# 13

# It Is History but It's No Accident

## *Differences in Residential Mortgage Markets in Canada and the United States*

*Angela Redish*

Residential mortgages are typically the largest debts that a household takes on and are also a significant share of the credit in an economy. This latter makes the structure of the mortgage market important for both financial stability and for the transmission of monetary policy. The financial crisis of 2008 is frequently attributed to innovation in U.S. mortgage markets that fed a housing bubble which when it burst inflicted deep damage to the U.S. financial system. This sequence has led many economists to a renewed focus on the close connection between mortgage markets and financial stability.

A recent paper (Bordo et al. 2014) contrasted the stability of the Canadian financial system in 2008 with the financial fragility in the United States and noted that a similar contrast could have been drawn about crises in 1933, 1907, or 1896. The paper argued that the roots of Canadian (relative) financial stability lie in the very different histories of the U.S. and Canadian banking systems and that the oligopolistic Canadian system was embedded in a political economy that emphasized stability.

The goal of this chapter is to connect these two stories – to examine channels by which the historical evolution of the banking system had an impact on the structure of mortgage markets. The chapter begins by characterizing mortgage markets in Canada at the beginning of the twentieth century and then analyzes the changes in mortgage finance that resulted from (1) the Great Depression and the postwar housing boom and (2) the inflationary era of the 1970s, and the financial innovations of the 1990s. In each case the market for residential mortgages changed in different ways in the United States and Canada, and in each case the underlying banking system structure was crucial in the nature of that evolution.

Many thanks to Jim MacGee for his insightful discussion, to Eric Bond and Siavash Tahan for research assistance, and the Social Science and Humanities Research Council of Canada (SSHRCC) for financial support. As always, many thanks to Mike Bordo for his comments and suggestions.

The analysis in this chapter contains a response to the question posed by John Campbell (2012, p. 1), who, having characterized the wide variation in mortgage market structure across countries, asked "whether this variation has deep fundamental causes or is the result of historical accident." The answer is both, at least in the case of the comparison between Canada and the United States: it is history, but it is no accident.

By the year 2005, residential mortgage lending in the United States and Canada looked very different. In the United States, most residential mortgages were long-term (thirty-year) loans to households that were originated by banks and then were sold ("distributed") to a government-sponsored entity such as Fannie Mae, which securitized the loans and sold them in carefully constructed tranches to investors in the United States and internationally – MacGee (2011) reports that in Canada in 2007 roughly 25 percent of mortgages were securitized, compared to 60 percent in the United States. In Canada mortgages were (typically) five-year loans made by a bank that then kept the loan on its own balance sheet. The extent of "subprime" lending was far higher in the United States (in Canada subprime lenders had a market share of roughly 5 percent compared to 22 percent in the United States). Furthermore, in Canada subprime mortgages were primarily loans to individuals amortizing over a longer period rather than interest-only mortgage, for example (MacGee 2009). In both countries governments provide some insurance – implicit or explicit – either of the loan itself or of the securitized instruments.

Without being excessively monocausal, this chapter argues that the different structure of financial institutions in the nineteenth century – in particular, the fragmented system of unit banking in the United States in contrast to the nationwide branch banking system in Canada – had an important impact on the differences in the structure of mortgage markets at the end of the twentieth century. Some specifics suggest the line of argument. The collapse of U.S. financial institutions in the Great Depression led to (1) regulation Q that limited interest rates on deposits in U.S. banks, (2) the establishment of Fannie Mae, and (c) the widespread use of long-term mortgages. In the 1970s, the maturity mismatch on the balance sheets of financial institutions, combined with the inability of banks to pay market (high) interest rates on deposits, led to failures of savings and loan corporations and difficulties for banks to fund mortgages. The need to tap into national funding markets and to access funds in money market mutual funds (MMMFs) created incentives to securitize mortgages.[1] In Canada, the banks did not face a maturity mismatch because the mortgages typically had a five-year term, and they did not need to securitize

[1] There were also important differences in how Canada and the United States regulated off-balance sheet related financial institutions. See later and MacGee (2009).

to access nationwide markets because the banks had branches across the country.

The lessons from this viewpoint are twofold: first, the stability that emerged from the Canadian institutions came at a price. In Canada, households have to refinance their mortgages roughly every five years, and so have to absorb interest rate risk that in the United States is borne (for a price) by the financial sector (Courchane and Giles 2002). Second, the early 2000s is not the end of the story. Although Canadian banks can readily tap national funding sources, they may wish to tap global funding sources, in which case securitization will increase.

## RESIDENTIAL MORTGAGE LENDING IN CANADA FROM 1900 TO THE 1930S

The Canadian residential mortgage industry in 1900 looked very different from its structure today, and although there were important differences between Canada and the United States, they were less stark than today. The "terms and conditions" in both countries were similar. A typical residential mortgage was a loan for five years on which interest was paid semiannually. Some repayment of principal might accompany the interest payments but it would be a small portion of the loan and the borrower would be obliged to repay the majority of the principle at the end of five years. Typically, that repayment was made through a rollover of the outstanding balance. The loan-to-value ratio was usually less than 50 percent.[2]

Figure 13.1 shows the available (and incomplete) data on the type and amount of mortgage lending as a proportion of gross national product (GNP).[3] We have normalized the data by showing the stock of mortgages outstanding relative to gross domestic product (GDP). In general, this is useful as it shows the changes in the economy's use of mortgage debt; however, it does not differentiate between increasing use of mortgages and declines in GDP. Thus, although the ratio rose in the 1920s, reflecting a building boom, it also rose in the early 1930s, reflecting the collapse of nominal GDP.

Significant gaps in the data include the lack of any aggregate data on personal mortgage lending before 1926 and the absence of data on mortgages by Trust and Mortgage Loan Companies between 1913 and 1926.[4]

[2] This picture of a "typical" Canadian residential mortgage is drawn from Poapst (1962, pp. 66–67). Life insurance companies were legally prohibited from making loans with more than 60 percent loan to value. (Woodard 1959, p. 9).

[3] Although the objective is to report only lending on residential mortgages, farm mortgages may be included in the early data.

[4] Trust and Mortgage Loan companies could have a federal or provincial charter, with the latter restricting the firm's activity to the province in which it was chartered. Prior to 1913 the federal government assembled data on all financial institutions but after 1913 the data

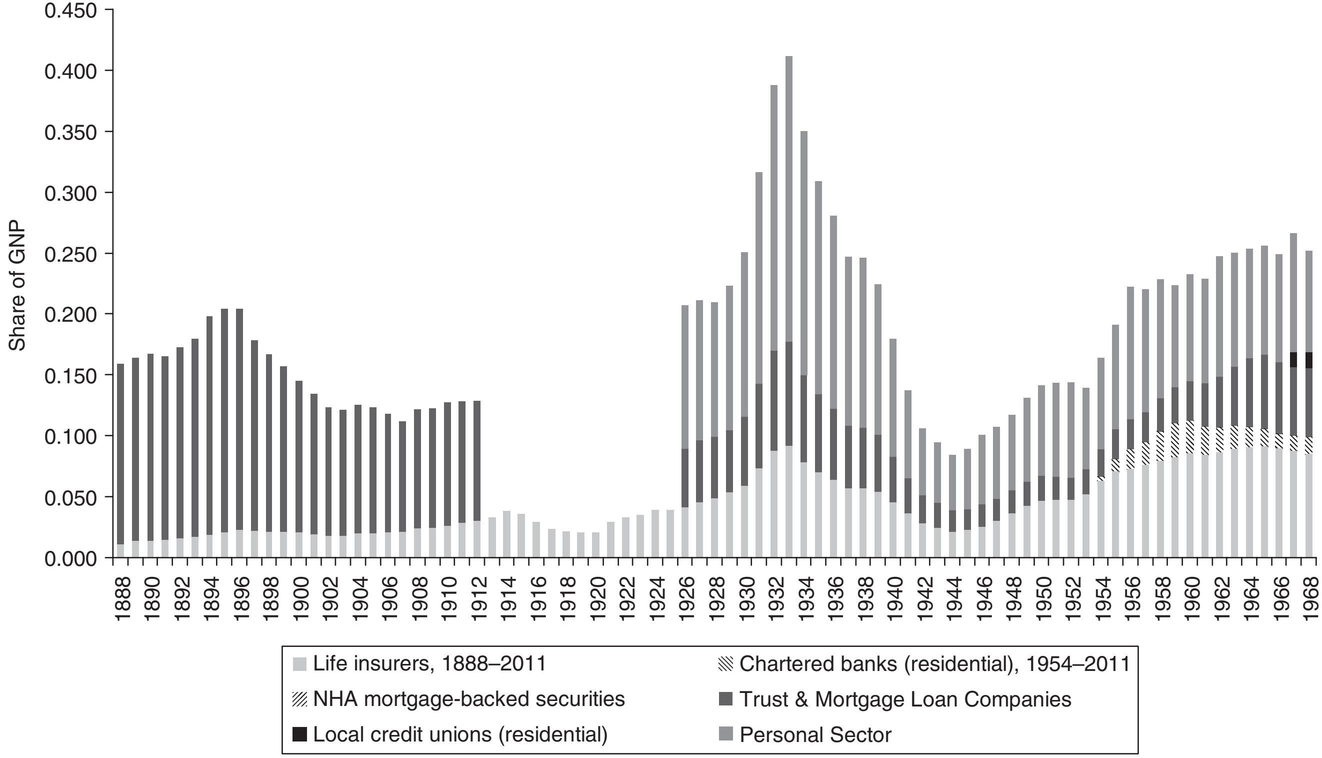


**Figure 13.1.** Outstanding mortgage debt as a proportion of GNP by institution type in Canada.

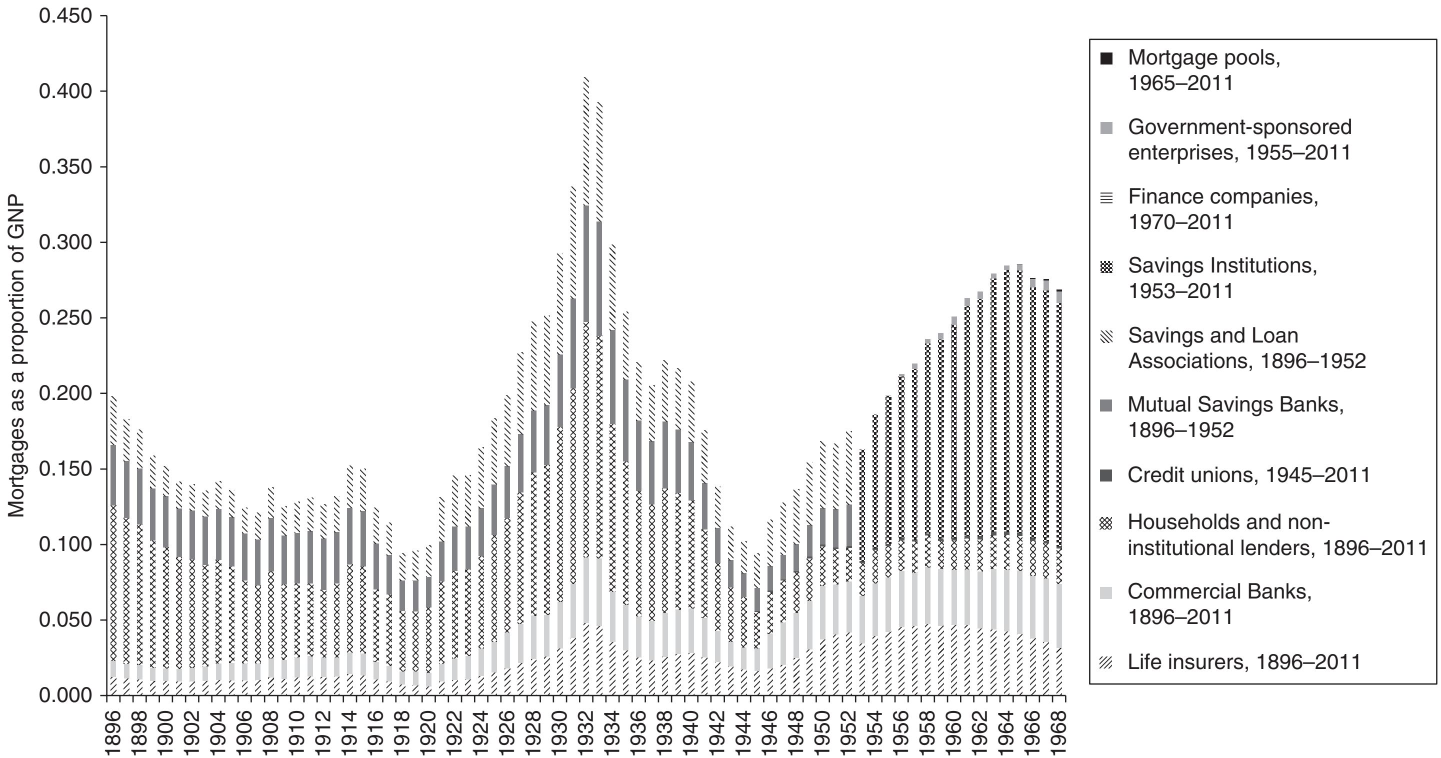


**Figure 13.2.** U.S. residential mortgages as a proportion of GNP by institution type.

Nonbank financial institutions were important lenders for residential mortgage loans, but the noninstitutional sector was also extremely important. Naturally, data on the size of that part of the market are difficult to come by. There are estimates of the extent of "personal" loans after 1926 and they suggest that just over half of stock of residential mortgage loans were held in the "personal" sector. The personal sector included both loans between individuals and by unregistered pension funds, and the Canada Mortgage and Housing Corporation (CMHC) emphasizes that the data are sketchy.[5] This last caution advises against relying on details of the data, but it does not preclude the conclusion that the noninstitutional sector provided a major share of the funding of mortgages prior to the Depression.

Some further details on the role of the personal sector are provided by an analysis of a (5 percent) longitudinal sample of first mortgages from Hamilton, Ontario. This sample shows the proportion of mortgages held by individuals (i.e., as creditors) to have been roughly 90 percent from 1901 to 1921 and then to have declined gradually to 60 percent in 1951 (Harris and Ragonetti 1998, p. 231).[6] Analysis of the housing market more broadly shows that the up until the mid-1950s, "a quarter of all families acquired their homes without going into debt" (Harris and Ragonetti 1998, p. 233), often because they had built their own home.

The key financial institutions making mortgage loans were life insurance companies, trust companies, and mortgage and loan companies.[7] As Figure 13.1 shows, the life insurance companies held a relatively small share of the market in the late nineteenth century, but reflecting the dramatic growth of the life insurance industry in the early twentieth century, they held a larger share than the combined trust and mortgage and loan companies by the 1920s.

At the turn of the century mortgage loan companies were the largest institutional lender for mortgage loans. The companies had grown out of building societies, which had begun as cooperative terminating building societies but by 1900 were mostly for-profit incorporated institutions. They raised their funds by selling debentures in Canada (an average of 20 percent of funds) and the United Kingdom (43 percent of funds), and

for provincially regulated mortgage and loan companies was not collected. In 1926 collection resumed.

5 The data come from a report commissioned by CMHC in 1970 (CMHC Economic Research Bulletin Number 77, Appendix D) and subsequently lost – only the table remains. See Smith and Sparks (1973, p. 12) and Harris and Ragonetti (1998, p. 224).

6 The authors argue that the share of the number of mortgages exceeds the share of the value, which might have been closer to 85 percent in the early years.

7 Only consolidated data for trust companies and mortgage loan companies are available for the period before 1914.

to a lesser extent from deposit-taking (20 percent). They were regulated as to minimum capital and leverage ratios as well as having restrictions on the types of assets (mortgages, cash, and government securities) they could hold.[8]

Trust companies held a smaller share of the market than the other two types of financial institutions but most of the data sources combine mortgage loan and trust company balance sheets so that we report the amalgamated totals. An important difference between the two is that for trust companies, mortgages represented a "use" of funds to support their core business – trust services. For mortgage loan companies, mortgages were their core business and they sold debentures to support the mortgage lending.

Finally, we discuss the institutions that we don't see. The Canadian banks were prohibited from lending on mortgages until 1954. This is in contrast with the United States, where banks were important mortgage lenders, and where deposits were an important source of mortgage funds at both banks and savings and loan companies. From Confederation to the Great Depression the Canadian banks were the largest financial institution in Canada, measured both in terms of the size of the sector and in terms of the size of individual institutions.[9] At Confederation the decision was made to continue the colonial system of chartered banks. In 1900 there were thirty-five banks, but primarily through mergers and acquisitions this had been reduced to eleven by the Great Depression. All were branching banks, and the five largest banks held 90 percent of industry assets and had branches across the country as well as internationally.

There was no central bank and very little monitoring of banks. Indeed, until a major bank failure in 1923, there was no government inspection of banks. There were strict minimum capital requirements, double liability of shareholders, restrictions on note issues, and capital adequacy requirements. There were also tight rules on the assets that banks could hold. These rules were based on the "real bills doctrine" that underlay the pre-colonial banking system, and essentially required banks to lend by "discounting" real bills – IOUs drawn against stock in trade. Banks could also hold government securities.

It is always harder to explain an omission than a commission. The consequences of the banks' absence from mortgage lending were the size of the mortgage loan companies and the amount of personal lending. The

[8] See Neufeld (1972, chapter 7) for a detailed description of the legislation affecting building societies and mortgage loan companies.

[9] In 1900 the assets of the chartered banks were 50 percent more than the sum of the assets of all other financial institutions. The discussion in this paragraph draws on Bordo et al. (2014).

banks themselves seem to have never expressed the desire to get into the mortgage business, and as we see in the text that follows were hesitant to enter when it was first proposed.

## THE IMPACT OF THE DEPRESSION AND POSTWAR HOUSING BOOM

The Canadian mortgage market changed significantly during the Great Depression as the federal government intervened in the market, and the nature of mortgage instruments changed in response. This is in parallel with events in the United States, but the similarities are limited. In the United States, the government intervention was driven largely by difficulties in the credit market; in Canada the objectives were increasing employment and improving housing (Woodard 1959, p. 32). Further, although the interventions are significant because of their persistence, the scale of intervention in Canada was much smaller than that in the United States.

The extent of mortgage difficulties in Canada during the 1930s is not well established. Reports from mortgage loan and trust companies (which combine residential, farm, and nonfarm mortgages) show a spike in mortgages in distress, but at a peak of 2 percent of all mortgages (see Figure 13.3). These apparently low rates of compulsory proceedings are at odds with the extensive legislation passed by provincial and federal governments to reduce the difficulties of agricultural borrowers.[10]

The Dominion Housing Act in 1935 was the government's vehicle for intervening in the housing market.[11] The act aimed to increase the supply of new housing and increase employment in the construction sector by having the government supply some of the funds for mortgage loans. The innovations – other than the government supplying some of the funding and taking part of any losses – included the introduction of high ratio loans (up to 70 to 80 percent loan-to-value [LTV] ratio), terms up to twenty years, and blended monthly payments. That is, the payments would amortize the mortgage over its term. Loans were to be made by "approved lenders," that is, life insurance companies, trust companies, and mortgage loan companies that were federally or provincially incorporated. Loans were strictly for newly constructed housing.

[10] Prairie provincial governments typically introduced moratoria, and the Federal Government Farmers' Creditors Arrangement Act of 1934 deferred payments and reduced them. In the first sixteen months of operation the Board settled 11,000 cases reducing the debt by an average of 30 percent (Easterbrook and W. B. H. 1936). Haubrich (1990) argues that the extent of financial distress in the Canadian Prairie provinces was of the same order as in the United States but differences in data sources make comparisons difficult.

[11] In 1918, the federal government had lent $25 million to provincial governments that they were to lend to municipalities for housing construction. Firestone (1951, p. 480) reports that 6,000 units were built.

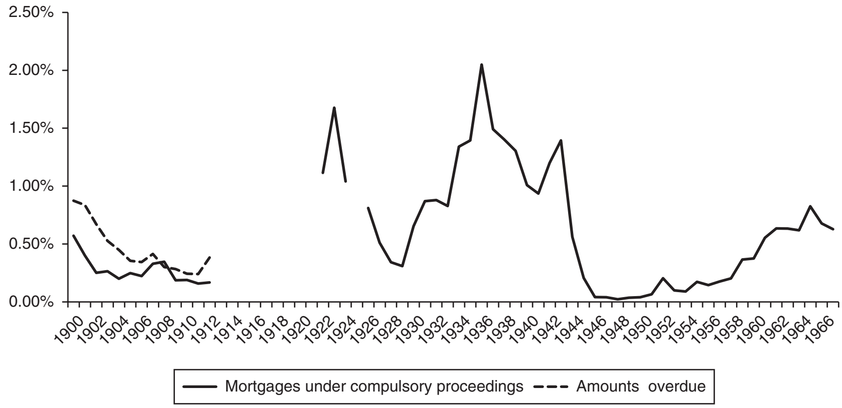


**Figure 13.3.** Trust and loan companies: mortgages in distress as a proportion of total real estate under mortgage.

The act cannot be said to have had a large direct impact. It remained in place for only three years and fewer than 5,000 units were built. Conventional mortgages (i.e., for existing rather than new residential housing) continued to have semiannual interest and minor principal payments, although the term more frequently extended to ten years. Institutional lenders still imposed a maximum of 60 percent LTV ratio.

In 1938 the Dominion Housing Act was replaced by the National Housing Act (NHA), which added incentives for housing construction in remote communities and for low-income households. The act continued (1) to authorize blended payment amortizing loans, (2) to permit amortization over long periods, (3) to permit high-LTV ratio loans, and (4) to require the government to share in any credit losses. The act was amended numerous times, most notably in 1944 when the CMHC was established to implement sections of the NHA.[12]

In the United States, as in Canada, the Depression led the federal government to intervene in the residential mortgage market, but in the United States the intervention was earlier and more aggressive. Furthermore, the intervention was a direct response to the financial institution failures of the early 1930s, rather than aimed specifically at employment. Green and Wachter (2005, p. 95) estimate that in the worst year of the Depression approximately 10 percent of homes were in foreclosure. In the United States – as in Canada – LTV ratios were low, but

[12] The CMHC – structured as a Crown Corporation – continues to be the housing agency for the Canadian government today although the title has changed from Central Mortgage and Housing Corporation to Canada Mortgage and Housing Corporation.

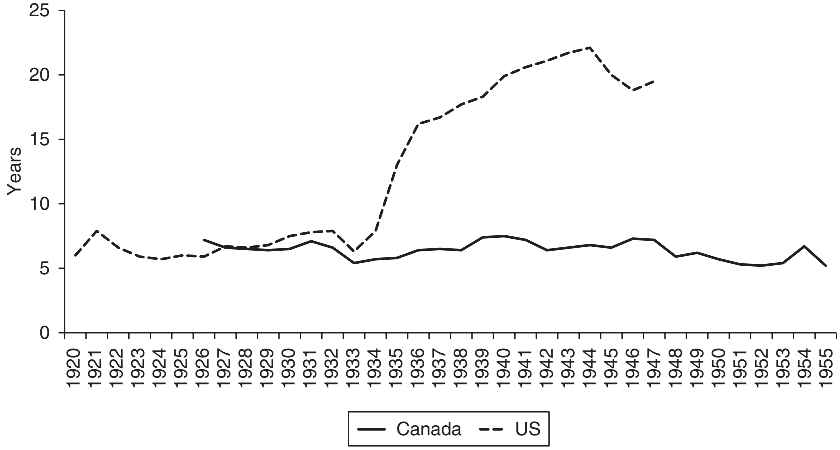


**Figure 13.4.** Term of mortgages by life insurance companies.

when mortgages came due the entire principal was owed, and in the face of bank failures, the loans were not renewed. When borrowers could not refinance they defaulted. The government responded by creating financial institutions to increase the availability of mortgage funds. The Home Owner's Loan Corporation (HOLC) was created in 1933 to raise funds by selling government bonds and then use the proceeds to purchase defaulted mortgages that were then reinstated with long (twenty-year) terms and amortized payments.

The Federal Housing Administration (FHA) was created in 1934 to provide mortgage insurance and thereby make the mortgages held by the HOLC marketable. Finally, in 1938, the Federal National Mortgage Association (FNMA, or Fannie Mae) was established to build a secondary market for FHA mortgages.

As shown in Figure 13.4, after the Great Depression, mortgage terms in Canada and the United States were starkly different. The U.S. mortgage market was characterized by long-term loans that had eliminated interest rate and liquidity risk for borrowers. In Canada, although loans were amortized over long periods, the terms were still typically less than five years and the borrowers were liable to the need to roll over their loans at a variable interest rate. On the other hand, because mortgages were funded primarily with short-term deposits, the Canadian lenders faced less maturity mismatch than U.S. lenders, the consequences of which we turn to next. The lengthening of the term of U.S. mortgages has important effects and by implication the non-lengthening in Canada is also significant, but it is not clear why Canada retained shorter terms.

The standard explanations in Canada for the shorter term are (1) the Canada Interest Act and (2) the conditions of deposit insurance. The latter is obviously not relevant here, as in the late 1930s (1) the U.S. banks had deposit insurance and (2) Canadian banks neither lent on mortgage security nor had deposit insurance. The former is perhaps more salient. At the time of Confederation the lack of a right of prepayment for what could be long-term loans led to a call for legislation that would permit the borrower to pay out the loan at any time after five years on payment of three months' interest. In 1880 the Canada Interest Act (the "Orton Act") was passed, which in Section 10 gives the right to repay in full after five years with a maximum penalty of three months' interest. The act with amendments continues in force today, and Canadians have the right to repay loans of a term longer than five years on payment of three months' interest.[13]

## CANADA IN THE POSTWAR ERA

NHA mortgages continued to be restricted to new housing but in the housing boom immediately after World War II they played a significant role. Smith (1974, p. 8) estimated that in 1948, about half of mortgage initiations (by value) by financial institutions were for new residential units and about half of those were financed with NHA mortgages.[14] That said, it is important to recall that estimates of the "personal sector" suggest that (very) approximately a third of mortgage debt was held outside the financial sector.

The postwar baby boom created an increase in housing demand that led the government to amend the NHA in 1954 to permit banks to be among the authorized lenders for NHA mortgages. The high demand for mortgage loans and the fact that the federal government had to put up roughly 25 percent of the funds for the NHA mortgages was creating a fiscal problem for the government. The banks were the largest financial institutions in the country and they had access to depositor funds as a source of loanable funds. The banks had not asked for this amendment and were reported to be unenthusiastic but, as Figure 13.1 shows, they did get into the business line almost immediately. The amendment provided that the government would no longer be a source of funds, and it also replaced the "share of

[13] How the act relates to renewals of mortgages was articulated in a Supreme Court case in 1985 (see Waldron 1987/1988). See also the 2008 report of the Working Group of the Uniform Law Conference of Canada.

[14] There were limits to the value that the NHA would loan so that "luxury homes" were not financed by NHA loans. The other half of initiations were for either existing residential or nonresidential property. (Harris [1999] points out that the restriction of NHA mortgages to new construction had the regressive effect of subsidizing construction in the new suburbs to the cost of inner city homes.)

the losses" provision with loan insurance paid for by the borrower. The act further made provision for the sale of mortgages, with the hope that as in the United States, this would enable nonapproved lenders to be a source of mortgage funds (Poapst 1962, p. 177).

Two provisions continued to be important. NHA mortgages were only for new construction and the interest rate on loans was prescribed – specifically to be 2.25 percent higher than the twenty-year government bond rate (Poapst 1962, p. 175). This latter prescription had implications for the amount of lending by banks as the Bank Act limited bank lending to 6 percent, and in December 1959 when the NHA mortgage interest rate rose to 6.75 percent the banks effectively got out of mortgage lending.[15]

In summary, between 1954 and 1967 the Canadian banks were permitted to make mortgage loans where the mortgages carried government insurance and were for new construction. The banks were active in making such mortgage loans between 1954 and 1959. The increase in the share of NHA mortgages through the 1950s led to a spread of the terms on NHA mortgages to conventional mortgages. In 1950, it was still the case that conventional mortgages had LTV ratios of 50 percent, and a term of five years. By 1961 when the Royal Commission of Banking and Finance studied mortgage markets, the life insurance companies were lending up to 66.6 percent LTV ratio, and term and amortization rates were twenty or twenty-five years (Poapst 1962, p. 72).[16]

Figures 13.1 and 13.2 show that in both countries the stock of mortgages relative to GDP rose from about 10 percent in the late 1940s to around 25 percent in the late 1960s. In Canada the life insurance companies had provided the funding for much of that growth, and in the United States, savings and loan companies had filled the demand for housing finance.

The 1967 Bank Act revision in Canada removed the 6 percent cap on interest rates on bank lending and the banks fairly quickly resumed mortgage lending. Simultaneously, the banks were permitted to lend on conventional mortgages as well as NHA-insured mortgages. However, lending on conventional mortgages was restricted to those with LTV ratio less than 75 percent unless the mortgagor bought insurance from CMHC.[17] The other major change in 1967 was the introduction of deposit insurance. The banks were required to become members of the Canadian

[15] Because the banks were lending at 6 percent on commercial loans, and the NHA rate was a maximum rate not required rate, it is not completely clear why lending on an asset with no default risk was not preferred to lending to commercial clients. However, the banks instead purchased mortgage loan companies that were free to make the higher interest loans.

[16] In 1965 the ratio was increased to 75 percent. Mortgage and loan companies faced similar requirements (Neufeld 1972, p. 216).

[17] Canadian mortgage insurance is structured slightly differently from that offered by FNMA. The NHA insurance is paid for at the origination of the mortgage and covers the entire amount of the loan for the entire period of the loan.

Deposit Insurance Corporation (CDIC), and all deposits up to $20,000 were insured (a cap currently at $100,000). The financial institutions were required to pay an insurance fee, which was initially not risk adjusted, which the large banks resented.[18] Only deposits with a term of five years or less were insured.

The introduction of deposit insurance reflected the impact of the same forces that drove U.S. banking history – federal/provincial jurisdictional debates and bank/near bank competition. Specifically, Canadian banks were all federally incorporated, regulated, and monitored. Trust companies, life insurance companies, and mortgage and loan companies could be federally or provincially incorporated. In the mid-1960s a major trust company (British Mortgage and Loan) required emergency funding from the Ontario government when a subsidiary (Atlantic Acceptance Corporation) failed. This led some trust companies to support a call for deposit insurance. The federal enquiry (Porter Commission) into banking in the mid-1960s argued for the inclusion of trust companies under the Bank Act because their activities overlapped significantly with banking activities. When the changes recommended by the Commission were implemented in 1967, the broad inclusion of the trust companies was omitted, but the creation of a Crown Corporation to provide mandatory deposit insurance to federally incorporated financial institutions was included.

As noted earlier, there is some debate over whether the limit of five-year term for deposits to be insurable explains the absence of long-term mortgage. That is, because most deposits are for five years or less, the banks prefer to make mortgage loans with similar terms to avoid any maturity mismatch (Freedman 1998). However, Canadian mortgages had that characteristic since the Depression and it seems more likely that it reflects the interest act, which allows homeowners to pay off mortgages after five years with a maximum penalty of ninety days' interest (Lessard 1975).

## THE IMPACT OF THE GREAT INFLATION

From the mid-1960s a series of exogenous forces drove change in the financial sector in both Canada and the United States: inflation rates rose, the clear distinctions between financial institutions eroded, and innovations in information technology changed the set of feasible financial instruments. But how these forces changed the sector differed between the two countries, reflecting their different starting points.

Figures 13.5 and 13.6 show the consequences of these changes on the suppliers of mortgage funds. In Canada, the ratio of mortgages outstanding to GDP rose from 30 percent in the late 1970s to 45 percent in 2005;

[18] The fee was 1/30th of 1 percent of insured deposits. Coverage included twenty-eight federally regulated financial institutions that were required to join and forty-one provincially regulated institutions that chose to join (Wagster 2007, p. 1657).

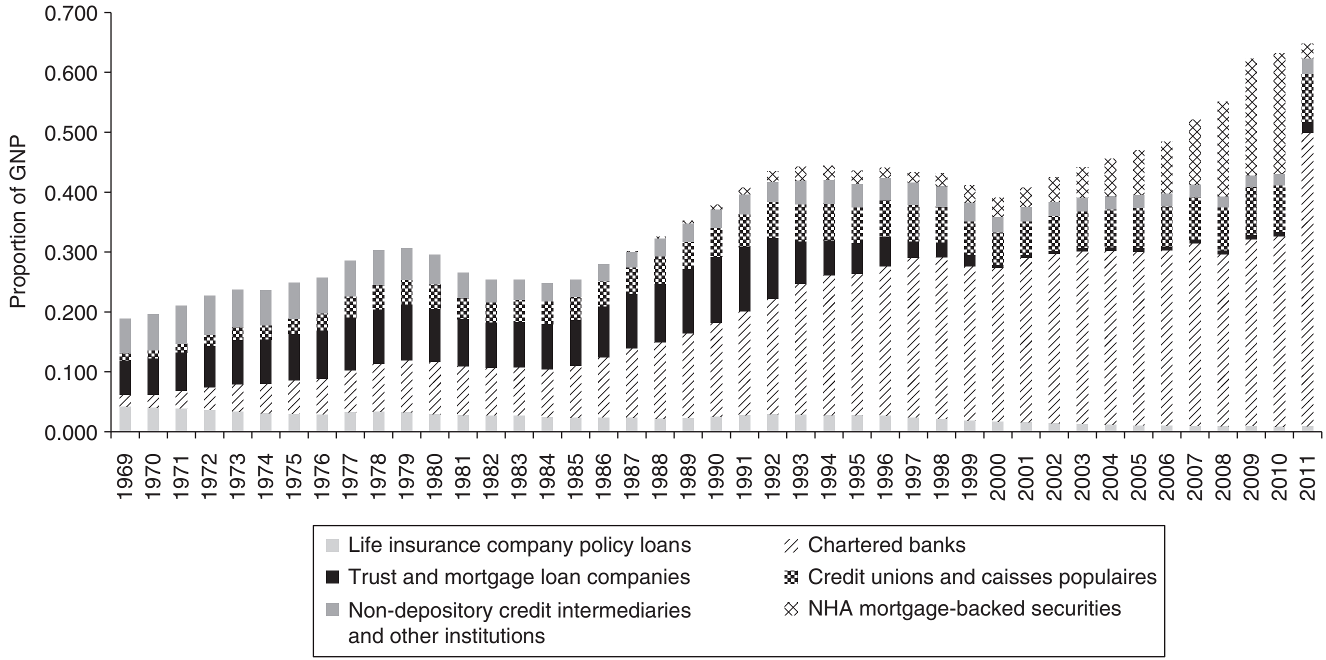


**Figure 13.5.** Residential mortgage debt as a proportion of GNP by institution type in Canada.

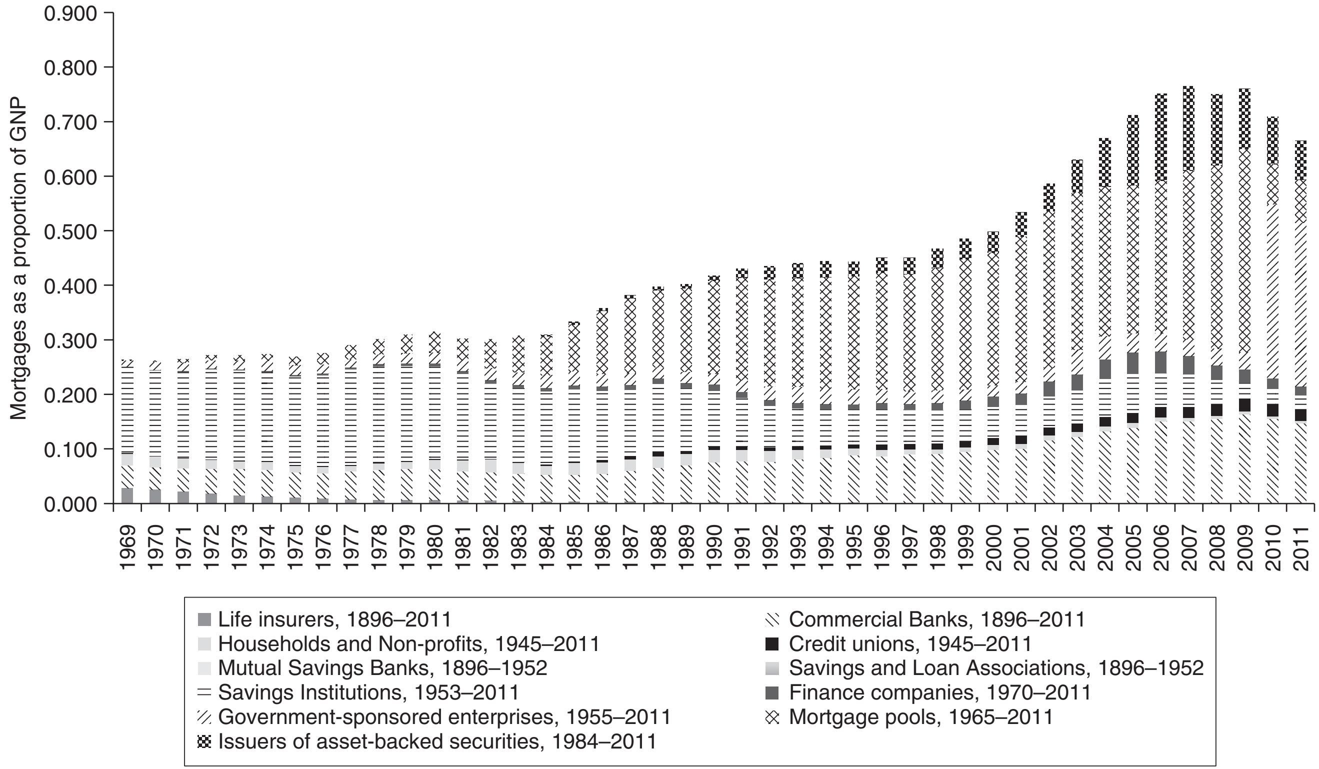


**Figure 13.6.** U.S. residential mortgages as proportion of GNP by institution type.

**Table 13.1. Chartered Bank Absorptions of Financial Institutions**

| Chartered Bank Owned | Mortgage and Loan | Trust Company | Securities Dealers |
|---|---|---|---|
| Canadian Imperial Bank of Commerce (CIBC) | Kinross Mortgage (1963) | National Trust | Wood Gundy |
| Toronto-Dominion Bank (TD) | Canada Permanent | | |
| Bank of Nova Scotia (BNS) | Holborough Investments | | McLeod Weir Young |
| Royal Bank | Roymor (1968) | Montreal Trust | Dominion Securities |
| Bank of Montreal (BMO) | | Royal Trust | Nesbitt Thomson |

*Sources*: Bordo et al. (2014); Neufeld (1972).

in the United States the ratio started at a similar point but rose to 70 percent in 2005. In Canada, the picture is one of minimal securitization, a decline of trust and mortgage loan companies, and a dramatic increase in the share of mortgage lending by chartered banks. In the United States, the share of lending by savings and loan companies decreased, but the share of mortgages that were financed through mortgage pools and securitization increased.

The increase in inflation rates caused challenges in both Canada and the United States. In both cases, the banks faced regulations on the interest rate on deposits. In Canada, mortgages were still relatively short-term instruments so that the maturity mismatch for financial institutions was much less severe than for the U.S. savings and loan companies. The switch in Canada between lending by mortgage and loan companies and banks overstates the changes in the flow of funds in Canada since each of the large banks acquired a mortgage and loan company. Indeed, this is the recent history of the Canadian financial sector: over time the banks also acquired trust companies and – once permitted by 1987 changes to the Bank Act – securities dealers (see Table 13.1).

One consequence of the concentration of financial assets in one part of the financial system is that the supervision of the financial system is similarly concentrated. The Office of the Superintendent of Financial Institutions (OSFI) regulates and supervises all federally incorporated financial institutions.[19] There are many differences in regulation between

[19] That said, OSFI was established in 1987 in response to the 1985 failure of two small Canadian banks, the Canadian Commercial Bank and the Northland Bank of Canada.

the United States and Canada but a critical distinction lies in the extent to which banks are regulated as consolidated entities. Thus, the banks are required to report consolidated balance sheets that include their trust and mortgage company subsidiaries.

## INFLATION AND DEREGULATION IN THE UNITED STATES

Regulation Q, a clause of the Banking Act of 1933, prohibited the payment of interest on demand deposits and imposed ceilings on interest rates on other deposits.[20] In 1966, deposits in mutual savings banks and savings and loans associations were brought under the policy. From 1933 to 1966, the ceilings exceeded the yields on Treasury bills and were typically not binding. This changed in the late 1970s when inflation, and interest rates, rose dramatically. Regulation Q constrained the ability of the savings and loan companies to attract deposits, but their assets were long-term low-interest mortgages. Simultaneously, Money Market Mutual Funds (MMMFs) were created, which being outside Regulation Q could offer a savings instrument that was as liquid for investors as a savings account with far higher returns: between 1978 and 1983, the ratio of MMMFs to bank deposits rose from 1 percent to 11 percent. In contrast, in Canada the ratio rose from 0.1 percent to 0.2 percent.[21]

The shift of funds out of depository institutions (shrinking of the liability side of depository institutions) was accompanied by a shift of mortgage lending out of depository institutions (shrinking of the asset side). Depositories shifted from an "originate and hold" model to "originate to distribute" and securitized mortgage loans that were then sold and resold. Securitization addressed three problems for U.S. depository institutions – capital regulation, maturity mismatch, and access to national and international capital markets.

Capital regulation required that banks hold capital against risky assets and by getting mortgages off their books banks could reduce their capital charges. Ideally, by pooling mortgages and tranching them by risk,

These two banks, which had started business in 1975 and which held most of their assets in Western Canada, had expanded aggressively in the late 1970s and were hard hit by the recession of the early 1980s. The banks held only approximately 0.75 of 1 percent of Canadian banking assets, however, the government, shocked by the first bank failure since 1923, revisited bank oversight and integrated the regulation of all federally incorporated financial institutions – banks, insurance companies, and pension plans.

[20] Commercial banks that were members of the Federal Reserve System were covered by the clause in the Banking Act of 1933, which was extended to nonmember commercial banks by the Banking Act of 1935. Gilbert (1986, p. 22). The goals of the legislation included encouraging lending by local banks, rather than sending funds out of the locality on deposit to city banks and limiting risk taking by reducing the competition for deposits.

[21] And when MMMFs did become more popular in Canada they were created by the banks (and on the banks' balance sheets; Bordo et al., 2014 table 2).

risk sharing would reduce idiosyncratic risks. The Canadian banks were sufficiently large that within the bank mortgage risk could be reduced. Furthermore, Canadian regulators regulated the consolidated institution so that moving risk to an off-balance sheet subsidiary was much less likely to reduce capital requirements.

U.S. mortgage lenders face significantly greater prepayment risk than Canadian lenders. Again, for an individual lender this risk can get pooled through the securitization process. In Canada, loans are for shorter terms and prepayment penalties are high, so that pooling of prepayment risk did not provide an incentive for Canadian banks to securitize mortgages.

Finally, the branching structure of Canadian banks meant that funds could be transferred interregionally within a single bank. In the United States, this was much more challenging. In addition, the decades of unit banking had created a financial system in which markets were used to move funds interregionally rather than internal transfers within institutions. U.S. financial markets were far deeper and more developed than Canadian financial markets, creating a path dependency that encouraged mortgage securitization.

In 2007, 60 percent of mortgages in the United States were securitized while only 25 percent of Canadian mortgages were securitized. MacGee (2009) cites data stating that 22 percent of U.S. mortgages were by subprime lenders compared to 5 percent in Canada – and the subprime mortgages in the United States were likely to be interest-only loans to subprime borrowers, while in Canada they would be long amortization loans to near-prime borrowers.

## CONCLUSION

Post-crisis analysis (e.g., Mian and Sufi 2009) has shown the importance of the securitization of mortgages, especially subprime mortgages, in the mortgage default crisis. Levitin and Wachter (2012), among many others, argue that the channel for this importance was the asymmetric information created by the "complexity, opacity, and heterogeneity" of the market for these private-label mortgage-backed securities. In Canada the extent of subprime mortgage lending was very small relative to that in the United States and the degree of securitization was similarly low. The majority of mortgages were kept on the books of the banks so that the asymmetric information problems were far less present.

MacGee (2009) argues that Canada had the advantage of being a "late adopter of innovations" and of having an approach to regulation and supervision that was more consistent with good corporate governance, but that leads to the question of why this was so. This chapter has argued that the differences have deep roots in the historical structure of the financial systems of the two countries.

At the beginning of the twentieth century, the United States had a fragmented banking system and, in part as a consequence, relatively deep markets for fixed income securities. Canada had a concentrated, and politically powerful, banking system comprising nationwide branching banks and, again in part as a consequence, relatively thin markets for fixed income securities. From this background perhaps it is unsurprising that across the twentieth century, mortgage lending in Canada came to be dominated by banks and funded by deposits, while in the United States, mortgage funding turned to securities markets. The interesting part of the story relates how this transition occurred, and weaves in the changing role of governments in providing the institutional framework for the mortgage markets.

## DATA APPENDIX

### Figure 13.1

**GNP**: **1888–1926**: Urquhart. Table 1.6 – Gross national product in current and constant dollars and real gross national product per capita, 1870–1925; **1926–1960**: *Historical Statistics of Canada* Ed. 1, Series E1-12 – National income and gross national product, 1926–1960; **1961–1968**: *Statistics Canada*. Table 380-0030 – Gross domestic product (GDP) and gross national product (GNP) at market prices and net national income at basic prices, annual, 1960–2011 (accessed August 8, 2012).

**Life insurers** (nonfarm mortgages): **1888–1959**: *Historical Statistics of Canada* Ed. 1. Series H373-408 – Total assets of Canadian life insurance companies under federal registration and assets in Canada of British and foreign companies under federal registration, 1888–1959; **1960–1976**: *Historical Statistics of Canada* Ed. 2. Series J428-444 – Life insurance companies and fraternal benefit societies, 1959 to 1976; **1977–2011**: *Statistics Canada*. Table 176-0024 – Life insurers, including accident, sickness branches, and segregated funds, annual, 1977–2011 (accessed August 8, 2012).

**Trust and Mortgage Loan Companies**: **1888–1912** (nonfarm mortgages): Department of Finance. Table of Assets – Assets of building societies, loan, and trust companies. Report on the Affairs of Building Societies, Loan, and Trust Companies, 1912. **1926–1932** (residential mortgages): Canada Mortgage and Housing Corporation. Appendix D – Mortgage loans outstanding in Canada. *Economic Research Bulletin* 77, 1971. **1933–1964** (residential mortgages): Canada Mortgage and Housing Corporation. Table 77 – Mortgage loans outstanding, holdings by lending institutions, governments, corporate lenders, and part of personal sector, Canada. Canadian Housing Statistics, 1974. **1965–1968** (residential mortgages): *Historical Statistics of Canada* Ed. 2. Series J273-309 – Trust companies, 1963–1976 and Series J310-350 – Mortgage companies, 1963–1976.

**Chartered Banks** (residential mortgages): **1954–1968**: *Statistics Canada*. Table 176-0015 – Chartered banks, assets, and liabilities, at month-end, annual, 1954–2011 (accessed August 7, 2012).

**Local credit unions** (residential mortgages): **1967–1968**: *Statistics Canada*. Table 176-0026 – Local credit unions and caisses populaires: quarterly statement of assets and liabilities, end of period, annual, 1967–2011 (accessed August 8, 2012).

**Personal Sector** (residential mortgages): **1926–1968**: Canada Mortgage and Housing Corporation. Appendix D – Mortgage loans outstanding in Canada. *Economic Research Bulletin* 77, 1971.

**Figure 13.2**
*Residential Mortgages*

**1896–1952**: Life insurers, commercial banks, mutual savings banks, savings and loan associations, households, and noninstitutional lenders: *Historical Statistics of the United States* Millennial Ed. Table Dc907-911 – Mortgage debt on residential structures by type of lender, 1896–1952.

**1945–1968**: Credit unions: Federal Reserve Bank of the United States. Table L.218 – Home mortgage levels by type of lender. Flow of Funds (Z), 1945–2011.

**1953–1968:** Life insurers, commercial banks, savings institutions, government-sponsored enterprises, mortgage pools, households, and noninstitutional lenders: Federal Reserve Bank of the United States. Table L.218 – Home mortgage levels by type of lender. Flow of Funds (Z), 1945–2011.

**GNP**: **1896–1928**: *Historical Statistics of the United States* Millennial Ed. Table Ca188 – Kendrik gross national product in current dollars, 1889–1929; **1929–2011**: Bureau of Economic Analysis. Table 1.7.5. Relation of gross domestic product, gross national product, net national product, national income, and personal income, 1929–2011.

**Figure 13.3**

**Canada average term**: *Historical Statistics of Canada* Ed. 1. Series H419

**US average term**: *Historical Statistics of the United States* Millennial Ed. Table Dc1198.

**Figure 13.4**

**Residential mortgage data**: *Statistics Canada*. Table 176-0069 – Residential mortgage credit, outstanding balances of major private institutional lenders, annual (December month-end) (accessed August 6, 2012).

**GNP**: *Statistics Canada*. Table 380-0030 – Gross domestic product (GDP) and gross national product (GNP) at market prices and net national income at basic prices, annual (accessed August 8, 2012).

## REFERENCES

Bordo, M., A. Redish, and H. Rockoff. (2014). "Why Didn't Canada Have a Banking Crisis in 2008 (or in 1930, or 1907, or …)?" *Economic History Review* DOI: 10.1111/1468-0289.665; also at NBER Working Paper w17312. Cambridge, MA: National Bureau of Economic Research.

Campbell, J. (2012). "Mortgage Market Design." NBER Working Paper w18339. Cambridge, MA: National Bureau of Economic Research.

Courchane, M., and J. Giles. (2002). "A Comparison of US and Canadian Residential Mortgage Markets." *Property Management* (Suppl. IRES special issue Part 1), 20(5): 326–368.

Easterbrook, W. and W. B. H. (1936). "Agricultural Debt Adjustment." *Canadian Journal of Economics and Political Science* (August):390–403.

Firestone, O. (1951). *Residential Real Estate in Canada.* Toronto: University of Toronto Press.

Freedman, C. (1998). "The Canadian Banking System." Bank of Canada Technical Report 81.

Gilbert, R. A. (1986). "Requiem for Regulation Q: What It Did and Why It Passed Away." *Federal Reserve Bank of St. Louis Review* (February):22–37.

Green, R. K., and S. Wachter. (2005). "The American Mortgage in Historical and International Context." *Journal of Economic Perspectives* 19(4):93–114.

Green, R. K., and Susan M. Wachter. (2007). "The Housing Finance Revolution." Housing, Housing Finance and Monetary Policy, A Symposium Sponsored the Federal Reserve Bank of Kansas City, August 30–September 1, pp. 21–67.

Harris, R. (1999). "Housing and Social Policy: A Historical Perspective on Canadian-American Differences." *Urban Studies* 36:1169–1175.

Harris, R., and D. Ragonetti. (1998). "Where Credit Is Due: Residential Mortgage Finance in Canada, 1901 to 1954." *Journal of Real Estate Finance and Economics* 16(2):223–238.

Hatch, J. (1975). *The Canadian Mortgage Market.* Toronto: Queens Printer.

Haubrich, J. (1990). "Nonmonetary Effects of Financial Crises: Lessons from the Great Depression in Canada." *Journal of Monetary Economics* (March): 223–252.

Kiff, J. (2010). "Canadian Residential Mortgage Markets: Boring but Effective?" Washington, DC: International Monetary Fund.

Lessard, D. (1975). "Roll-over Mortgages in Canada." in Federal Reserve Bank of Boston, New Mortgage Designs for an Inflationary Environment, Conference Series 14 (January):131–141.

Levitin, A., and S. Wachtel. (2012). "Explaining the Housing Bubble." *Georgetown Law Journal* 100,(4):1177–1258.

MacGee, J. (2009). "Why Didn't Canada's Housing Market Go Bust?" Economic Commentary. Federal Reserve Bank of Cleveland, September.

Mian, A., and S. Sufi. (2009). "The Consequences of Mortgage Credit Expansion: Evidence from the US Mortgage Default Crisis." *Quarterly Journal of Economics* 124:1449–1496.

Neufeld, E. (1972). *The Financial System of Canada: Its Growth and Development*. Toronto: Macmillan.

Poapst, J. (1962). "The Residential Mortgage Market." Working paper prepared for the Royal Commission on Banking and Finance.

(1975). *Developing the Residential Mortgage Market*, Vol. II. Mortgage Investment Companies, Toronto: Canada Housing and Mortgage Corporation.

Slater, D. (1968). "The 1967 Revision of the Canadian Banking Acts Part I: An Economist's View." *Canadian Journal of Economics* (February):79–91.

Smith, L. (1974). *The Postwar Canadian Housing and Residential Mortgage Markets and the Role of Government.* Toronto: University of Toronto Press.

Smith, L., and G. Sparks. (1973). "Institutional Mortgage Lending in Canada, 1954–68: An Econometric Analysis." *Bank of Canada Staff Research Studies*, 9.

Traclet V. (2005). "Structure of the Canadian Housing Market and Finance System." Paper prepared for the CGFS.

Wagster, John D. (2007). "Wealth and Risk Effects of Adopting Deposit Insurance in Canada: Evidence of Risk Shifting by Banks and Trust Companies." *Journal of Money Credit and Banking* 39(7):1651–1681.

Waldron, M. (1987–1988). "Section 10 of the Interest Act: All the King's Men." *Canadian Business Law Journal* 13:468–489.

Woodard, H. (1959). *Canadian Mortgages*. Toronto: Collins.