ECONOMIC COMMENTARY
September 2009

Why Didn't Canada's Housing Market Go Bust?

James MacGee

Housing markets in the United States and Canada are similar in many respects, but each has fared quite differently since the onset of the financial crisis. A comparison of the two markets suggests that relaxed lending standards likely played a critical role in the U.S. housing bust.

Despite their many points of similarity, housing markets in the United States and Canada have fared quite differently since the onset of the financial crisis. Unlike the U.S., Canada has not experienced a dramatic increase in mortgage defaults, nor has any Canadian bank required a government bailout. As a result, observers such as *The Economist* have pointed to Canada as "a country that got things right."

The different housing market outcomes in Canada and the U.S. can tell us something about the underlying causes of the housing boom and subsequent bust. In particular, they can be used to evaluate the roles that low interest rates and relaxed lending standards played in the boom and bust.

Some observers blame monetary policy for lowering interest rates over 2002–2005, pushing up housing demand, increasing residential investment, and raising housing prices. In this view, the monetary-policy-induced housing boom thus set the stage for an inevitable housing bust.

Others contend that relaxed lending standards, highlighted by the rise in subprime lending, played a critical role. This loosening of standards led to an increase in housing demand, as mortgages were issued to households that were likely to have trouble making the mortgage payments. This extension of credit to risky borrowers helped fuel a housing boom and set the stage for the resulting surge in defaults, which were a big factor in the housing "bust."

The Canada and U.S. housing market comparison suggests that relaxed lending standards likely played a critical role in the U.S. housing bust. Monetary policy was very similar in both countries from 2000 to 2008, but housing prices rose much faster in the U.S. than in Canada. This suggests that some other factor both drove the more rapid appreciation in U.S. prices and set the stage for the housing bust. A likely candidate is cross-country differences in the structure and regulation of subprime lending markets. That mortgage delinquencies began to climb before the recession in the U.S. but only began to rise recently in Canada (after the economic slowdown began), points to the significance of those structural and regulatory differences in explaining the U.S. housing crash.

Canadian and U.S. Housing Market Trends

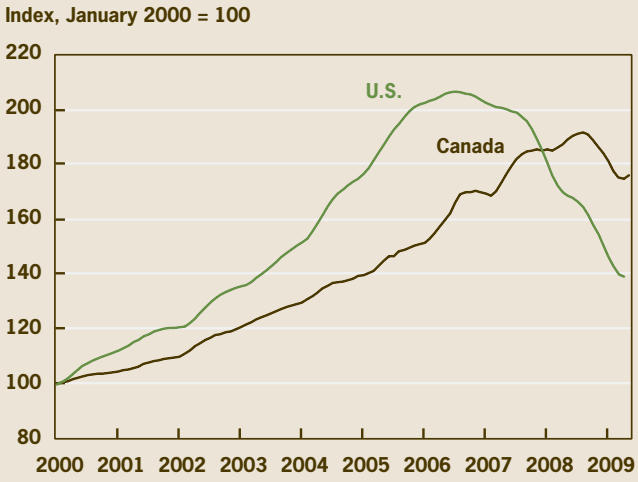
Canada and the U.S. experienced significant increases in house prices and residential investment from 2000 to 2006, though prices in Canada appreciated more slowly. Figure 1 plots the S&P Case-Shiller 20 city composite index and the (Canadian) Teranet–National Bank 6 city composite index. Both series are based on repeat sales, making these series a closer approximation to a "constant-quality" price index of nominal home prices than average house price sales. The Case-Shiller and Teranet series indicate that over 2000–2006, U.S. prices appreciated nearly twice as much as Canadian houses. However, Canadian house prices continued to appreciate until late 2008, and are now nearly 80 percent higher than in 2000.

The counterpart to rapid house price appreciation has been an increase in the ratio of mortgage debt to disposable income. While the comparison is complicated by different definitions of the household sector and debt categories in the Flow of Funds accounts, the trends are similar to those of house prices. Between 2000 and 2006, the ratio of mortgage debt to disposable income in the U.S. increased by roughly 50 percent, jumping from two-thirds to over 100 percent. In Canada, the increase was roughly half as large, with the debt-income ratio moving from 70 to 90 percent.

The potential risks of increased household mortgage debt depend critically upon its distribution across borrowers. To see how the distribution of mortgage debt has changed we examine the distribution of the ratio of the outstanding loan to house value (the LTV) of borrowers. A high LTV implies that a small decline in the house price would leave the owner with negative equity. Negative equity is problematic as it removes the option for a homeowner who is unable to meet their mortgage payments to sell their home to repay the mortgage.

ISSN 0428-1276

1. Housing Prices



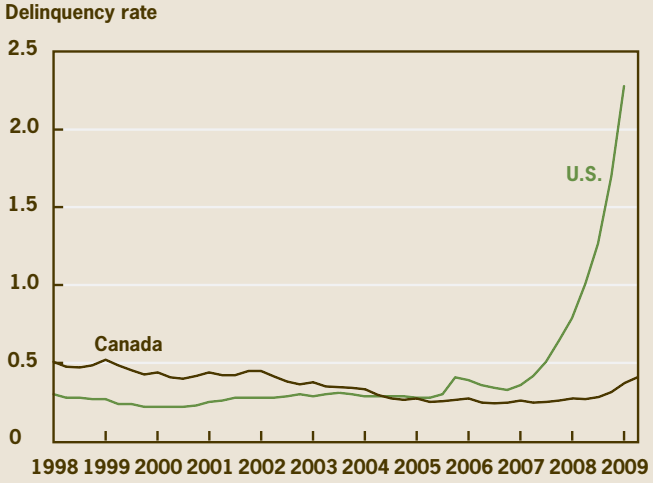
Sources: S&P/Case-Shiller (20-city) for U.S. house prices and Teranet (6-city) for Canadian.

2. Distribution of Mortgages by Loan-to-Value Ratio (percent)

	United States			Canada
LTV ratios	1999	2005	2007	2006
0–80	76.48	79.14	78.12	84.79
80–90	10.55	8.98	9.66	8.81
90–100	7.56	6.37	6.93	1.53
100+	5.41	5.51	5.28	4.87

Sources: Bank of Canada Financial System Review December 2007; American Housing Survey. The American Housing Survey reports the ratio of all outstanding mortgages (excluding home equity lines of credit) to the value of the house.

3. Mortgage Delinquency Rates (90+ days delinquent)



Sources: Mortgage Bankers Association. National Delinquency Survey.
Notes: The delinquency rate is the number of mortgages past due as a percent of the total number of mortgages at the end of the period. The delinquency rate does not include loans in the process of foreclosure.

As figure 2 illustrates, Canada has significantly fewer households with LTV ratios above 80 percent than the U.S. Before the housing bust, roughly 21 percent of American households with mortgages had LTV ratios above 80 percent, versus 15 percent of Canadian households. Restricting attention to households with LTV above 90 percent the comparison is even more striking: roughly 12 percent in the U.S. versus just over 6 percent in Canada.

A surprising fact about these LTV ratios is how little the distribution of U.S. mortgages by loan-to-value changed during the housing boom. This is surprising given that the rapid house price appreciation acted to lower the LTV ratios of existing mortgages. Working in the opposite direction were two forces. First, some households undid the effect of higher house prices by extracting equity. Second, the rise in subprime and Alt-A mortgage originations from roughly 1.4 million in 2003 to 3 million in 2005 was accompanied by an increase in the median LTV of new subprime mortgages from 90 percent to 100 percent (as documented in Mayer, Pence, and Sherlund, 2009).

While broadly similar trends were occurring in house prices and mortgage debt in the U.S. and Canada, very different patterns of mortgage delinquencies and defaults were emerging. The best available comparison is for delinquencies on prime mortgages (which account for the bulk of mortgage credit) in the two countries (figure 3). Prior to 2006, delinquencies were comparable in both countries (and were slightly higher in Canada). While delinquencies increased more than four-fold in the U.S. after 2007, as of mid 2009 there has been little sign of an increase in mortgage delinquencies in Canada. A similar story holds in the subprime market. Researchers Mayer, Pence, and Sherlund reported that 8 percent of the U.S. subprime mortgages originated in 2007 had defaulted after 12 months, as opposed to 1.5 percent over 2000–2004. The available Canadian data also features an increase in subprime mortgage delinquencies, but the delinquency rate in 2007 was still under 2 percent, according to the Financial System Review in June 2008.

These different patterns in delinquencies occurred during a period of similar macroeconomic performance. Unemployment rates were stable throughout 2007 and early 2008, at roughly 5 percent in the U.S. and 6 percent in Canada. The timing of the recent deterioration in labor markets has also been similar, with unemployment rates rising to 9.4 percent (U.S.) and 8.6 percent (Canada) by July 2009. What these data reveal is that mortgage delinquencies began to increase in the United States before the rise in unemployment, but in Canada they remained low and only began to increase after the rise in unemployment in 2008. That difference is a key clue to determining what caused the housing bust.

Monetary Policy and the U.S. Housing Bust

The low interest rate policy of the Federal Reserve over 2001–2005 is often cited as a key factor in the U.S. housing bust. The main narrative is that by lowering short-term interest rates, the Federal Reserve pushed down (longer-maturity) mortgage interest rates. This policy increased

demand for housing, leading to upward pressure on housing prices, which encouraged builders to ramp up construction of new homes. This led to an "oversupply" of new homes, which triggered the housing bust.

The claim that interest rates were too low over 2001–2005 is motivated by a couple of observations. First, the federal funds rate was low by historical standards: declining from over 6 percent in early 2001 to 1 percent in 2003 and remaining low until 2005 (see figure 4). Second, interest rates over this period were much lower than those predicted by the Taylor rule for monetary policy (which relates the Federal Reserve target rate to inflation and GDP) over 2002 to 2006.

The Bank of Canada also made dramatic reductions in its target interest rate over 2001–2002. One might argue that Canadian monetary policy was not quite as "loose" as that in the U.S. as it maintained a higher overnight rate over 2002 to 2004. But a case can be made that Canadian and American monetary policy were very similar, at least in terms of the housing market. Ahrend, Cournede and Price (2008) estimate deviations from the Taylor rule for Canada and the U.S. over 2001–2006 and find that the cumulative deviations were nearly identical.

In addition, mortgage interest rates—the main direct channel through which monetary policy impacts the housing market—tracked each other closely in the two countries. Unlike the U.S., where the mainstay of the mortgage market is the 30-year fixed mortgage, the most common mortgage product in Canada is a five-year fixed rate mortgage (with a 25-year amortization period). As figure 5 illustrates, the two benchmark mortgage interest rates move closely with one another until after the beginning of the U.S. housing market crisis, when U.S. rates fall significantly below Canadian rates.

The similarity of the impact of monetary policy and the absence of a housing market bust in Canada suggest that some other factor must have been present in the U.S. to generate the boom and bust. This is not to suggest that "loose" monetary policy did not put upward pressure on housing prices—indeed, both Canada and the U.S. experienced substantial levels of house price appreciation. However, the Canada-U.S comparison suggests that some other factor drove both the more rapid house appreciation and set the groundwork for a U.S. housing bust.

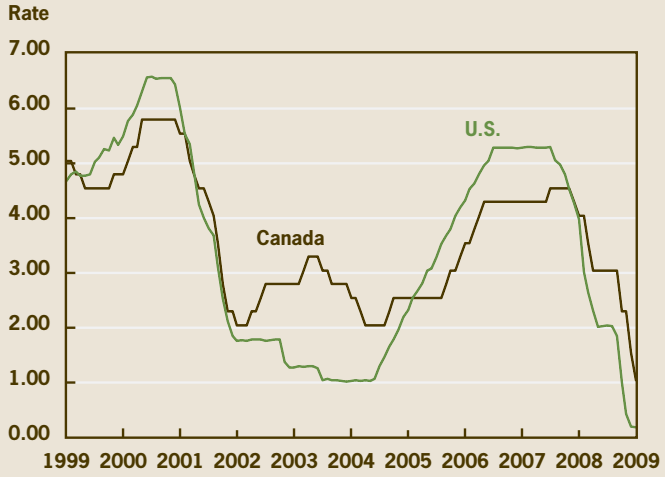
Relaxed Lending Standards: Different Subprime Lending Booms

The other leading explanation of the housing boom and bust relies critically on relaxed lending standards. This story is linked to the dramatic rise in subprime lending and high levels of loan securitization, which some commentators have argued reduced the incentives for mortgage originators to maintain underwriting standards. This is one area where there was a significant difference between the two countries, both in the size and nature of the subprime market and in the fraction of mortgages securitized.

The subprime markets in the U.S. and Canada include households with tarnished credit histories as well as borrowers with difficult-to-document income sources. Subprime lending has grown rapidly in both countries, though the magnitude has been far more striking in the U.S. While subprime mortgages accounted for less than 5 percent of mortgage originations in the U.S. in 1994, a fifth of all mortgages originated between 2004–2006 were subprime, according to data reported by James Barth in 2009.

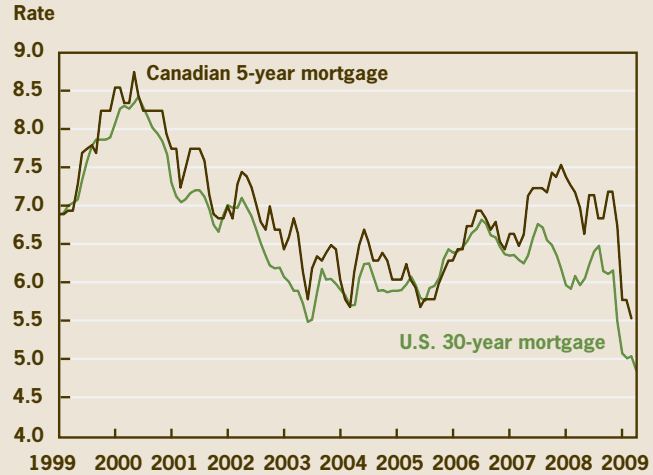
But while subprime lending also increased in Canada, the subprime market remains much smaller than in the U.S. The most cited estimate is that subprime lenders had a market share of roughly 5 percent in 2006—compared to 22 percent in the U.S. (Mortgage Architects, 2007). Moreover, the Canadian subprime market never expanded significantly into newer

4. Central Bank Target Rates



Source: Mortgage Bankers Association. National Delinquency Survey.

5. Benchmark Mortgage Interest Rates



Source: International Monetary Fund,International Financial Statistics, COFER data.

products, such as interest-only or negative-amortization mortgages, whose popularity grew rapidly in the U.S. from 2003 to 2006. Instead, the Canadian subprime market mainly offered products popularized in the U.S. during the 1990s, such as longer amortization periods for loans (from 25 to 40 years), and mainly targeted near-prime borrowers.

Securitization has also been less common in Canada than in the United States, with roughly 25 percent of Canadian mortgages securitized in 2007 versus nearly 60 percent in the U.S. The Canadian securitization market has grown rapidly over the past decade, rising from roughly 5 percent of mortgages in 1998 to over 25 percent in 2008. However, in many ways, the Canadian market resembles the early stages of the U.S. mortgage securitization market, as most securitized mortgages in Canada are backed by an explicit government guarantee. This government guarantee requires limits on borrowers' debt-service ratios and amortization periods, which makes it more difficult for lenders to offer some types of subprime loans.

The different magnitude of the subprime lending boom in the two countries is consistent with differences outlined above between the Canadian and U.S. housing markets over the past 10 years. The rapid growth of the subprime market provided an additional boost to demand in the U.S. that is consistent with the more rapid house price appreciation in the U.S. than in Canada.

The subprime story is also consistent with the different pattern of mortgage delinquencies in Canada and the U.S. In the U.S., mortgage delinquencies for both prime and nonprime mortgages began to rise before the recession began and unemployment rates began to climb. In contrast, mortgage delinquencies in Canada have only recently begun to increase—after unemployment rates started rising and the Canadian and world economies slowed sharply in the fall of 2008.

Finally, the relaxed lending story is consistent with the fact that the U.S. experienced a housing bust over 2007–2009 while Canada did not. While the expansion of subprime lending provided a temporary boost to housing price growth rates, when prices stopped rising, the inability of some borrowers to refinance homes they could not afford led to a spike of delinquencies. The resulting increase in liquidation and foreclosure sales put additional downward pressure on house prices, which in turn pushed more borrowers into default. This "negative feedback" cycle helped push a correction in the housing market into a housing bust.

One possible critique of this argument is that while Canada has not yet experienced a housing bust, it is likely to experience one in the next year. Indeed, a recent Merrill-Lynch-Canada report noted that Canadian house prices over the past decade closely resemble U.S. house prices with a two-year lag (see figure 1). Based on this, they concluded that Canada was also likely to experience a large decline in house prices over the coming year. Canada's smaller subprime market share and fewer households with high LTV ratios, however, suggest that the country is less likely to see the rapid increase in defaults that helped trigger the bust in U.S. housing prices. So far the incoming data suggest that the Canadian housing market is likely to experience a housing market slowdown rather than a bust.

Why Was the Subprime Market in Canada Smaller?

Given the key role played by the "subprime" market, the question is why the Canadian subprime market was both smaller and levels of securitization were lower than in the U.S. While it is difficult to disentangle the reasons why Canada avoided the subprime boom, some factors can be identified that may have contributed to the differences in the Canadian and U.S. subprime markets.

Perhaps the simplest story is that Canada was "lucky" to be a late adopter of U.S. innovations rather than an innovator in mortgage finance. While the subprime share of the Canadian market was small, it was growing rapidly prior to the onset of the U.S. subprime crisis. In response to the U.S. crisis, some subprime lenders exited the Canadian market due to difficulties in securing funding. In addition, the Canadian government moved in July 2008 to tighten the standards for mortgage insurance required for high LTV loans originated by federally regulated financial institutions. This further limited the ability of Canadian banks to directly offer subprime-type products to borrowers.

There are also several institutional details that played a role. The Canadian market lacks a counterpart to Freddie Mac and Fannie Mae, both of which played a significant role in the growth of securitization in the U.S. In addition, bank capital regulation in Canada treats off-balance sheet vehicles more strictly than the U.S., and the stricter treatment reduces the incentive for Canadian banks to move mortgage loans to off-balance sheet vehicles. Finally, as noted above, the fact that the government-mandated mortgage insurance for high LTV loans issued by Canadian banks effectively made it impossible for banks to offer certain subprime products. This likely slowed the growth of the subprime market in Canada, as nonbank intermediaries had to organically grow origination networks.

A Challenge for Policymakers

The Canada-U.S. comparison suggests the low interest rate policy of the central banks in both countries contributed to the housing boom over 2001–2006 and that a relaxation of lending standards in the U.S. was the critical factor in setting the stage for the housing bust. A caveat worth emphasizing, however, is that the Canada-U.S. comparison tells us little about what would have happened if U.S. monetary policy had been tighter earlier. Tighter monetary policy in the early part of the decade may have helped to limit the subprime boom by slowing the rate of house price appreciation over 2002–2006. The Canada-U.S. comparison does, however, highlight the practical challenge facing policymakers in assessing whether a rapid run-up in asset prices is a bubble or a "sustainable" movement in market prices.

Recommended Reading

"Monetary Policy, Market Excesses and Financial Turmoil", by Rudiger Ahrend, Boris Cournede, and Robert Price (2008). OECD Economics Department Working Paper No. 597.

The Rise and Fall of the U.S. Mortgage and Credit Markets, by James R. Barth (2009). Milken Press.

"Rebuilding the Banks," *The Economist,* May 16, 2009.

"The American Mortgage Market in Historical and International Context," by Richard Green and Susan Wachter (2005). *Journal of Economic Perspective*, 19(4), 93–114.

"The Rise in Mortgage Defaults," by Christopher Mayer, Karen Pence, and Shane Sherlund (2009). *Journal of Economic Perspectives*, 23(1), 27–50.

"Comparing the Canadian and U.S. Subprime and Alternative Mortgage Markets: Why the U.S. Subprime Fallout Is a U.S.-only Phenomenon," Mortgage Architects (2007). <http://files.newswire.ca/40/MASubprime.pdf, accessed: June 15, 2009.>

Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis, by John B. Taylor (2009). Hoover Institutions Press.

"Structure of the Canadian Housing Market and Finance System," by Virginia Traclet (2005). Background paper prepared for CGFS Working Group on Housing Finance in the Global Financial Market.

"The Tipping Point?" by David D. Wolf and Carolyn Kwan (2008). Merrill Lynch Canada, *Economic Commentary*.

James MacGee is an associate professor at the University of Western Ontario and a research associate at the Federal Reserve Bank of Cleveland. The views he expresses here are his and not necessarily those of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System or its staff.

Economic Commentary is published by the Research Department of the Federal Reserve Bank of Cleveland. To receive copies or be placed on the mailing list, e-mail your request to 4d.subscriptions@clev.frb.org or fax it to 216.579.3050. *Economic Commentary* is also available on the Cleveland Fed's Web site at www.clevelandfed.org/research.

Federal Reserve Bank of Cleveland
Research Department
P.O. Box 6387
Cleveland, OH 44101

PRSRT STD
U.S. Postage Paid
Cleveland, OH
Permit No. 385

Return Service Requested:
Please send corrected mailing label to the above address.

Material may be reprinted if the source is credited. Please send copies of reprinted material to the editor at the address above.