKD	3,537,000,000
CHF	600,000,000
GBP	400,000,000
ISK	2,000,000,000
JPY	64,400,000,000

Source: Bloomberg. Reflects issues greater than $US 50 million.

Consistent with more stable environments, the Canadian banks are successfully funding through multiple instruments and markets. Nevertheless they want to issue as much as possible through CMB (i.e. fund as much of their eligible mortgages as they can) while maintaining access to other channels for diversification purposes despite higher relative cost compared to CMB.

Small Lenders

Small lenders have fewer options for funding during the current market turmoil than they had during the evaluation period, and the CMB has played a particularly important role as a reliable source of funds for these lenders. The third party ABCP market is not available (the market has been subject to a standstill agreement to restructure existing ABCP). In addition, some financial institutions have reduced their purchases of whole loans and commitments from small lenders since their own balance sheets are already stretched and their funding through CMB is constrained. In order to secure more reliable funding through the CMB program, several small lenders have become approved issuers for the CMB program, and others have initiated or expanded their relationships with aggregators. Some small lenders have shifted their business model away from non-prime (Alt-A and sub-prime) mortgages, for which they are unable to secure funding, to prime mortgages, which can be funded through CMB[84].

For small lenders who have become approved issuers, availability of funding has become more reliable and predictable, but managing prepayment risk and replacement assets is costly and presents challenges as discussed in the evaluation report. Some small lenders who participate directly in the CMB enter agreements with other financial institutions to help manage these

[84] During the evaluation period, some small lenders had specifically focused on non-prime lending since it was more profitable on a risk adjusted basis. ABCP funding is not currently available for that business, and profitability of prime mortgages is higher in the current environment due to wider prime mortgage spreads vs. Canadas and vs. funding costs.

risks, at a cost[85]. For those who participate indirectly through aggregators, whole loan sales are still available up to the aggregators' perceived limit on their CMB funding allocation, but whole loan sales to institutional investors or banks are less reliable.

The focus on counterparty risk has reduced the availability of some risk management strategies for small lenders, but competition among aggregators and swap providers and improved risk management skills at small lenders seem to be effective at maintaining sufficient access to CMB to satisfy the funding needs of small lenders.

In summary, the impact of the CMB program on the availability of funds to small lenders is significantly greater at the present time than it was during the evaluation period, as ABCP is not available and other channels are less reliable.

Allocation Process

CMHC has a process to determine the size of each CMB issue. Issue size is determined as a function of both funding demand and perceived investor demand for CMBs, with consideration given to the spread required to clear the market. In our initial interviews regarding the evaluation period, there were a few minor complaints about the process, but lenders were generally able to fill all the demand for funds that they indicated as the issue sizes grew. However, since August, many large lenders have been cut back substantially.

The allocation of access across approved issuers was changed in March, 2006. Previously, allocation was proportional to the dollar value of mortgages provided for funding. Currently, the allocation process ensures that if the desired funding exceeds the desired CMB issue size, the institutions that request the smallest amount of funding receive their full allocations, and cutbacks are applied so that larger requests all receive the same size allocation. Since the large lenders typically make the largest funding request, the result of this new process is that smaller lenders have received full allocations while larger lenders have not. Given the increased demand for CMB funding by all lenders, cutbacks were significant in September and December, 2007. For example, a large bank might have previously been receiving an allocation of $1 to $1.2 billion each quarter, while in the September or December issues, they only got $500 to $700 million. The reason is the expansion of the number of approved issuers in recent months along with allocations to some small lenders who had not participated in CMB or who previously asked for minor allocations (e.g. $50 to $100 million). Many of these smaller lenders requested and received allocations of $500 million or more as they shifted their focus to the CMB as their main source of funding. Aggregators generally received larger allocations in the recent issues as well since more small lenders participated and increased their reliance on

[85] The major constraint cited in interviews was the ability to originate mortgages as replacement assets. This issue is discussed in the Evaluation Report and the challenges have not changed materially in the current environment.

CMB[86]. One goal of the CMB program was to enhance the competitiveness of the Canadian mortgage market, and the implications of this allocation approach on competitiveness are discussed in sections 3.3 and 3.4.

3.3 IMPACT ON MORTGAGE COSTS FOR BORROWERS

The focus of this evaluation question is whether the impact of the CMB program on mortgage rates is the same or different in the current environment compared to the evaluation period.

The evaluation study describes the mechanism through which the CMB may impact mortgage rates. The CMB provides low cost funds for mortgage lenders. The impact on consumers depends on the pass through of the funding cost advantage to mortgage rates. This in turn depends on internal funds transfer pricing policies, and on competition in the mortgage market.

The evaluation report provides evidence that during the study period, a large percentage of the cost of funds advantage was passed through to consumers due to two effects:

- lenders incorporated the CMB cost advantage in the formula they used for determining the cost of funds charged to their mortgage departments (Funds Transfer Price);
- a high degree of competition among lenders (which insured that the mortgage departments passed on most of all of this funding advantage to their customers).

Funds Transfer Pricing

Some lenders' FTP methodology results in a more direct pass-through of the CMB funding advantage to their mortgage department. The impact is most direct for small lenders who rely mainly on CMB for funding (who have become more numerous in the recent environment), and for banks whose Funds Transfer Pricing methodology explicitly reflects the cost of the CMB. When the cost advantage of CMB was much smaller due to tight credit spreads in general, nuances of FTP methodology were less important for the pass-through of the cost of funds advantage to consumers. Now, these nuances have greater potential to materially affect the rates at which the banks fund their mortgage business. Potentially this might affect rate setting and price leadership. However, the banks recognize that the current situation is subject to change, and our impression is that FTP rates are having less of an influence on mortgage rates than during the evaluation period.

---

86 Some aggregators are bank-owned investment dealers, but this business operates in competition with the bank's mortgage funding through CMB. CMHC monitors which lenders originate the mortgages contributed by aggregators.

Competition and mortgage pricing

At the end of the evaluation period, five-year fixed mortgage spreads relative to Government of Canada rates were roughly 100 basis points (Table 1). This spread is currently roughly 250 basis points. Compared to cost of funds, the spread on mortgages vs. CMB was therefore roughly 88 basis points in 2006 vs. 215 now. Spread on mortgages vs. BDNs was 65 basis points, vs. 110 basis points now. Clearly, regardless of the funding rate comparison, lenders are earning a higher profit margin, but business risks have also increased. Interviewees said that competitive forces are expected to chip away at this margin.

During the evaluation period, large lenders were viewed as the overall price leaders, with small lenders undercutting price occasionally to generate additional, but relatively small, volume. Our interpretation of the recent evidence is that large lenders have led mortgage rates higher in response to market turmoil, general economic and real estate market uncertainty, wider credit spreads, and write-downs of other assets. Wider margins on prime mortgages and funding through CMB (Section 3.1) have attracted more small lenders to prime lending, away from sub-prime and Alt-A markets. Since the weighted average cost of funds for some small lenders is below the average for large lenders[87], and small lenders are less dependent on large lenders or institutional investors for their own funding through whole loans, small lenders are lowering five-year fixed rate mortgage rates (i.e. CMB-eligible mortgages) to increase volume[88]. At the time of writing, this impact has lowered mortgage rates. Several interviewees confirmed that small lenders have decreased rates 10 basis points in recent weeks, and large lenders matched. This is in contrast to the evaluation period when large lenders did not match small lenders' price drops since margins were already very slim, and the small lenders tended to drop prices temporarily until they hit their more limited funding capacity (due to lack of CMB participation), and did not generate sufficient volume to threaten large lenders' market share. Market participants anticipate shifting market dynamics, as small lenders (and perhaps some large lenders) will continue to chip away at the current wide mortgage spreads. CMB funding for small lender is an important driver of their ability to continue to participate as lenders in the current environment and of their impact on lowering mortgage rates.

In summary, in the current environment, lenders are currently earning wider margins on prime mortgages. However, margins would likely be even wider, and mortgage rates even higher, in the absence of CMB. There are two reasons for this:

---

[87] We note that we refer here to the cost of funds to the mortgage business, and not to the overall bank. That is, the big banks cost of retail deposits is lower than the small lenders' cost of wholesale funding. But, as we argued in the Evaluation Report, the cost of retail deposits does not impact the way that the banks view the profitability of their mortgage departments.

[88] To the extent that small lenders want to maintain friendly relationships with large banks for other aspects of their business, or for future funding , hedging, or credit enhancement, there may be constraints on the extent to which they are willing to directly compete with the banks based on mortgage pricing.

- in the absence of CMB funding, the cost of funds for all lenders would be even higher, and
- the CMB program has enabled small lenders to have a greater influence on driving mortgage rates down.

3.4 IMPACT ON SMALL LENDER ACTIVITY AND THE COMPETITIVE ENVIRONMENT

This discussion follows from section 3.2 on the impact of CMB on access to funds for small lenders and section 3.3 on the impact on mortgage costs for borrowers. The role of the CMB program in supporting competition through the entry or expansion of small lenders is even more important in the recent environment because it provided them reliable access to low cost funds in greater volume than they would have had otherwise. The allocation process for the CMB funding to mortgage lenders has explicitly supported the full funding requests of small lenders, and some have become price leaders in the mortgage market, putting pressure on larger lenders' rates.

In more stable markets when profit margins on mortgages were tighter, competition was mostly in non-price dimensions such as customer service, cross-selling of other products, mortgage features, etc., but some small lenders frequently advertised slightly lower mortgage rates than large lenders. They were able to attract business up to their funding capacity, but the large lenders were also able to originate large volumes of mortgages at slightly higher rates and did not necessarily feel compelled to match the small lender rates, i.e. the big banks tended to be the price leaders. Large lenders had and continue to have an advantage over small lenders in originating large volumes of mortgages due to their large existing client base for other products.

In the current environment, some small lenders have recently entered the prime market or have expanded their presence in this market with the funding support of the CMB program. They can compete more on price since margins are wider and funding is reliable. Some can originate enough volume to be a challenge to the large lenders' market share. This seems to be changing the competitive dynamics, with small lenders becoming price leaders from time to time, and large lenders matching their rates. This highlights the role of the CMB in supporting the competitiveness of the mortgage market in difficult market environments, and encouraging some pass-through of the funding cost advantage to consumers.

3.5 CAPITAL MARKETS IMPACTS

Liquidity

Secondary market liquidity has been generally comparable to the original evaluation period for CMB, and there has been no change in impact of CMB issuance or trading on the yield curve or other sectors[89].

Spread

From 2001 through 2006, five-year CMB spreads were stabilized in the 11 to 18 basis point range. Since August, 2007, CMB five-year spreads reached a peak of nearly 40 basis points, and have settled around 30 to 35 basis points. However, as swap spreads have also widened, when the CMB fixed spread is swapped to compare it to a floating rate (BAs), this spread is tighter now than during the evaluation period. This means that when the banks compare their various costs of funds on a floating rate basis, CMB is even cheaper than during the evaluation period. This is another way to express the fact that the relative cost of funds advantage of the CMB is greater in the current environment.

From the investor perspective, CMB bonds are attractive to "real money" (i.e. buy and hold) investors relative to government of Canada bonds, but other high quality credits (e.g. Canadian banks) offer even wider spreads. Leveraged investors generally prefer investments with a greater risk/reward profile if it is available. On an asset swap basis, CMB are expensive relative to other domestic and global investment opportunities[90]. The comparison to high quality domestic and global corporate bonds appears to be the most important driver of the wider spreads relative to Government of Canada bonds. Concentration of CMB supply in the five-year area of the curve and other factors discussed in the evaluation report also contribute but have not changed materially due to current market conditions. There has been no material change in the status of trading CMB in the repo market during the recent market turmoil, which remains liquid and active with about a one basis point spread relative to Government of Canada bonds.

---

[89] There are several interesting recent developments in the Australian bond market that reflect on the Canadian environment. The Australian Financial Markets Association has requested that the government issue more bonds to provide liquidity in the government bond market since supply and liquidity are very limited due to continuing government surpluses. In addition, the Australian Securitization Forum has suggested that the government consider implementing a program similar to the CMB program to support the ailing mortgage-backed market that has been struggling to raise funds in the recent global market turmoil. As in Canada, such a program could both support availability and cost of funds in the mortgage market and provide a liquid government bond substitute. In addition, Australian banks have shifted to the domestic market rather than issuing debt in global markets.

[90] Comparing investments on an asset swap basis is how global investors compare opportunities across different markets. Swap spreads have widened, which makes CMB spreads look tight on a floating rate basis, because swap rates reflect counterparty credit risk, which is expensive in the current environment.

Alternative Investments

As mentioned above, mortgage covered bonds are a new development for Canadian banks. The underlying assets may be government or privately insured prime mortgages, which are virtually the same as for CMB, but the covered bonds issued thus far by Canadian banks have been for uninsured mortgages that are not CMB eligible. There is no government guarantee on covered bonds – rather, the investor has a claim on the issuing bank. The extra spread for investors in mortgage covered bonds relative to CMB is currently roughly 55 basis points.

The NHA MBS market was discussed in detail in the evaluation report, and prior to August, 2007, there was very little issuance by Canadian banks placed with institutional investors in the secondary market. Most MBS were maintained on balance sheet by the issuing institutions for future CMB issuance or for LVTS liquidity purposes. In contrast, at least one bank issued $500 million to institutional investors in the past few months. The spread on these government guaranteed, but pre-payable, securities ("975" pools) was roughly 85 basis points over Government of Canada, or about 50 basis points over CMB, and about five basis points tighter than covered bonds. Availability of this channel is limited, but is being pursued by the banks where available.

Auction and Consolidation with Government of Canada Issuance

The 30 to 40 basis point CMB spread relative to Government of Canada bonds that has been observed in the past few months highlights that the potential benefit of consolidating the CMB issuance with Government of Canada bonds is greater in the current environment than during the evaluation period when spreads were as tight as 12 basis points. The additional cost of funds advantage that may be available through consolidation could further lower mortgage rates due to competition in mortgage markets, but will not necessarily be 100% passed through to consumers.

If CMB issuance were to be consolidated with Government of Canada issuance, distribution would occur through an auction process rather than syndication. Although the potential benefits are higher from consolidation, risks associated with an auction process are also higher. Balance sheet constraints and liquidity risks are high in the current environment, and auctions for various fixed income securities including U.S. municipal bonds and treasuries have been poorly supported by dealers, and some have failed. However, Government of Canada auctions have gone smoothly throughout the recent market turmoil.

Potential costs of consolidation also vary depending on economic conditions, including government deficit/surplus. Risk management remains an important consideration for the Canada Housing Trust. The other considerations addressed in the evaluation report are unchanged in the current environment.

4.0 OTHER ISSUES

In the recent market turmoil, counterparty risk has been highlighted as a concern for all investors involved in derivatives markets. CMHC has strong controls in place to protect the integrity of the CHT, but CHT is not immune to the current turmoil. If one of the major Canadian banks were to be downgraded below the thresholds required for approved swap counterparties, there would be substantial implications in terms of collateralization required, or some other form of credit enhancement. The correlation among Canadian bank ratings and spreads is very high, so for CHT, counterparty risk is not separate from overall systemic risk. Correlation and overall systemic risk are precisely the risks that have been highlighted and re-priced in the market. This implies that in market turmoil, the value of the government guarantee on the CHT may be higher. Some market participants interviewed believe that the guarantee fees on CMB issues should increase in environments with greater credit and systemic risk. The wide spread differential between covered bond spreads and CMB spreads, highlights the market assessment of the value of the guarantee on mortgage portfolios and the guarantee on the CMB.

5.0 CONCLUSIONS

The major impacts of the recent market turmoil on the CMB program appear to be as follows:

- The cost of CMB issuance (spread to Canadas) has increased, but by much less than alternative sources of bank funding, so the cost of funds advantage of the CMB has increased significantly. Importantly, even with their higher spread to Canada's, the cost of CMB on a swapped basis (the way the banks look at their funding costs) has actually come down in the current market condition.
- The CMB program has played a stabilizing role in the Canadian mortgage markets by providing a reliable funding source, and this has been particularly important for small lenders who have fewer alternatives in this environment compared to large lenders.
- Demand for CMB funding has increased from all lenders, while issue size has stabilized, so the allocation process to provide funding has become an important factor in supporting, and potentially influencing, competition among lenders.
- Some small lenders may actually have lower weighted average cost of funds relative to large lenders since a large portion of their funding is through CMB, while large lenders fund through multiple, more expensive sources.
- Mortgage spreads relative to government of Canada bonds have widened, permitting new or expanded entrance into prime mortgage lending at profitable margins compared to pre-August 2007 levels.
- The CMB program has supported small lenders and enhanced the competitiveness of the mortgage market, and some small lenders have been price leaders in parts of the mortgage market in recent months, gradually reducing mortgage rates.
- The wider CMB spreads highlight the potential impact of consolidation of CMB issuance with Government of Canada funding, but potential drawbacks and concerns regarding this approach are either increased or unchanged in this environment.