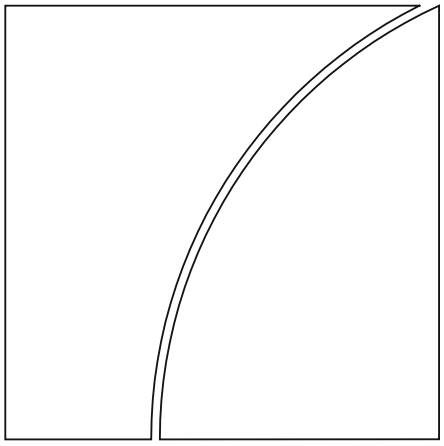
Committee on the Global Financial System

BIS



CGFS Papers

No 69

Macroprudential policies to mitigate housing market risks

Country case study: Canada

December 2023

Macroprudential policies to mitigate housing market risks Case study – Canada

Author: Brian Peterson (Bank of Canada)

1. Housing as a source of risk

Monitoring of housing-related risks for Canada relies primarily on data that measures the housing and mortgage markets. These data indicate how the dual vulnerabilities of elevated house prices and high household indebtedness are evolving.

Canada generally defines vulnerabilities using a "stock" concept of measurement. For instance, house price vulnerability is primarily determined as the extent to which house prices are overvalued relative to fundamentals. This is an indicator of the size of a potential market correction. Similarly, vulnerability stemming from household debt is driven by the stock of debt held by households with a high debt-to-asset or debt-to-income ratio.

However, since stock measurements are quite difficult and slow moving, monitoring focuses in practice on flow measurements, such as house price growth and the mortgage originations (Table 1, Graphs 1.A and 1.B).

The monitoring of housing risks in Canada covers both housing market and mortgage markets, primarily using flow measurements to proxy stock changes — Table 1

	Flow	Stock

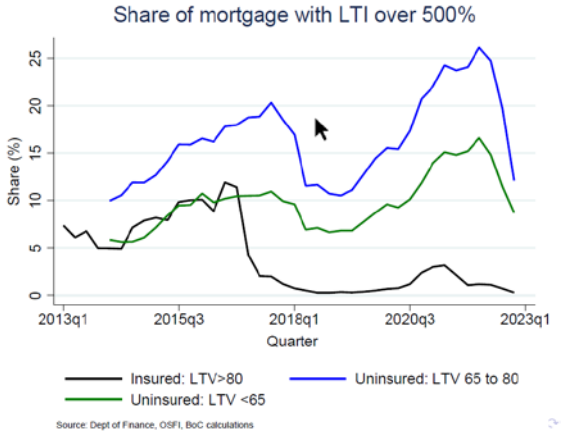
Housing market	• House price growth
	• Resale activity
	• Measures of exuberance:
	  ○ House price expectations
	  ○ Investor share
		• Measures of overvaluation

Mortgage market	• Growth rates of household credit • Share of high loan-to-income originations • Distribution of loan-to-value of originations	• Share of households with a high debt-to-income ratio • Share of households with a high debt-to-asset ratio

Key monitoring indicators — Graph 1

A. Housing market activity and price growth

B. Share of mortgage originations with a high loan-to-income (LTI) ratio[1]



[1] Note that the Bank of Canada has often focused on a 450% threshold for high LTI ratios. This note uses a 500% threshold to highlight the differences between the insured and uninsured markets in Canada.

2. Governance and objectives

2.1 Governance overview

In Canada, financial sector policy and ultimately the responsibility of safeguarding the financial system rests with the Minister of Finance. However, there is no formal agency with a mandate to ensure financial stability, and the tools are dispersed across both federal and provincial agencies.[1] In general, both the Minister of Finance and the Superintendent of Financial Institutions have tools at their disposal that are considered macroprudential. In addition, parts of the financial system, including deposit-taking credit unions and securities markets, fall under provincial jurisdiction.

Discussions on systemic risk and general financial sector policy are regularly held by financial system committees. These meetings are informal gatherings that are not governed by any formal legislation. The Financial Institutions Supervisory Committee (FISC), which is chaired by the Office of the Superintendent of Financial Institutions (OSFI) is an exception to this. To date, these informal gatherings have proved effective, but the IMF notes that there are potential areas of concern relating to federal/provincial collaboration.

The primary "gathering" for addressing systemic risk and potential changes to macroprudential policy is the Senior Advisory Committee (SAC), which is chaired by the Deputy Minister of Finance and attended by representatives of various federal agencies. The Bank of Canada is generally the analytical leader and is often the largest contributor at SAC meetings in identifying financial vulnerabilities and evaluating potential policy changes. Nonetheless, all agencies have generally been ramping up their analytical firepower in recent years.

[1] International Monetary Fund, "Systemic risk oversight and macroprudential policy", 20 December 2019, Country Report No. 20/19, https://www.imf.org/-/media/Files/Publications/CR/2020/English/1CANEA2020004.ashx.

FISC meetings, chaired by the OSFI, have recently been incorporating more systemic risk discussion and analysis. They were originally intended as forums for discussing individual institutions' concerns, with policy generally being considered microprudential. However, more recently, discussions have adopted a more macroprudential perspective. This is partly due to the use of specific tools that are macroprudential in nature, such as the domestic stability buffer (DSB), and, to a lesser extent, the stress test on mortgages. Both are discussed in more detail later.

Lastly, there are the Systemic Risk Surveillance Committee (SRSC) and Heads of Agency (HOA) meetings. They include both federal and provincial agencies, but the discussion is generally focused on surveillance rather than policy.

2.2 Housing-related macroprudential governance and objectives

In general, the objective of housing-related macroprudential policy in Canada has been to support lender resilience and thus ensure the stability of the financial system. However, there are some nuances, as the federal regulation of the mortgage market is split into two, depending on the LTV ratio of the mortgages at origination.

For high loan-to-value ratios (over 80%, called "high-ratio" by industry), the federal government guarantees mortgages via mortgage insurance. The Minister of Finance sets its policy for such mortgages so as to maintain the stability of mortgage finance as well as to provide access to the housing market. The role of mortgage insurance is to ensure lender resilience. However, the Finance Minister's policy setting has often given consideration to the stability of borrowers, as a concentration of borrowers either defaulting and/or selling houses at fire sale prices, could lead to instability across the financial system.

For lower loan-to-value (less than 80%, called "low-ratio" by industry), federally regulated financial institutions follow the prudential guidelines (Guideline B-20) laid out by the OSFI. The objective is primarily to support lender level resilience by following a guidelines-based approach to microprudential regulation. However, in practice, the OSFI's policy goal can at times be more focused on system-wide stability, such as the setting of the DSB for domestic systemically important banks (DSIBs)

Provincial and municipal governments have also enacted policies that are often considered macroprudential in nature.

First, there are provincially regulated financial institutions. Here, most lenders use the federal government-guaranteed mortgage insurance for high-LTV mortgages. In addition, many provinces follow the same guidelines for granting low-LTV mortgages as those used by the OSFI, with these policies mainly aiming to boost lender resilience.

Second, provincial and municipal authorities have also enacted foreign buyer taxes which aim to improve affordability for local residents. However, these policies have also been timed to counteract potential irrational exuberance by buyers.

Lastly, while the objective of federal prudential policy has mainly been to boost resilience, measures have generally been tightened during housing market booms, as any cooling in the market would have been welcomed as a useful by-product. In addition, the rules were tightened for government-insured mortgages from 2008 to 2012. The main aim of this was to reduce the reliance of the system on government-guaranteed mortgage insurance. Hence, policies were sometimes enacted that could potentially lean against the housing market. That said, it is unclear if these policies actually did so.

With regards to quantitative objectives, the primary indicator of success has been a combination of impacts on the quantity of new mortgages originated and the quality of the new mortgage originated as measured by the share of mortgages originated with a loan-to-income ratio over 500% (Graph 1.B)

3. Macroprudential instruments in practice

Macroprudential instruments used by the Canadian authorities to target housing-related risk can generally be divided into three categories: (1) borrower-based; (2) lender-based; and (3) local housing measures (Table 2).

Measures instruments used by the Canadian authorities to target housing-related risks

Table 2

Borrower-based Tools	Lender-based Tools	Local housing measures
• Rules for govt-insured mortgages ○ For LTV over 80% ○ Set by Minister of Finance ○ Limits on debt servicing ○ Use of qualifying mortgage rate for stress test of debt servicing ○ Maximum house value of C$1 million • Guideline B-20 for mortgages ○ For LTV 80% and under ○ Set by OSFI ○ No strict rules; banks set own risk tolerance ○ Use of a minimum qualifying mortgage rate for stress test of debt servicing	• Domestic stability buffer ○ Capital add-on for domestically systemically important banks (DSIBs) ○ Time-varying ○ Set by OSFI ○ Not explicitly housing-related • Supervision ○ Letters to bank about expectations regarding risk tolerance, etc • Capital rules for mortgage insurers ○ Tighten when house prices increase; regional ○ Set by OSFI • Securitisation rules ○ Govt-insured mortgages ○ Set by head of CMHC ○ Fees and limits on usage	• Foreign buyer taxes ○ Enacted by Ontario and British Columbia in 2016 and 2017 ○ Federal government has just started to enact such taxes • Vacancy taxes ○ Enacted by Ontario and British Columbia

The most visible tools in Canada are borrower-based tools. As shown in Table 2, these are split into two types, depending upon the loan-to-value ratio of the mortgage at origination.

Loans with an LTV of over 80% require government-guaranteed mortgage default insurance. This insurance is required by law for all federally regulated financial institutions. While the lender pays for the insurance, the one-time premium with a cost of 4.25% of the loan amount is always passed on to the borrower and folded into the overall mortgage. These loans have a minimum down payment of 5%. As a result, these loans generally have an LTV of nearly 100% at origination once the borrowed mortgage premium is included.

The finance minister sets the rules for insured mortgages. They are rigid, with strict limits on maximum amortisation (25 years), a ban on refinancing, and strong limits on debt servicing (gross debt servicing, including utilities, under 39% of gross income).

The main changes in the rules for insured mortgages since the great financial crisis (GFC) have been tightening steps to reduce the reliance of the mortgage market on government-guaranteed insurance. For instance, the maximum amortisation period was reduced in stages from 40 years in 2008 to 25 years in 2012.

A qualifying mortgage rate was introduced for variable rate mortgages in 2010. This was eventually expanded to cover all insured mortgages in October 2016, with the qualifying mortgage rate then referred to as the "stress test". However, the rate was actually a level determined by market conditions rather than an explicit add-on to the borrower's contract rate.

In June 2021 a floor was set on the qualifying rate of 5.25%, while an add-on of 200 bp above the contracted mortgage rate was also introduced. This was a tightening measure, as the qualifying rate at the time was only 4.79%. As contractual mortgage rates were under 2% at the time, 5.25% was the binding qualifying rate, rather than the 200-bp add-on. However, as rates rose throughout 2022, the 200-bp add-on is now the effective qualifying rate.

Loans with an LTV of 80% or less fall under the Guideline B-20 for mortgage underwriting established by the OSFI. B-20 was originally established in 2012. This guideline consists of principles rather than rigid rules. For instance, it originally suggested that banks use the insured mortgage qualifying rate to underwrite variable rate mortgages, but it does not explicitly put limits on debt servicing. In addition, there is no exclusive reliance on the collateral value for underwriting.

On 1 January 2018, B-20 was modified to create a stress test for mortgage qualification (referred to as the "minimum qualifying rate"), so that borrowers were stressed at the higher of the following two rates: the insured mortgage qualifying rate or the borrowers' contract rate +200bp. Likewise, a floor was added to the qualifying rate of 5.25% in June 2021. This was a tightening measure, which raised the minimum qualifying rate from 4.79%. The OSFI has recently performed a public consultation to modify the debt servicing features within B-20.

The lender-based tools are generally set by the OSFI. They usually aim to boost structural and target lender resilience. The exception is the use of the DSB, which is set by the OSFI in consultation with other federal agencies on the FISC. This buffer is a time-varying capital add-on for domestic systemically important banks. It is adjusted biannually, and has been adjusted several times, generally in an upwards direction, with the exception of a release of part of the buffer at the start of the Covid-19 pandemic. However, the DSB does not specifically target housing, and it is a tool for resilience rather than for leaning.

The OSFI also sets capital rules for mortgage insurers. They are a function of past price growth and are allowed to vary regionally. Due to rate increases, the OSFI recently held a consultation related to capital for mortgage insurers for non-amortising mortgages.[2] Moreover, the OSFI has occasionally used supervisory letters to reinforce expectations relating to risk practices and risk tolerance, although this is often considered part of the microprudential toolkit.

In addition to capital-based lender rules, there are rules about the securitisation of insured mortgages, which are set by the Canada Mortgage and Housing Corporation (CMHC). These rules have been tightened since the (GFC) to limit the reliance of banks on government-guaranteed securities. They consist of fees and usage limits, which also aim to increase competition in the mortgage market in addition to influencing financial stability. Lastly, local authorities have used foreign buyer and vacancy taxes to limit house price growth.

4. Effectiveness

4.1 Measuring success.

In general, there has not been a full test of the improved resilience of the Canadian mortgage market, as there has not yet been a full downturn in the housing market. In lieu of real-world results, the Bank has

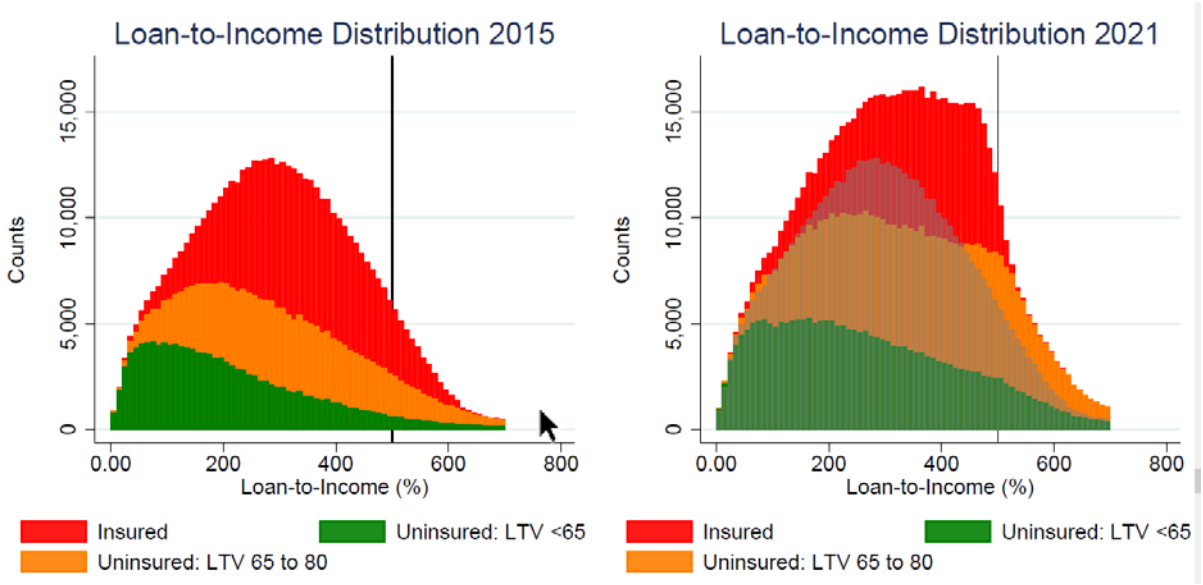
[2] In Canada, some mortgages have a fixed payment but a variable interest rate. As rates increase, these mortgages have a smaller principal payment. Given recent rate increases, these mortgages often do not cover the interest accruing, so they have negative amortisation.

relied upon a combination of micro data analyses and simulation results. The current downturn, which was caused by the increase in central bank policy rates in 2022/23, will provide some answers.

Simulation results informed by the micro data indicate that the system should be more resilient to a downturn. For example, Allen, Grieder, Peterson and Roberts (2020) take a cross-section of Canadian households' balance sheets and then calibrate the macroprudential changes using loan-level data to analyse Canadian household default rates in a stress scenario. Their results suggest that policies that lower the LTV have been more effective at reducing defaults than income-based policies such as tightening amortisation.

Based on loan-level data, there has been an improvement in the measured risk characteristics of new lending following tightening of borrower-based tools. The main result is that there was no growth in high-LTV, high-LTI mortgages in the low-rate environment in 2021 (see Graph 1b)). The tools were meant to limit the growth of riskier mortgages in a low-rate environment. To evaluate this, we compared the distribution of mortgage origination across LTI rates and LTV rates in the low-rate environment in 2015, before the rules were tightened, with the same distribution in the low-rate environment of 2021, after the tighter rules came into force. While the tighter rules did not dampen overall mortgage origination, the number of maximum-risk high-LTV, high-LTI mortgages was greatly reduced (Graph 2). These results also suggest that the guideline's approach for lower-LTV mortgages did not limit the origination of high-LTI mortgages.

The tightening of debt-service qualification rules for insured mortgages in 2016 resulted in fewer high-LTI mortgages for insured mortgages (LTV over 80%) in the low-rate environment in 2021 relative to the low-rate environment of 2015 Graph 2



Source: Allen, Grieder, Peterson and Roberts (2020)

4.2. Factors influencing success.

The tools used to date have generally been structural tools that were implemented in periods when leaning was warranted. Thus, the tools have not appeared to have any strong cyclical results. Instead, they have structurally improved the quality of mortgages.

In addition, the implementation of changes to B-20 by the OSFI has often been a deliberate process, with market participants given plenty of lead time ahead of changes. This resulted in a pull-forward of activity in the resale market (blue line, Graph 1A) in late 2017, ahead of the rule change in January 2018. Thus, there is evidence that a deliberate process can lead to temporary market distortions.

The Canadian experience also highlights the fact that using macroprudential tools that rely on the political process can lead to delays. For instance, both provincial foreign buyer taxes (2016 in British Columbia, 2017 in Ontario) were enacted only as the housing markets were peaking. In addition, the debt servicing rules for insured mortgages were not tightened until autumn 2016, nearly a year after the housing market started to grow strongly, following the rate declines in early 2015. Moreover, the OFSI did not tighten its debt servicing guidelines until January 2018, which constitutes an even longer delay.

Finally, the tightening of rules on debt servicing also coincided with a tightening of monetary policy, making it difficult to disentangle the effects of the macroprudential measures from monetary policy.

4.3 Leakages

There have been two types of leakage observed following the tightening of the debt servicing requirements in 2016 (for high-LTV insured mortgages) and 2018 (for low-LTV uninsured mortgages). There is a clear shift from high-LTV to low-LTV mortgages. Thus, the stricter rules on insured mortgages did not deter activity, but they did reduce the average LTV, thus lowering the riskiness of new mortgage originations.

There is an unregulated mortgage market in which private loans are originated outside any prudentially regulated entity. The Bank of Canada (along with the CMHC) is able to monitor the market share of unregulated lenders using land registry data that covers the universe of all mortgages. Following the tightening of the mortgage qualifying rate in 2016 and 2018, these unregulated lenders also picked up some market share, although this may also have been an effect of tighter monetary policy. However, the market share of unregulated providers is still quite small and not really of any significance (less than 2% of outstanding value, according to data from the CMHC).

5. Cost, benefits and unintended consequences

Policies have very likely made it harder for marginal households to enter into home ownership. The first-order effect has been a rise in the minimum down payment for high-LTI mortgages, primarily in expensive cities like Toronto and Vancouver. While there has not been any noticeable decline in activity in those expensive cities compared to other locations within Canada, the composition of buyers has likely shifted towards those who can make the larger down payment. Notably, these cities have seen an increase in investor (buy to rent) mortgages. The tighter policies have likely interacted with the supply scarcity for new homes to drive more buyers to the distant suburbs and neighbouring cities of Toronto.

The Bank has also been working closely with academics to construct models to capture the macroeconomic costs of implementing tighter macroprudential policies in the mortgage market. Allen and Greenwald (2022) have published a working paper on the Canadian Mortgage Market based on a

dynamic stochastic general equilibrium (DSGE) model that combines the tight rules of the insured market with the looser lower-LTV rules of the uninsured mortgage market. Further, Emenogu and Peterson (2022) incorporate an unregulated shadow banking market into the Canadian mortgage market to determine the extent to which leakage to the unregulated market weakens the impact of macroprudential and monetary policy on gross domestic product.

References

Allen, J, T Grieder, B Peterson and T Roberts (2020): "The impact of macroprudential housing finance tools in Canada", *Journal of Financial Intermediation*, 42, pp 1–14.

Allen, J and D Greenwald (2022): "Managing a housing boom".

Emenogu, U and B Peterson (2022): "Unregulated lending, mortgage regulations and monetary policy", Bank of Canada Staff Working Paper 22–28.

International Monetary Fund (2020): "Canada: Financial sector assessment program – Technical note – System risk oversight and macroprudential policy". IMF Country Report No. 20/19.