

# Effects of macroprudential policy announcements on perceptions of systemic risks

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## Introduction

Macroprudential policy (MPP) measures aim to increase the resilience of the financial system by reducing systemic risks, and as a result preserve overall financial stability. In Canada, some MPPs have effectively reduced the risk of a boom-bust cycle in credit and house prices, dampening the risks of an economic downturn in the medium run (Duprey and Ueberfeldt 2018, 2020). However, it is not clear how announcements of MPPs affect the way financial markets perceive systemic risks.

In this paper, we first introduce a comprehensive history of broadly defined MPP events in Canada since the 1980s. Then, we document the short-run effects of MPP announcements on market-based measures of systemic risk.

We find that markets perceive:

- lender-side MPP tightening announcements as reducing the systemic risk of banks
- borrower-side MPP easing announcements as increasing the systemic risk of banks

We also find that our results are significant for large banks, but not for smaller financial institutions.

## A new database of macroprudential policy changes in Canada

Canada has a long history of implementing MPP measures. In our dataset, we have recorded 88 changes, starting in the early 1980s.<sup>1</sup>

- About half of these are **lender-side MPPs**: that is, measures aimed at directly constraining the overall supply of loans by lenders.
- The other half are **borrower-side MPPs**: that is, measures aimed at constraining the demand for loans based on individual borrower characteristics.

Overall, Canada has relied on a limited set of borrower-side MPPs, with a more diverse set of lender-side tools ([Chart 1](#)).<sup>2</sup>

Here, we suggest a broad definition of *macroprudential policies*. We consider these to be policies that influence the demand or supply of credit driven by concerns related to excessive leverage, debt growth and house price growth. As a result of this definition, we include policies like provincial taxes on borrowers or non-cyclical bank capital regulation, even

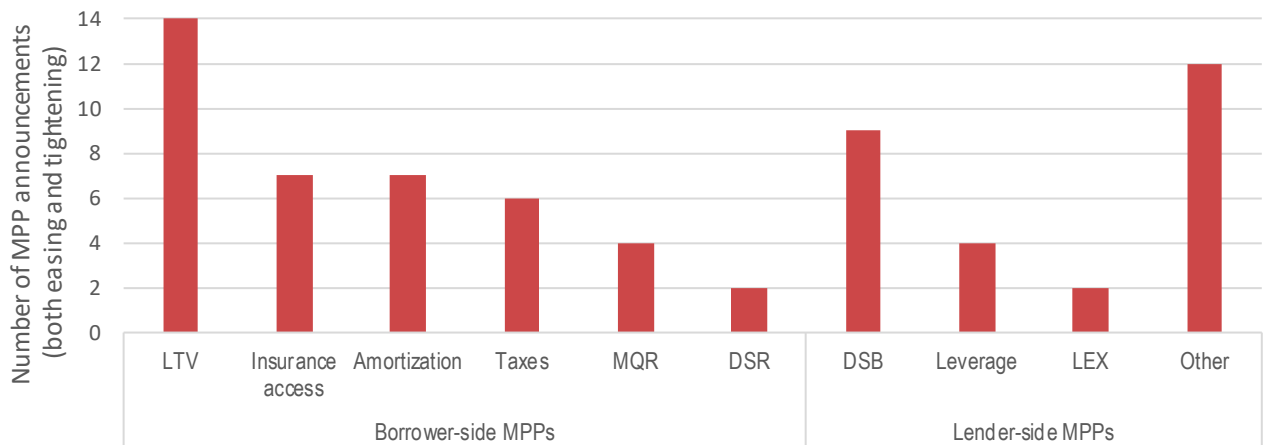
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<sup>1</sup> The International Monetary Fund collected MPP events through surveys of national authorities across countries (Alam et al. 2024). Its database covers the implementation month for 56 recorded changes. We cover a few additional events and focus on the announcement day.

<sup>2</sup> Tables in [Appendix A](#) list all the measures, their detailed description and their announcement and implementation days.

though these may not be, strictly speaking, macroprudential or defined as such by authorities taking the measures.

**Chart 1: Canada has frequently used a limited set of borrower-side macroprudential policy measures (1985–2024)**



Note: Changes to mortgage insurance rules that are separately announced by the Canada Mortgage and Housing Corporation and Genworth are counted as one measure. LTV is loan-to-value ratio; MQR is mortgage qualifying rate; DSR is debt service ratio; DSB is domestic stability buffer; LEX is large exposure limit. *Other* refers to measures that were announced only once, including liquidity covered ratio, surcharge for domestic systemically important banks, capital conservation buffer, loss given default, loan loss provisions, net stable funding ratio and deferrals.

## Borrower-side macroprudential policy measures

### Taming household credit growth and reducing riskier loans

Most borrower-side MPPs are related to mortgages and the housing market. This is largely because the Government of Canada sets the rules for the mortgages it insures through the Canada Mortgage and Housing Corporation (CMHC). The borrower-side MPP toolkit shown in [Chart 1](#) includes:

- maximum loan-to-value (LTV) regulation: that is, how much one can borrow as a percentage of the house price
- changes in mortgage amortization rules and rules around qualifying for mortgage insurance
- limits on borrowers' maximum monthly mortgage payments: either in normal times (debt-service ratio, DSR) or under stressed conditions if rates increase (mortgage qualifying rate, MQR)

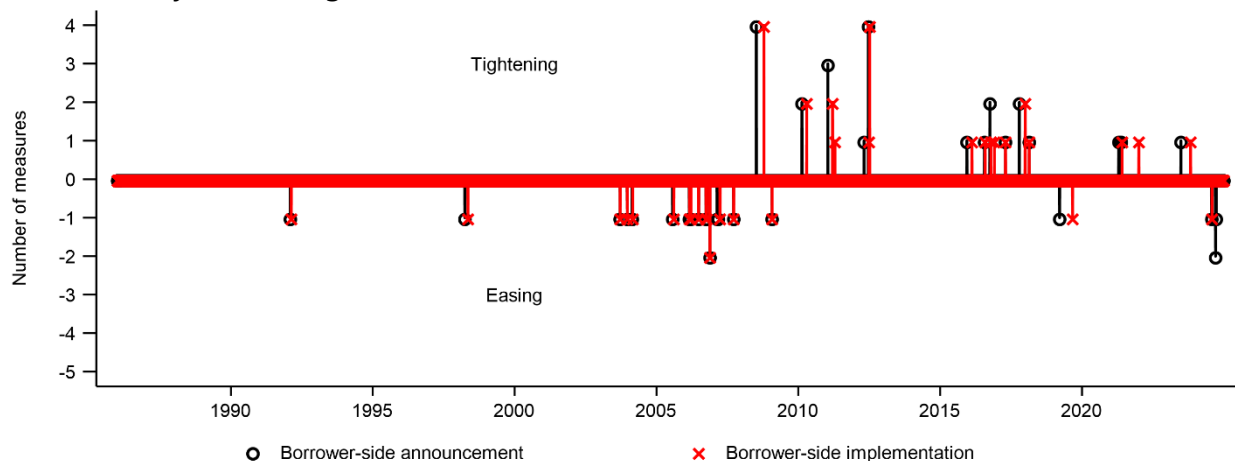
The existing empirical findings in the Canadian context show that borrower-side MPPs have successfully tamed excessive growth of household credit and reduced tail risks in the economy (Duprey 2018; Allen et al. 2020; Duprey and Ueberfeldt 2020; Hartley and Paixão 2024).

## Easing measures to support affordability or tightening to limit riskier debt

**Chart 2** presents the time series of the borrower-side MPPs in Canada. Positive (negative) numbers indicate the number of MPP tightening (easing) measures on a given day. The difference between the black circles and red crosses corresponds to the time lag between the announcement of the MPP and its implementation. After tighter measures are announced, households could fast-track their home purchase prior to the implementation (Kuncl 2016). Across events (median), we find that borrower-side MPPs are typically implemented one month after being announced. Thus, borrowers do not have a lot of time to adjust their behaviour prior to rule changes.

Before the 2008–09 global financial crisis, many of those measures were labelled as supporting housing affordability and access to homeownership. But those were essentially the same tools that we call MPP measures today. The global financial crisis revived interest in macroprudential concepts to limit the buildup of households’ vulnerabilities, with a set of successive MPP tightening measures. MPPs were also frequently used during periods of low monetary policy rates to limit the buildup of risky debt, for instance after 2015. In this way, MPP can help reduce systemic risks when monetary policy rates need to stay low for an extended period to support the economy.<sup>3</sup> Finally, in the second half of 2024, the federal government adjusted mortgage insurance rules to provide added support for borrowers facing affordability challenges.

**Chart 2: Borrower-side macroprudential policy measures are usually implemented shortly after being announced**



<sup>3</sup> For a survey on the Canadian experience of monetary and macroprudential policy interactions, see Duprey, Terajima and Yang (2024).

## Lender-side macroprudential policy measures

### Bank capital requirements to address systemic risk

Lender-side MPPs tend to relate to bank capital requirements in various forms.

The most common MPP in recent years is a time-varying capital requirement, the domestic stability buffer (DSB) ([Chart 1](#)). Canada's largest banks build up funds in good times that can be used to cover losses during periods of financial uncertainty or stress.<sup>4</sup> The Office of the Superintendent of Financial Institutions (OSFI) reassess the level of the buffer every six months.

Other non-time-varying bank capital requirements have also been implemented over the years, such as a capital requirement add-on for domestic systemically important banks (DSIBs). These are banks that would trigger a significant negative impact on the domestic economy if they were to fail.

In addition, OSFI has access to a wider range of supervisory tools that can be used to address systemic risks. These include changes in the rules around loss provisioning (e.g., loan-loss provisions; loss given default calculations; dividend restrictions; deferrals in the accounting of loans in arrears).

### Tightening in response to the global financial crisis and easing due to the COVID-19 pandemic

[Chart 3](#) displays the time series of the lender-side MPP measures in Canada.

In contrast to the one-month median implementation lag for borrower-side measures, announcements for lender-side MPPs often precede implementation by many months (a median of six months). This is shown by the difference between the black circles and red crosses. When tightening MPP measures, OSFI has to provide enough time for banks to smoothly adjust to the new capital or liquidity requirements. Otherwise, raising capital or improving liquidity rapidly would strain markets or significantly increase the cost for banks.<sup>5</sup>

In the early 1980s, a key change of lender-side MPP was the progressive phasing out of mandatory bank reserve requirements. Decades later, the Basel III reforms tightened international regulatory standards for banks following the global financial crisis. These reforms were progressively introduced in Canada, but some were postponed during the COVID-19 pandemic.

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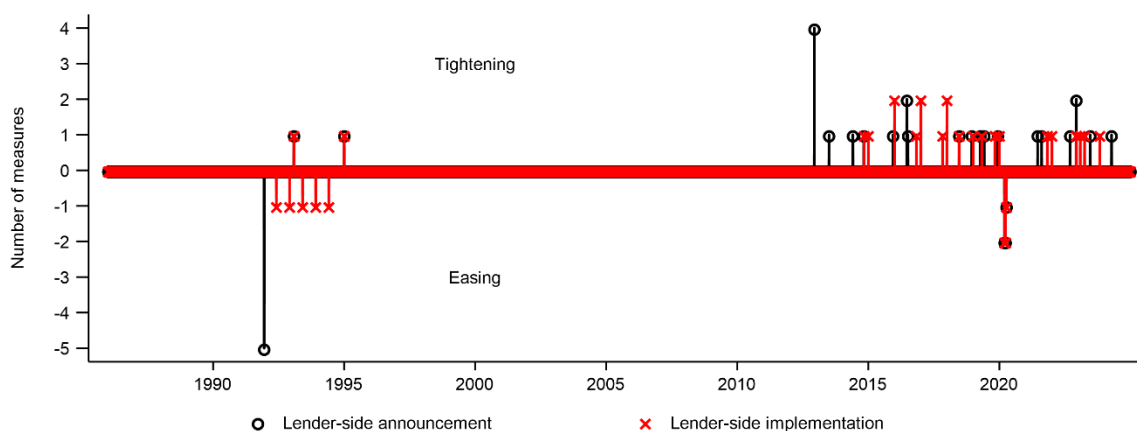
<sup>4</sup> For the effects of the domestic stability buffer on welfare, see García and Schroth (2021). For the ability of cyclical bank capital requirements to reduce household debt, see Alpanda, Cateau and Meh (2018).

<sup>5</sup> For instance, Chapter 1, paragraph 73 of the Capital Adequacy Requirements guidelines published by OSFI on October 31, 2023, states that for the domestic stability buffer (a bank capital add-on), "increases will be subject to a phase-in period; decreases will be effective immediately" (OSFI 2023).

Delaying the implementation of the Basel III reforms was one of five different lender-side easing MPPs announced in March and April 2020, including:

- deferred loan repayments for struggling borrowers
- the partial release of the domestic stability buffer
- the commitment to not increase the domestic stability buffer for 18 months
- temporary adjustments to the leverage ratio to exclude central bank reserves and sovereign-issued securities

**Chart 3: Lender-side macroprudential policy measures tightened more following the 2008–09 global financial crisis**



## Lender-side macroprudential policy tightening announcements increase the perception of banks' resilience

We now quantify the effects of MPP announcements on market perception of risks (see [Appendix B](#)). We look at the effects on market-based measures of systemic risks in the first 30 business days after an announcement. This reflects how financial markets perceive an MPP regulation upon hearing about the measure.

**Chart 4** displays the impulse responses of two measures of systemic risks for Canadian banks:

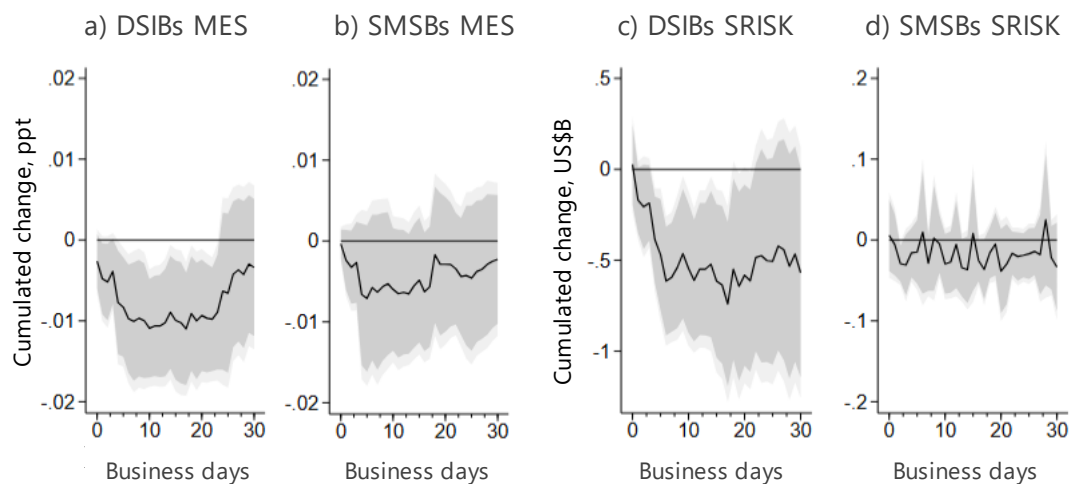
- the **marginal expected shortfall (MES)** (Acharya et al. 2016)—that is, the drop in value of an additional dollar of bank equity if banks were to face a 40% stock price correction over the subsequent six months
- the **systemic risk (SRISK) measure** of Brownlees and Engle (2016), which represents the amount of bank recapitalization needed to meet an 8% minimum capital requirement in a severe downturn, defined as a scenario where overall stock prices drop by 40% over six months

We compute both measures for the six largest Canadian banks (categorized as DSIBs) and for small and medium-sized banks (SMSBs).<sup>6</sup>

Our analysis highlights that markets perceive lender-side MPP tightening announcements as reducing banks' systemic risks for both measures (Chart 4). Market participants believe that MPP tightening works as intended. Our results are in line with Bluwstein and Patozi (2024), who carry out a related exercise for measures announced by the Bank of England.

We also find that the decline in systemic risk measures is significant for DSIBs (Chart 4, panels a and c) but not for SMSBs (panels b and d). This is perhaps not too surprising since MPP measures generally target large Canadian banks.<sup>7</sup> We do not conduct a similar exercise for the lender-side easing announcements since there are too few of these events.

**Chart 4: Lender-side macroprudential policy tightening announcements reduce market perceptions of systemic risk for DSIBs**



Note: The responses are 30 business days after lender-side MPP announcements. Long-run marginal expected shortfall (MES) is expressed in percentage points (ppt) and the systemic risk measure (SRISK) is expressed in US\$ billions. Responses are for domestic systemically important banks (DSIBs) and other small and medium-sized banks (SMSBs), including regional banks, and bank holding and loan companies. The shaded areas represent the 90% and 95% robust confidence intervals.

<sup>6</sup> The DSIBs are Bank of Montreal, Bank of Nova Scotia, Canadian Imperial Bank of Commerce, National Bank of Canada, Royal Bank of Canada and Toronto-Dominion Bank. The SMSBs are Canadian Western Bank, Equitable Bank, First National Financial Corporation, Home Capital Group and Laurentian Bank. Note that DSIBs have stricter requirements than other banks in Canada.

<sup>7</sup> As stated in paragraph 10 of Annex 1 of the Capital Adequacy Requirements guidelines published by OSFI on October 31, 2023, "the institutions designated as DSIBs have historically had, and will continue to be subject to, more intensive supervision because of their larger size, broader and more complex business models and consequently more significant risk profiles."



## Borrower-side macroprudential policy easing announcements increase perceptions of banks' systemic risks

Borrower-side MPPs could also impact the perception of banks' systemic risks through the composition of banks' loan portfolios. Borrower-side easing would attract less financially sound borrowers, but the effect for banks' risks is not immediately clear since mortgage lending is often insured by the CMHC.<sup>8</sup> If the perception is that mortgage insurance covers all risks, then borrower-side easing would be seen as simply increasing the volume of bank loans without residual risks for banks. If mortgage insurance does not always apply or is not perceived to cover all risks, then the lower quality of borrowers would increase perceived bank risks.

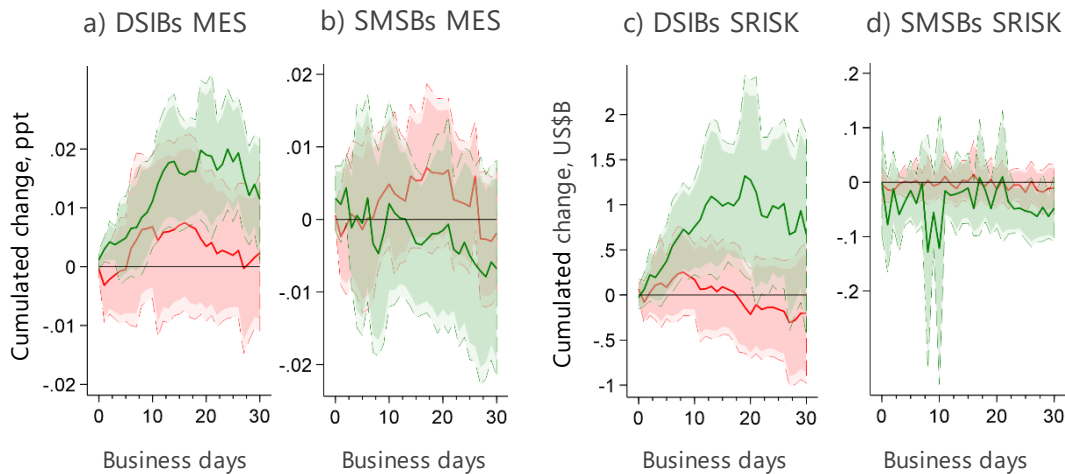
**Chart 5** displays the impulse responses after borrower-side MPP easing (green) and tightening (red) announcements. The results suggest that borrower-side easing announcements increase the perception of systemic risks of banks. Conversely, we do not find any significant effect from borrower-side MPP tightening announcements. If we do not allow for asymmetric reactions between borrower-side easing and tightening, the overall average effect would be insignificant.

Our results may suggest that markets put a larger weight on potential risks from lower-quality borrowers after an easing announcement. But it may also reflect a composition of MPP measures between the insured and uninsured mortgage markets. Here again, the effect is observed for DSIBs (panels a and c) but not for SMSBs (panels b and d).

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<sup>8</sup> Note that the Canadian mortgage market is segmented where insured mortgages have tight rules while uninsured mortgages have only guidelines on bank risk management practices.

**Chart 5: Borrower-side macroprudential policy easing announcements increase market perceptions of systemic risks for DSIBs**



Note: The responses are 30 business days after borrower-side MPP announcements. Long-run marginal expected shortfall (MES) is expressed in percentage points (ppt) and expressed in US\$ billion for the systemic risk measure (SRISK). Responses for easing announcements are in green and in red for tightening announcements. Responses are for domestic systemically important banks (DSIBs) and other small and medium-sized banks (SMSBs) including regional banks, bank holding companies and loan companies. The shaded areas represent the 90% and 95% robust confidence intervals.

## Conclusion

We introduce a comprehensive dataset containing detailed macroprudential policy measures implemented in Canada since the 1980s. We then assess the effects of MPP announcements on daily systemic risk measures of banks derived from market data.

Our results highlight that lender-side tightening measures increase the market’s perception of the resilience of banks. In contrast, borrower-side easing announcements increase the perception of the systemic risks of banks, especially for large banks.

# Appendix A: Data

Table A-1: Lender-side macroprudential policy changes in Canada

Type	Event	Announcement	Implementation	Description of the measure
Easing*	Reserves	11/1980	02/1981	Lower requirements for Canadian-dollar notice deposits
Tightening*	Reserves	11/1980	02/1981	Introduction of 3% on foreign currency deposits
Easing*	Reserves	11/1980	03/1981	Lower requirements for Canadian-dollar demand and notice deposits
Easing*	Reserves	11/1980	09/1981	Lower requirements for Canadian-dollar demand and notice deposits
Easing*	Reserves	11/1980	03/1982	Lower requirements for Canadian-dollar demand and notice deposits
Easing*	Reserves	11/1980	09/1982	Lower requirements for Canadian-dollar demand and notice deposits
Easing*	Reserves	11/1980	03/1983	Lower requirements for Canadian-dollar demand and notice deposits
Easing*	Reserves	11/1980	09/1983	Lower requirements for Canadian-dollar demand and notice deposits
Easing*	Reserves	11/1980	03/1984	Lower requirements for Canadian-dollar demand and notice deposits
Easing*	Reserves	11/1980	09/1984	Lower requirements for Canadian-dollar demand and notice deposits
Easing**	Reserves	13/12/1991	01/06/1992	Gradual phase-out of reserve requirements
Easing**	Reserves	13/12/1991	01/12/1992	Gradual phase-out of reserve requirements
Tightening	Risk appetite	31/01/1993	31/01/1993	Required written investment and lending policies, describing risk profile and establishing limits on exposures
Easing**	Reserves	13/12/1991	01/06/1993	Gradual phase-out of reserve requirements
Easing**	Reserves	13/12/1991	01/12/1993	Gradual phase-out of reserve requirements
Easing**	Reserves	13/12/1991	01/06/1994	Complete elimination of reserve requirements
Tightening	LEX	31/12/1994	31/12/1994	Large exposure limit of 25% of total capital (for banks, authorized foreign banks, and trust and loan companies)
Tightening	Leverage	30/10/2014	01/11/2014	Leverage ratio that meets or exceeds 3% of Tier 1 capital/exposure
Tightening***	LCR	30/05/2014	01/01/2015	Liquidity coverage ratio of 100% minimum
Tightening	DSIBs	02/07/2013	01/01/2016	DSIBs common equity Tier 1 surcharge equal to 1% of risk-weighted assets
Tightening***	CCB	10/12/2012	01/01/2016	Set at 0.625% of risk-weighted assets
Tightening	LGD	11/12/2015	01/11/2016	Minimum house price correction to calculate downturn loss given default for uninsured mortgages
Tightening	Sectoral	07/07/2016	01/01/2017	Updated capital requirements for federally regulated mortgage insurers
Tightening***	CCB	10/12/2012	01/01/2017	From 0.625% to 1.25% of risk-weighted assets
Tightening	LLP	21/06/2016	01/11/2017	DSIBs adoption of IFRS 9, introducing expected loan loss provisioning
Tightening	LLP	21/06/2016	01/01/2018	Other federally regulated entities adoption of IFRS 9, introducing expected loan loss provisioning
Tightening***	CCB	10/12/2012	01/01/2018	From 1.25% to 1.875% of risk-weighted assets
Tightening	DSB	20/06/2018	20/06/2018	Set at 1.5% of risk-weighted assets
Tightening***	CCB	10/12/2012	01/01/2019	From 1.875% to 2.50% of risk-weighted assets
Tightening	DSB	12/12/2018	30/04/2019	From 1.5% to 1.75% of risk-weighted assets
Tightening	DSB	04/06/2019	31/10/2019	From 1.75% to 2.00% of risk-weighted assets
Tightening	LEX	10/04/2019	01/11/2019	Large exposure limits: inter-GSIB 15% of Tier 1 Capital, Canadian GSIB to DSIB 20%, Canadian DSIB to another 20%
Tightening***	NSFR	11/04/2019	01/01/2020	NSFR becomes effective as a minimum regulatory requirement for Canadian DSIBs
Tightening	DSB	10/12/2019		From 2.00% to 2.25% of risk-weighted assets; to be effective April 30, 2020, but OSFI postponed implementation due to the COVID-19 pandemic
Easing	DSB	13/03/2020	13/03/2020	From 2.25% to 1.00% of risk-weighted assets
Easing	DSB	13/03/2020	13/03/2020	No subsequent increase for at least 18 months
Easing	Deferrals	27/03/2020	27/03/2020	Loans subject to payment deferrals will temporarily continue to be treated as performing loans
Easing	Basel	27/03/2020	27/03/2020	Implementation of revisions to the Basel market risk framework delayed until 2023–24
Easing	Leverage	09/04/2020	09/04/2020	Exclude central bank reserves and sovereign-issued securities from banks' leverage ratio calculations
Tightening	DSB	17/06/2021	31/10/2021	From 1.00% to 2.50% of risk-weighted assets
Tightening	Leverage	12/08/2021	01/01/2022	End of exclusion of sovereign bonds for the leverage ratio calculation
Tightening	DSB	08/12/2022	08/12/2022	Changes to the framework with range expanded from 0%–2.5% to 0%–4%
Tightening	DSB	08/12/2022	01/02/2023	From 2.50% to 3.00% of risk-weighted assets
Tightening	Leverage	13/09/2022	01/04/2023	End of exclusion of central bank reserves for the leverage ratio calculation
Tightening	DSB	20/06/2023	01/11/2023	From 3.00% to 3.50% of risk-weighted assets
Tightening	Risk appetite	12/04/2024	01/01/2025****	Limit on the fraction of an institution's portfolio with uninsured mortgage loans that exceed 4.5 times a borrower's income

Note: \* Announcement and implementation day not available. \*\* Announcement date is when the *Bank Act* received royal assent. \*\*\* The announcement date from Office of the Superintendent of Financial Institutions (OSFI) is different than the date when the Bank for International Settlements published its recommendation. \*\*\*\* Or 01/02/2025 depending on the start of the fiscal quarter for each financial institution. LCR is liquidity coverage ratio; DSIB is domestic systemically important bank; CCB is capital conservation buffer; LGD is loss given default; LLP is loan loss provision; DSB is domestic stability buffer; GSIB is globally systemically important bank; NSFR is net stable funding ratio; LEX is large exposure limit.

Sources: Alam et al. (2019), Kuttner and Shim (2016), Clinton (1997), OSFI, Canadian Legal Information Institute, various news articles and Bank of Canada

**Table A-2: Borrower-side macroprudential policy changes in Canada**

Type	Event	Announcement	Implementation	Description of the measure
Easing	LTV	01/02/1992	15/02/1992	From 90% to 95% for first-time homebuyers; First Home Loan Insurance Program (1992)
Easing	LTV	31/03/1998	11/05/1998	From 90% to 95% to all homebuyers within regional house price limits
Easing	Amortization	25/02/2003	03/03/2003	From 25 to 30 years for insured mortgages (CMHC)
Easing	Insurance access	19/09/2003	22/09/2003	Removal of regional house-price caps on mortgage insurance access
Easing	Insurance access	22/12/2003	22/12/2003	Minimum down payment of 5% can be borrowed (Genworth) for mortgage insurance applications
Easing	Insurance access	23/02/2004	01/03/2004	Minimum down payment of 5% can be borrowed (CMHC) for mortgage insurance applications
Easing	LTV	27/07/2005	12/08/2005	From 90% to 95% for variable rate mortgages
Easing	Amortization	16/03/2006	20/03/2006	From 25 to 30 and 35 years for insured mortgages (Genworth)
Easing	Amortization	28/06/2006	28/06/2006	From 30 to 35 years for insured mortgages (CMHC)
Easing	LTV	02/10/2006	02/10/2006	From 95% to 100% (Genworth)
Easing	Amortization	10/10/2006	10/10/2006	From 35 to 40 years for insured mortgages (Genworth)
Easing	LTV	19/11/2006	19/11/2006	From 95% to 100% (CMHC)
Easing	Amortization	19/11/2006	19/11/2006	From 35 to 40 years for insured mortgages (CMHC)
Easing	LTV	20/02/2007	29/03/2007	Mortgages with LTV above 80% (instead of 75%) must be insured
Easing	Insurance access	06/03/2007	30/03/2007	Insured mortgages for self-employed by CMHC
Easing	LTV	21/09/2007	21/09/2007	From 90% to 95% for refinancing
Tightening	LTV	09/07/2008	15/10/2008	From 100% to 95% (limit for new mortgages)
Tightening	Amortization	09/07/2008	15/10/2008	From 40 to 35 years for insured mortgages
Tightening	DSR	09/07/2008	15/10/2008	Total debt service ratio set at 45%
Tightening	Credit score	09/07/2008	15/10/2008	Minimum credit score of 620 for homebuyers
Easing	Taxes	27/01/2009	28/01/2009	Tax credit for first-time homebuyers and renovations
Tightening	LTV	16/02/2010	19/04/2010	From 95% to 90% for refinancing and from 95% to 80% for investment properties
Tightening	MQR	16/02/2010	19/04/2010	Stressed DSR for mortgages with LTV > 80% with variable rate or rate fixed for less than five years; must qualify using the higher of the contractual rate or the benchmark five-year fixed posted rate of the Big Six banks
Tightening	Amortization	17/01/2011	18/03/2011	From 35 to 30 years for insured mortgages
Tightening	LTV	17/01/2011	18/03/2011	From 90% to 85% for refinancing
Tightening	Insurance access	17/01/2011	18/04/2011	No insurance for non-amortizing lines of credit secured by homes
Tightening	Insurance access	26/04/2012	29/06/2012	Canadian banks cannot issue covered bonds backed by government-insured mortgages
Tightening	LTV	21/06/2012	09/07/2012	From 95% to 80% for house prices over \$1 million and from 85% to 80% for refinancing
Tightening	Amortization	21/06/2012	09/07/2012	From 30 to 25 years for insured mortgages
Tightening	DSR	21/06/2012	09/07/2012	Set at 39% (gross) and 44% (total) with added loan documentation requirements
Tightening	LTV	21/06/2012	09/07/2012	Set at 65% for non-amortizing HELOCs; beyond the limit, HELOCs must be amortizing
Tightening	LTV	11/12/2015	15/02/2016	From 95% to 90% for house prices between \$0.5 million and \$1 million
Tightening	Taxes	25/07/2016	02/08/2016	Foreign buyer tax in Vancouver of 15%
Tightening	MQR	03/10/2016	17/10/2016	Stressed DSR for all mortgages with LTV > 80%; must qualify using the higher of the contractual rate or the benchmark five-year fixed posted rate of the Big Six banks
Tightening	Insurance access	03/10/2016	30/11/2016	Rules for access to government insurance of mortgages with high LTV ratios applied to low LTV
Tightening	Taxes	20/04/2017	21/04/2017	Foreign buyer tax in the Greater Golden Horseshoe area (around Toronto) of 15%
Tightening	MQR	17/10/2017	01/01/2018	Stressed DSR for mortgages with LTV < 80%; must qualify at the greater of the contractual mortgage rate plus 2 percentage points or the benchmark five-year fixed posted rate of the Big Six banks
Tightening	LTV	17/10/2017	01/01/2018	Set at 65% for non-conforming loans
Tightening	Taxes	20/02/2018	21/02/2018	Foreign buyer tax in Vancouver from 15% to 20% with extended geographical coverage
Easing	Taxes	19/03/2019	02/09/2019	Subsidy by CMHC for mortgage of first-time homebuyers (5%–10% shared mortgage equity)
Tightening	MQR	20/05/2021	01/06/2021	Stressed DSR for all uninsured mortgages; must qualify using the higher of a 5.25% floor or contractual mortgage rate plus 2 percentage points
Tightening	Taxes	19/04/2021	01/01/2022	Federal tax at 1% on the ownership of vacant or underused housing
Tightening	LTV	28/06/2023	31/10/2023*	Maximum LTV set at 65% for combined loan plans (loans with shared equity features and reverse mortgages)
Easing	Amortization	29/07/2024	01/08/2024	From 25 to 30 years, for insured mortgages for first-time homebuyers purchasing new builds
Easing	Amortization	16/09/2024	15/12/2024	From 25 to 30 years, for insured mortgages to all first-time homebuyers and to all buyers of new builds
Easing	Insurance access	16/09/2024	15/12/2024	Maximum house price cap from \$1 to \$1.5 million to qualify for an insured mortgage (i.e., LTV > 80%)

Note: \* Or 31/12/2023 depending on the end of fiscal year of each financial institution. LTV is the loan-to-value ratio; DSR is the debt service ratio; MQR is the mortgage qualifying rate; HELOC is home equity line of credit.

Sources: Duprey and Ueberfeldt (2020), Alam et al. (2019), Krznar and Morsink (2014), Cheung (2014), Allen et al. (2020), Kuttner and Shim (2016), Cerutti, Claessens and Laeven (2017), Office of the Superintendent of Financial Institutions, Department of Finance Canada, Government of British Columbia, Government of Ontario, Canada Mortgage and Housing Corporation (CMHC), Genworth Financial Canada and various news articles

## Appendix B: Technical details

We use local projection methods (Jorda 2005) to quantify the effects of MPP announcements. In particular, we regress the  $h$ -period cumulative change in the dependent variable  $Y_t$  on the number of lender-side and borrower-side MPP announcements ( $MPP_t^L$  and  $MPP_t^B$ ), its own lags ( $Y_{t-k}$ ), as well as lags of control variables ( $\mathbf{X}_{t-k}$ ). We estimate the following equation:

$$Y_{t+h} - Y_{t-1} = c + \beta_L^h MPP_t^L + \beta_B^h MPP_t^B + \sum_{k=1}^{40} \rho_k^h Y_{t-k} + \sum_{k=1}^{40} \delta_k^{h'} \mathbf{X}_{t-k} + \varepsilon_{t+h},$$

where the control variables ( $\mathbf{X}_{t-k}$ ) contain the change in the overnight rate to capture the domestic monetary policy changes, a financial stress index (Duprey 2020) to capture crises episodes, the growth rate of the stock price index to capture the market sentiment and the change in the US corporate bond yield spread to capture the global risk premium. We use Newey-West standard errors due to the potential heteroskedasticity and autocorrelation in the error term.

We can assess the effect of an MPP announcement as the average for both easing and tightening measures by directly using the variables presented in [Chart 2](#) or [Chart 3](#), or we can split the estimation for easing or tightening measures separately.

Our results are robust to modifications in the local projection equation, such as

- including the lags of the MPP announcements
- including monetary policy decision dates
- using different lag lengths for the autoregressive term and controls
- excluding the control variables altogether

We also perform a placebo test where we artificially pull forward the announcement dates by 60 business days: as expected, almost all results become insignificant.

For more details, please refer to Duprey and Tuzcuoglu (forthcoming).

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