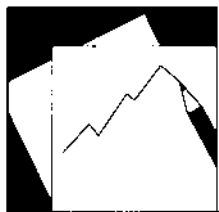


# Working Paper

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INTERNATIONAL MONETARY FUND



# IMF Working Paper

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## Canadian Residential Mortgage Markets: Boring But Effective?

*John Kiff*

**IMF Working Paper**

Monetary and Capital Markets

**Canadian Residential Mortgage Markets: Boring But Effective?**

**Prepared by John Kiff<sup>1</sup>**

Authorized for distribution by Laura Kodres and Charles Kramer

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**Abstract**

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Klyuev (2008) concluded that the Canadian market for housing finance is highly advanced and sophisticated, but financing options were somewhat limited, particularly at terms longer than five years. This paper argues that the paucity of longer-term loans is caused by a five-year maturity cap on government-guaranteed deposit insurance, and a prepayment penalty limit on residential mortgage loans in the Interest Act. That said, the availability and cost of residential loans for prime borrowers are comparable to those in the United States.

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Author's E-Mail Address: [jkiff@imf.org](mailto:jkiff@imf.org)

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<sup>1</sup> John Kiff is a Senior Financial Sector Expert in the Monetary and Capital Markets Department of the IMF. He is grateful to Steven Ehrlich, Tim Elliot, Leslie Fallaise, Kevin Fetting, Mark McInnis, Jim Murphy, Steven Sheppard, and Jamie Wyllie for helpful comments.

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## I. INTRODUCTION

Canada's financial system has often been criticized for being "too conservative" or "not dynamic enough." Indeed, when compared to the United States, Canadian banks seem to offer fewer loan options, in particular in the mortgage area. This could mean that households are underserved and that there is wide room for welfare improvements via increased financial innovation. Past research suggests that this is not the case, though. For instance, Klyuev (2008) concluded that the Canadian market for housing finance is highly advanced and sophisticated, but financing options were somewhat limited, particularly at terms longer than five years.

This paper builds on past research and argues that the paucity of longer-term loans is caused by a five-year maturity cap on government-guaranteed deposit insurance, and a prepayment penalty limit on residential mortgage loans in the Interest Act. In addition, the availability and cost of residential loans for prime borrowers are comparable to those in the United States. The next two sections describe some of the key features of the Canadian housing finance system, section IV discusses Canadian prime borrower mortgage accessibility, and the last section concludes with some policy suggestions.

## II. KEY FEATURES OF THE CANADIAN HOUSING FINANCE SYSTEM

Mortgage origination in Canada has changed dramatically in the last 40 years, with depository institutions now accounting for the lion's share of the market. Deposit-taking financial institutions held 69 percent of outstanding Canadian residential mortgage debt at end-2007. Of these institutions, the chartered bank share, which currently stands at 56 percent, has grown from 10 percent in 1970. Much of the growth in the bank share came after the 1992 *Bank Act* revision, which allowed the banks to own trust and loan companies that had been dominant players in the market (Figure 1).<sup>2</sup> By contrast, in the United States, the depository institution share of residential mortgage loan holdings has declined from 75 percent to about 30 percent over the same 1970-2007 period. At end-2008, of \$906 billion outstanding residential mortgage loans in Canada, \$566 billion (62 percent) are held by deposit-taking institutions, of which \$452 billion were held by chartered banks.

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<sup>2</sup> Prior to 1954 banks were not even permitted to make mortgage loans, so most loans were made by individuals and insurers (Harris and Ragonetti, 1998). The 1954 Bank Act amendments allowed banks to make mortgage loans insured under the *National Housing Act*, and the 1967 amendments allowed them to make non-insured ("conventional") mortgage loans. They also lifted a six percent interest rate cap on bank loans, which had kept banks out of residential mortgage lending. However, until 1992 conventional mortgages could only be held if their value was below 10 percent of bank deposits. The 1980 amendments were also important because they allowed banks to book conventional loans in mortgage loan subsidiaries that could raise deposits that were exempt from reserve requirements. Finally, the 1992 amendments evened the competitive playing field between banks and other deposit-taking institutions, and allowed banks to own trust companies. (Freedman, 1998)

Mortgage securitization is not as pervasive in Canada as in the United States, despite the shift toward bank origination and stronger government presence in the market. Only \$267 billion (29 percent) of loans have been securitized, compared to about 60 percent of U.S. residential mortgages. \$245 billion of these securitized mortgages are held by special purpose vehicles that issue mortgage-backed securities (MBSs) guaranteed by the government-owned Canada Mortgage and Housing Corporation (CMHC) under the *National Housing Act*.<sup>3</sup> \$142 billion of these NHA MBS were held by the Canada Housing Trust, funded by the CMHC-guaranteed Canada Mortgage Bonds (CMBs) (Figure 2).<sup>4</sup> Only \$24 billion were held by “private label” securitization vehicles. Canadian banks have also started using covered bonds for some of their mortgage funding needs, but the Canadian bank regulator, the Office of the Superintendent of Financial Institutions (OSFI), has imposed issuance restrictions which will limit their importance to about 10 percent of outstanding mortgages (see Box 1).

Mortgage insurance plays a big role in the Canadian mortgage market. Federally-regulated deposit-taking institutions, including all the chartered banks, can only hold “high ratio” loans (i.e., those with loan-to-value (LTV) ratios greater than 80 percent since April 20, 2007, up from 75 percent) if they are insured against default. Hence about 45 percent of all chartered bank-held mortgages are insured. Also, all of the mortgages that back NHA MBSs must be insured. The dominant mortgage insurer is government-guaranteed CMHC, accounting for about 70 percent of all outstanding insurance. Two private insurers, American International Group and Genworth Financial, account for almost all of the rest. Since 1988, the federal government has been providing a 90 percent guarantee to private insurers.<sup>5</sup>

Borrowers can pay down their mortgages at the end of the loan’s term, but prepayment privileges are classified according to whether they are “open” or “closed.” An open mortgage has full prepayment rights similar to those on most U.S. prime mortgages. Closed mortgages allow borrowers to prepay a certain percentage of their mortgage (usually 15–20 percent of the original loan balance) annually, but impose penalties on prepayment amounts that exceed this. The typical penalty is at least three-months of interest on the amount being prepaid.<sup>6</sup>

<sup>3</sup> CMHC is owned by and its financial obligations are a direct obligation of the Government of Canada.

<sup>4</sup> NHA MBS are pass-through securities that are issued in various terms to maturity, but five-year terms have been most popular. CMBs insulate investors from prepayment risk, and pay interest coupons over the full term of the bond and the full principal on the specified maturity date. Most are fixed-rate five-year bonds, but some floating-rate and ten-year bonds have been issued. See Box 2 in Klyuev (2008) for more detail on NHA MBSs and CMBs.

<sup>5</sup> The insurers are required to contribute to a guarantee fund and set aside reserves to absorb losses. The 10 percent guarantee differential recognizes the cost associated with CMHC’s mandate to serve all parts of the country, and other forms of housing such as rental housing. For example, more than one-third of CMHC’s business is in markets that private insurers do not serve, or are less active, such as homes in rural or remote locations, and nursing homes.

<sup>6</sup> On a typical closed mortgage, the actual prepayment penalty depends on when it is made. If it is in the “closed period” (e.g., the first three years of a four or five year mortgage), the penalty is equal to the greater of (a) three months of interest on the prepaid amount, or (b) an interest rate differential (the contractual rate minus the

(continued...)

Open mortgage offerings beyond the one-year term are rare, but an online rate aggregator (RateSupermarket.ca) was showing three-year fixed-term closed mortgage rates of about 4.00 percent in mid-March 2009, versus 7.00 percent on the open counterpart. The rate differential on three-year variable-rate mortgages was only 25 basis points.

### III. TYPICAL FEATURES OF CANADIAN RESIDENTIAL MORTGAGES

Most Canadian residential mortgages have recently been rollover loans that amortize over a 25-year period but reset the terms every six months to five years.<sup>7</sup> Reflecting a very conservative credit culture, the typical mortgage loan has recently been a five-year fixed-rate loan amortized over 25 years. However, terms have been shortening, amortization periods lengthening, and adjustable rates have been recently more popular.<sup>8</sup> The mortgage insurers, including CMHC, started to insure 40-year loans in 2006, but in July 2008 the government announced that it was pulling the maximum term back to 35 years and introducing a minimum five percent down payment (it had been as low as zero since 2004 for qualified borrowers).<sup>9</sup> These changes became effective on October 15, 2008.

The conventional wisdom is that the Canadian preference for shorter terms relates to the more important role (versus in the United States) of retail deposits. The popularity of five-year retail term deposits, plus the banks' asset-liability gap management, goes a long way to explaining the attractiveness of five-year mortgage terms. Furthermore, with the Canadian Deposit Insurance Corporation (CDIC) only guaranteeing retail term deposits out to five years, the rates needed to attract retail funding beyond five years is exorbitant.

However, another explanation lies in Section 10 of Canada's *Interest Act* which effectively gives homeowners the right to prepay mortgages with a term to maturity greater than five

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current rate with the same remaining term) applied to the prepaid amount. During the "closed period" (e.g., the last two years of a five-year term), the penalty is equal to the three months of interest on the prepaid amount. To these penalties are added a "reinvestment fee" that starts at about \$500 in the first year, sliding down to \$300 in the third year, and zero thereafter. However, if it is a refinancing transaction with the same bank, the penalties may be lower. (These rates were taken from a Bank of Nova Scotia term sheet.)

<sup>7</sup> Twenty-five-year terms had long been the norm prior to the period of rising rates that commenced in the late sixties. For example, 25-year terms were required for NHA-insured loans prior to 1969, when the minimum term was dropped to five years, to three years in 1978, one year in 1980, and then to adjustable rates in 1982. However, adjustable-rate mortgages only became eligible for NHA MBS and CMB in 2004. Bill C-66 which was passed in 1999 gave CMHC new authorities. Using these authorities CMHC created the CMB program in 2001 and began expanding the type of mortgage eligible for the program soon thereafter. Variable rate mortgages securitized through NHA MBS were introduced in 2004.

<sup>8</sup> According to the CAAMP (2008) survey, 16 percent of mortgage had amortization periods longer than 25 years, but only 10 percent had terms longer than five years. Only 27 percent had adjustable rates, but that had grown to about 40 percent for 2008 originations.

<sup>9</sup> The government also introduced more stringent asset and income documentation standards and consistent credit scores for new mortgages. The insurers' extended amortization mortgage insurance surcharges are 20 basis points for amortization periods longer than 25 years up to 30 years and 40 basis points up to 35 years.

years after five years of payments for a fixed prepayment penalty (i.e., the three months interest). Three months of interest is likely less than the penalty charged during the first five years of mortgage terms. Offsetting this to some degree is the portability of Canadian mortgages.<sup>10</sup> Lenders have no choice but to pass on the higher cost of hedging longer mortgage prepayment risk for longer mortgages in the form of higher interest rates.

Figure 3 shows the combined effect of the five-year cap on CDIC deposit insurance and prepayment penalties on the term structure of interest rates on closed mortgages. Note the gapping up of rates past the five year point. This suggests that if the government wants to encourage the development of longer-term mortgage markets, it might consider dropping both caps. This conclusion would be more robust if it were possible to obtain time series of fixed-term mortgage rates beyond five years, but the availability of such rates has been spotty. Similarly, time series of term deposits and guaranteed investment certificates beyond five years of maturity could have provided useful supporting evidence, but they are also unavailable. Hence, for now this anecdotal evidence for the impact of the five-year cap will have to suffice.

### **A. Canadian Mortgage Interest Rates**

Direct comparisons of fixed-rate mortgage costs are complicated by the fact that the term of “long-term” mortgage in Canada is five years, and thirty years or more in the United States. However, Figure 4 compares the two series as spreads against their respective benchmark interest rate swap rates - Canadian five-year fixed-rate mortgage rates against five-year swap rates, an U.S. 30-year rates against 10-year swap rates, to reflect likely prepayment activity. On average, during the plotted period (end-month September 1999 to January 2009) the Canadian five-year conventional rate was about 110 basis points above the U.S. thirty-year conforming rate.<sup>11</sup> Hence, at first blush, Canadian prime borrowers appear to be paying more for fixed-rate mortgages than their U.S. counterparts, particularly after accounting for the U.S. comparator’s longer term (longer rate lock in plus the “free” prepayment option).

On the other hand, the Canadian rates used in Figure 4 are “posted” rates which overstate actual transacted rates, typically by more than 100 basis points. For example, on February 20 the five major Canadian banks were “posting” 5.79 percent, but four of them were offering “specials” at 4.49 percent. The Canadian Association of Accredited Mortgage Professionals (CAAMP) estimates that, on average, recent posted rates have exceeded transacted rates by 159 basis points (CAAMP, 2008). Also, the U.S. thirty-year conforming rate series reflect the

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<sup>10</sup> U.S. homeowners that relocate must prepay their existing mortgages and take on a new one at prevailing rates.

<sup>11</sup> Comparing variable- or adjustable-rate mortgage (VRM or ARM) costs is complicated by the fact that, whereas Canadian VRMs are fairly plain vanilla, U.S. ARMs embed numerous bells and whistles, such as “teaser rates” (see Kiff and Mills, 2007).

payment of upfront points. For example, on February 19, 2009, the posted conforming rate was 5.04 percent with 0.7 points upfront, which is equivalent to about 5.34 percent (plus 30 basis points) with zero points. Hence, when all of these factors are considered, it is hard not to conclude that Canadian fixed-term rates on prime mortgage loans are quite competitive with their U.S. counterparts.

## B. Origination and Prepayment Costs

It common to say that mortgage loan prepayment is a free option in the United States, whereas it is very expensive in Canada. However, to compare effective prepayment costs, it is important to factor in the higher origination costs and upfront “points” typically charged on U.S. mortgage loans (Table 1). A point is one percent of the loan amount. For example, on a \$240,000 loan, typical origination fees for both new loans and refinancing range from \$1,000 to \$3,000. In addition, the borrower would have to pay about \$1,000 of settlement and closing costs and fees, plus about \$1,000 of various state and local government taxes.<sup>12</sup> Canadian borrowers pay about \$1,800 in upfront fees and taxes, but only about \$1,100 on the refinancing.<sup>13</sup>

**Table 1. Non-Interest Rate Mortgage Cost Comparison<sup>a</sup>**

	Canada (Canadian dollars)		United States (U.S. dollars)
	Purchase	Refinancing	Purchase and Refinancing
Origination Fees <sup>b</sup>	n/a	n/a	\$1,000 to \$3,000
Settlement Costs	\$1,700	\$1,000	\$1,000
Recordation Taxes	\$100	\$100	\$1,000
Prepayment Penalty	n/a	\$500 + \$2,500	n/a
Upfront Points	n/a	n/a	varies
Total Cost	\$1,800	\$4,100	\$3,000 to \$5,000 plus points

a. The costs pertain to a \$240,000 mortgage at a five percent interest rate (for purposes of calculating the Canadian prepayment penalty).

b. U.S. origination fees vary considerably from lender to lender, but they are fixed with respect to the amount borrowed.

c. The Canadian prepayment penalty during the closed period is equal to a “reinvestment fee” that varies from \$500 in the first year down to \$300 in the third year, and zero thereafter, plus the greater of three months of interest and the interest differential.

<sup>12</sup> These state and local mortgage transaction taxes would be on top of about \$1,000 of land transfer taxes that would be payable on a home purchase transaction.

<sup>13</sup> The Canadian costs are based on a transaction in the City of Ottawa in the Province of Ontario provided by Steven Sheppard of Ottawa’s BrazeauSeller LLP.

In addition, U.S. borrowers often opt to pay upfront points on fixed-rate mortgages to reduce the interest rate on the entire mortgage loan. For example, on a \$240,000 30-year fixed rate mortgage loan, on February 14 [AimLoan.com](http://AimLoan.com) was offering the following three options: (i) annual interest of 5.25 percent with zero points; (ii) 5.00 percent with 0.5 percentage points; and (iii) 4.75 percent with one percentage point.<sup>14</sup>

Lastly, U.S. lenders may charge for rate lock-ins, whereas they are generally free of charge in Canada. A rate lock-in is a lender's promise to hold a certain interest rate for the borrower while the loan application is processed. Canadian lock-ins also typically give the borrower the benefit of any rate declines that occur between the loan commitment is made and settlement.

When all of this is put together, the effective prepayment penalties in the United States and Canada seem to be comparable, i.e., the extra costs of refinancing a mortgage loan in the United States, plus upfront points, equate, or maybe even exceed, the three-month interest penalty paid by Canadian borrowers.

### **C. Mortgage Insurance**

Mortgage insurance (MI) plays a big role in setting mortgage lending standards in Canada. Prior to the passage of the 1967 Bank Act amendments federally-regulated depository institutions were not permitted to hold uninsured conventional mortgages, and until 2007 such mortgages were subject to a 75 percent LTV ceiling (it is now 80 percent). NHA MBS are also bound by the same criteria. Most Canadian MI is underwritten by CMHC, but several private-sector firms compete in this space.<sup>15</sup>

Unlike in the United States, where MI covers only losses that exceed the LTV ceiling (e.g., 20 percent for an 80 percent ceiling), in Canada it covers the full amount of the loan. Also, in Canada the entire premium is paid upfront by the borrower, whereas in the United States part is paid upfront by the lender and part paid monthly by the borrower (see Table 2). In addition, in the United States the borrower can cancel the insurance when the LTV, based on the current appraised value, drops through the ceiling (e.g., 80 percent).

Comparing the ultimate cost of the two insurance regimes is beyond the scope of this paper, but assuming that U.S. lenders pass the upfront premia through to the borrower, the costs are probably comparable. A thorough cost comparison should be done on a net present value

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<sup>14</sup> This offer was based on a mortgage loan to a prime borrower who is putting up a 20 percent down payment on a home in Fairfax County in the state of Virginia. Other lenders may charge more or less. For example, the Bank-Fund Staff Federal Credit Union was charging a \$1,250 origination fee. See Stanton and Wallace (1998) for the economics of points. Styron, Basciano and Grayson (1995) discuss the tax aspects of upfront points (when paid on the purchase of a principal residence they are tax deductible).

<sup>15</sup> However, the federal government covers the 90 percent of private insurer losses.

(NPV) basis, accounting for the possibility of prepayment or refinancing in the U.S. case. For example, for an 80.01 to 85 percent LTV mortgage at a five percent per annum discount rate, the NPV of the U.S. 32 basis point annual premium is less than the Canadian 175 basis point upfront premium up to seven years. However, for the more leveraged mortgages, the breakeven point occurs at five years.

**Table 2. Comparison of Canadian and U.S. Mortgage Insurance Premia on Prime Loans**

*(Source: CMHC, Fannie Mae and Freddie Mac)*

LTV	Canadian - paid upfront	United States - paid annually <sup>1/</sup>
80.01 – 85%	175 bps	32 bps
85.01 – 90%	200 bps	52 bps
90.01 – 95%	275 bps	67 bps

1/ The U.S. premia do not include recently introduced upfront loan-level price adjustments and adverse market delivery charges, that apply to loans to borrowers with FICO credit scores below 720.

#### IV. PRIME BORROWER MORTGAGE FUNDING ACCESS

Payment affordability criteria are similar to those in the United States for prime borrowers.<sup>16</sup> For example, in order to qualify for mortgage insurance, gross debt service should usually not exceed 32 percent of gross household income, and total debt service cost should usually not exceed 40 percent (versus 31 and 43 percent to qualify for U.S. Federal Housing Administration (FHA) insurance).<sup>17</sup> However, the approval criteria for adjustable-rate loans are usually based on the three-year fixed-term rate, which is usually the highest fixed rate inside of the five-year term, whereas U.S. practice is to use the current floating rate.<sup>18</sup> Canada also has a small “Alt-A” market aimed mainly at self-employed people who have difficulty documenting their stated income. In 2007, CMHC introduced a “Self-Employed Simplified” mortgage insurance program.

<sup>16</sup> To qualify as a prime borrower for CMHC MI purposes, the borrower or guarantor must have a minimum credit score of 620 (it was 600 prior to October 15, 2008). If a lender wants to insure a loan with an LTV between 60 and 80 percent, the credit score must be at least 580, which is the prime threshold in the United States. No minimum credit score is required to insure loans with LTVs below 60 percent. In Canada, three firms offer credit scoring services. They are Equifax, Trans Union and Experian, and base their formulas on that developed by Fair Isaac Credit Organization (FICO).

<sup>17</sup> The debt-to-income thresholds for mortgages guaranteed by Fannie Mae and Freddie Mac (i.e., “conforming” loans) are 28 and 36 percent.

<sup>18</sup> In fact, until recently, it was U.S. practice to use a fixed “teaser rate” that applied to the first two or three years of many adjustable-rate mortgages (ARMs), for affordability calculations (Kiff and Mills, 2007). However, some Canadian lenders have started to qualify adjustable-rate loans on the basis of current floating-rate loan rates.

Canadian borrowers have faced larger down payment requirements than their U.S. counterparts but they are now roughly in line.<sup>19</sup> Federally-regulated deposit-taking institutions have been able to underwrite insured mortgages with LTVs as high as 95 percent since 1992, and for periods of time during the late seventies and early eighties.<sup>20</sup> There are no limits to the individual loans that CMHC and the other mortgage insurers will insure. By contrast, Fannie Mae and Freddie Mac MI is only available on loans up to the “conforming limit” (\$417,000), which varies by geographic areas, although in 2009 this limit was raised (to \$625,500) for loans on single-family homes in “high-cost” areas.

The Canadian mortgage market is not as “atomized” as the U.S. market. Not only is the securitization rate lower, but far fewer loans are initiated by brokers (about 30 percent versus 70 percent in the United States). Also, whereas U.S. brokers actually originate mortgages, Canadian mortgage brokers play only a middleman role. Most non-prime loans are brokered. In addition, banks service their own mortgage portfolios, although non-bank lenders usually retain sub-services (Klyuev, 2008).

Key features of the Canadian mortgage market keep delinquency rates in check (Figure 5). In particular, lenders have recourse to all the borrower’s other assets and income if the loan goes to foreclosure. In the United States, such recourse is either legally impossible on owner-occupied residential property, or too expensive, or impractical (Pence, 2006). In addition, virtually all mortgage payments are made via auto debit from a borrower's bank account, while this option is less common in the United States. Also, Canadian borrowers can opt for weekly, biweekly, semimonthly, or monthly payment schedules, in order to smooth cash flows and reduce interest costs. Almost all U.S. mortgages require that payments be made at the beginning of the month.

## V. SUMMARY AND POLICY SUGGESTIONS

Prime Canadian homeowners are well served by their mortgage finance system, with accessibility and costs roughly in line with those in the United States. Although Canadian mortgages impose what seem to be hefty penalties on prepayments, when all costs of originating and refinancing are considered, the effective penalty is comparable, if not smaller, than those paid by U.S. homeowners. Furthermore, interest rates on fixed-rate mortgages are comparable, after accounting for some peculiarities in the officially published

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<sup>19</sup> In the United States, 50 percent down payments were required until the FHA introduced loan insurance in 1934. After that, the down payment requirement quickly dropped from 25 percent to 10 percent by the late 1940s. In Canada, until 1954, 20 percent down payments were required on NHA-insured loans and but 40 percent was the norm on conventional mortgages (Harris and Ragonetti, 1998).

<sup>20</sup> For example, in the early seventies, CMHC’s Assisted Home Ownership Program (AHOP) insured mortgages with LTVs greater than 95 percent.

rates in both Canada and the United States (e.g., the Canadian practice of deeply discounting posted rates, and the U.S. practice of buying points upfront).

As a result, even though Canadian mortgage markets may seem less innovative than in the United States, consumers seem to be well served. In particular, homeownership in those countries is virtually identical at about 68 percent of all households.

However, policymakers could consider eliminating barriers to the development of a more vibrant market for fixed-rate mortgage loans longer than five years, embedded in the *Interest Act* and CDIC deposit insurance. Until that happens, rates on fixed-term residential mortgages beyond the five year term will remain uneconomical for most borrowers. Also, longer fixed-rate terms would help households to better manage their financial risks. Of note, in 2008 the Canadian government expanded the CMB program to include a ten-year maturity that may contribute to the availability of longer-term mortgages in Canada.

It is possible that, from a broader perspective, policymakers may prefer to keep mortgage terms short, to reinforce the counter-cyclical impact of short-term interest rate swings. As an aside, from 1984 to 1997, CMHC did offer mortgage rate insurance to help households manage their interest rate risk, which would seem to undermine the argument that the effective term cap is designed as a macroeconomic stabilizer (Box 2).

### Box 1. Canadian Covered Bond Issuance

In Europe, covered bonds have provided banks with cost-efficient secured financing for over 200 years, and they were first issued by a Canadian bank in October 2007. Covered bonds are backed by identifiable and legally “ring-fenced” pools of loans, and in the event of issuer insolvency bondholders have an unsecured claim on the issuer plus a priority claim over other unsecured creditors on the pool. Because the assets remain on the balance sheet, the issuing bank retains the ultimate credit risk and is encouraged to maintain loan quality. This stands in contrast to the situation with traditional securitization vehicles, such as mortgage-backed securities (MBSs), where the issuing bank has little if any “skin in the game”. On the other hand, covered bonds do not provide the capital relief associated with securitization.

The Office of the Superintendent of Financial Institutions (OSFI) has set out the rules for covered bond issuance by Canadian deposit-taking institutions, including an issuance cap of four percent of the institution’s total assets, which implies \$95 billion of potential issuance (versus total outstanding mortgages of about \$800 billion). The cap was put in place to limit the size of the claims that this preferred class of claimant would have on the institution’s balance sheet. Similar limits have been placed on U.K. and U.S. covered bond issuance. Canadian covered bonds also resemble U.K. and U.S. covered bonds in that they are “structured” covered bonds, in which all of the terms and conditions are defined in a bilateral contract between the issuer and bondholder. The terms and conditions of covered bonds issued in most European countries (E.g., German *Pfandbriefe* and Spanish *Cedulas*) are defined in country-specific legislation.

Banks are motivated to issue covered bonds because they help them to diversify their market-based funding sources beyond the MBS market, which can occasionally be constrained (Gravelle and McGuinness, 2008). Also, they represent cheaper funding than unsecured senior debt, because covered bonds carry credit ratings that are higher than those on the issuing bank, because they are effectively collateralized by the cover pool. For Canadian banks, covered bonds also offer some advantages over CMBs, in that they offer greater flexibility around assets, and simpler asset-liability matching processes.

The Royal Bank of Canada (RBC) was the first to set up a covered bond program, and issued €2.0 billion five-year bonds in October 2007 and €1.5 billion ten-year bonds in June 2008. The maximum program size is €15 billion, which is about two percent of RBC’s total assets. The Bank of Montreal (BMO) has established a €7 billion program (out of which they have issued €1.0 billion five-year bonds), and the Canadian Imperial Bank of Commerce (CIBC) has set up an €8 billion program (€2.324 billion two-year bonds). The Bank of Nova Scotia has set up a €15 billion program, but has yet to issue any bonds. The cover pools of the RBC program are comprised of only conventional uninsured residential mortgages, the CIBC program of only insured mortgages, and the BMO program a mixture of both.

It is notable that European covered bond markets remained functional through most of 2008, while most private-label MBS markets (i.e., not issued by the U.S. government-sponsored enterprises) were shut down. However, since late-2008 banks’ ability to issue covered bonds has been severely impaired by the impact of government guarantees, rating changes and de-leveraging of the financial sector. For example, government-guaranteed bonds have undermined demand for covered bonds because they are eligible for a zero risk weight under Basel II and the European Capital Requirements Directive, versus a 10 percent risk weight for covered bonds.

**Box 2. CMHC Mortgage Rate Protection Program**

CMHC offered a Mortgage Rate Protection Program (MRPP) from 1984 to 1997. The outstanding mortgage balance could be protected against rate increases over any inter-renewal period for a single 1.5 percent upfront premium. There was a 200 basis point deductible and a 1,000 basis point cap, and the benefit (capped at 75 percent of the payment increase) is paid as a monthly subsidy. For example, if rates are at a five percent level when the policy was taken out, a claim would be paid only if the renewal rate is greater than seven percent, but would not cover for rate increases above fifteen percent. Also, the post-renewal period covered is equal to the original term regardless of the term of the renewal. The program was not very successful, and was cancelled in 1997. However, Sharp (1986) has shown that it was the execution, and not the concept, that was flawed, in that the fixed premium of the insurance was too expensive for short inter-renewal periods.

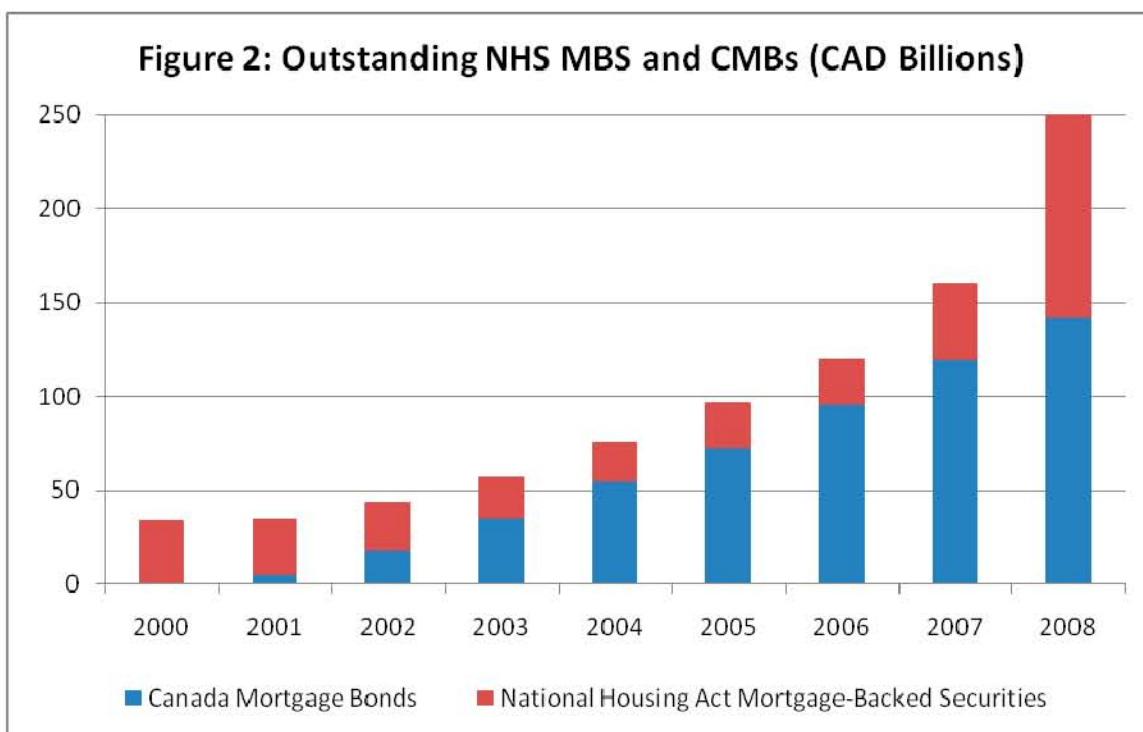
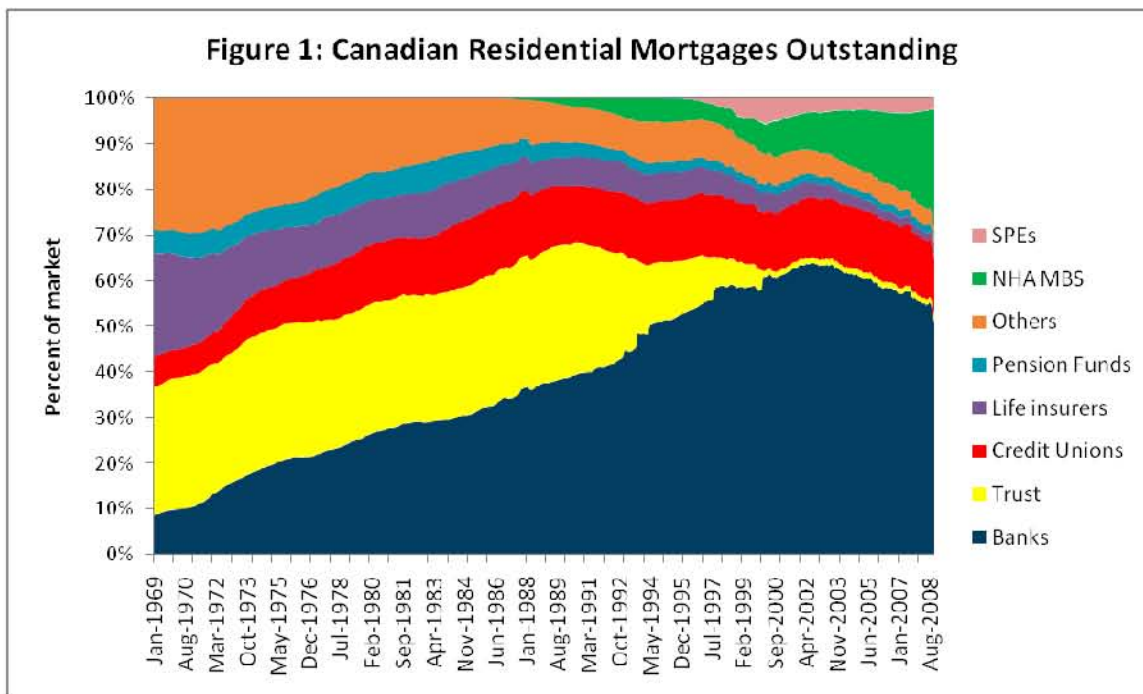


Figure 3: Canadian Bank Fixed-Term Mortgage Rates (February 20, 2009)

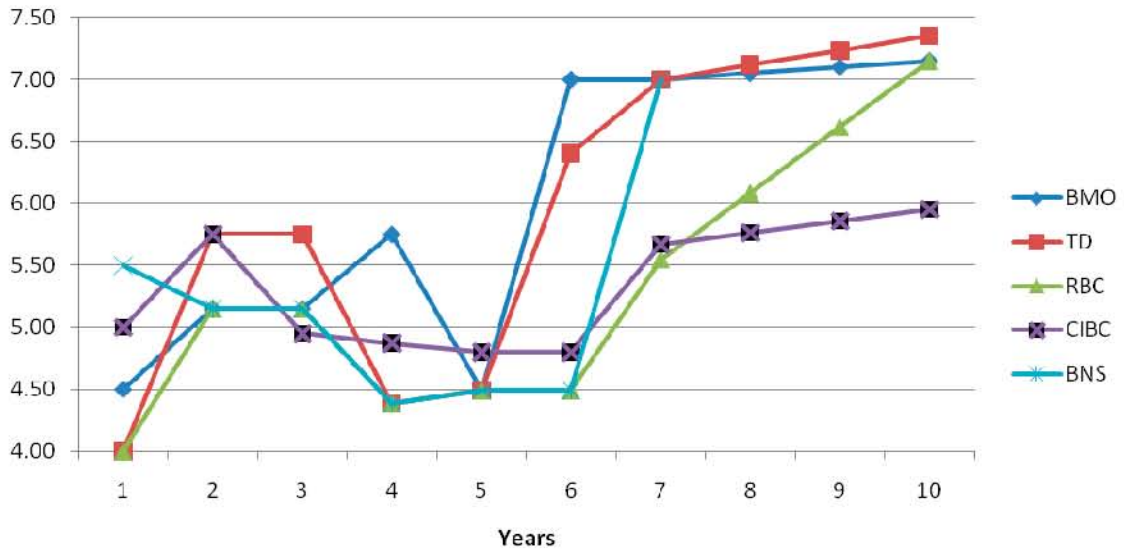
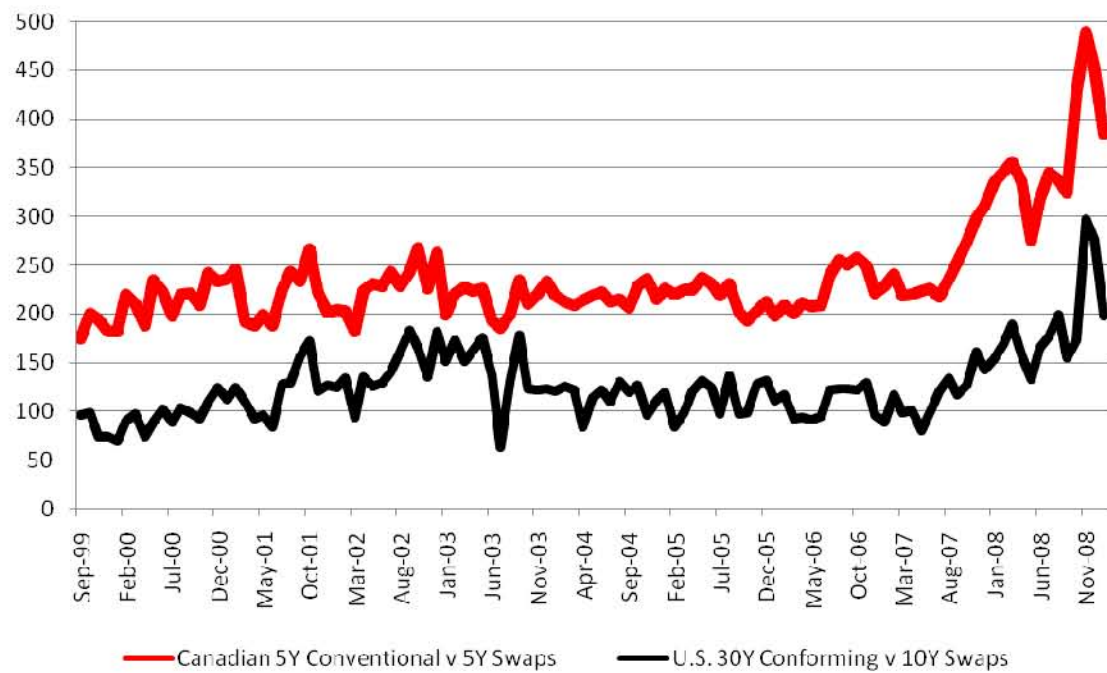
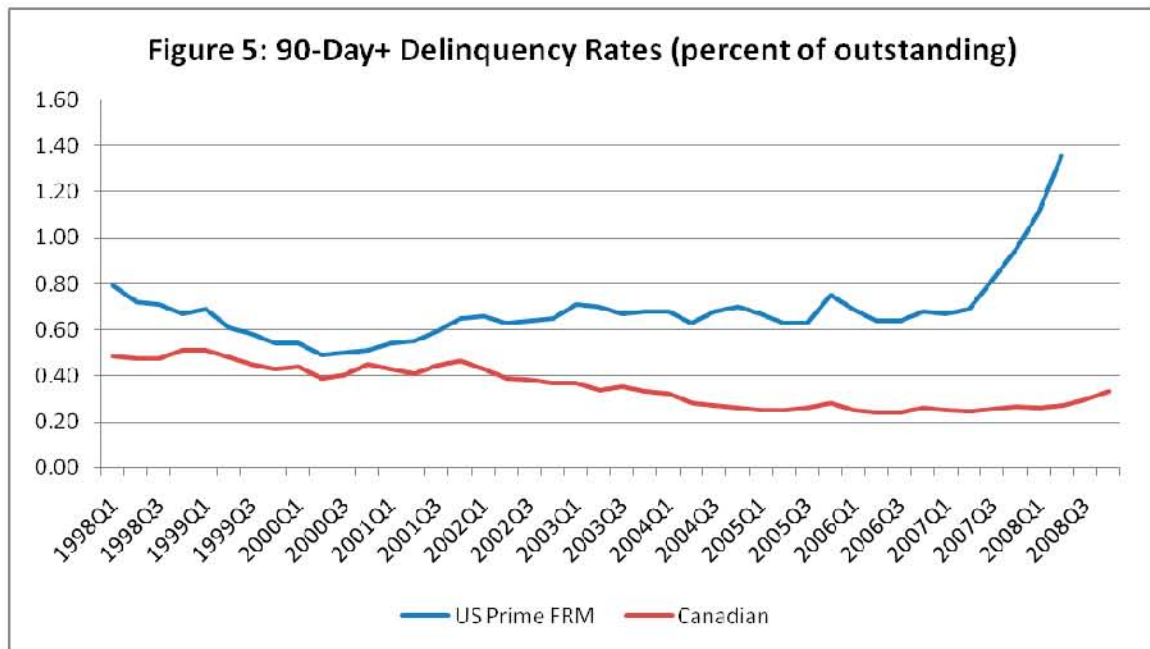


Figure 4: Residential Mortgage versus Interest Rate Swap Rates





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