



Strengthening International Capital and Liquidity Standards: A Macroeconomic Impact Assessment for Canada

Highlights—August 2010

G-20 leaders have agreed on comprehensive financial sector reforms to reduce the risk of future financial crises and strengthen banking systems. Raising the amount and quality of capital and liquidity that financial institutions must carry is a central component of the reforms.

The Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS) conducted two international studies to assess the benefits and costs of the new standards over

- (i) the longer-term period when the proposals are fully implemented, and
- (ii) the initial transition period during which the new standards will be introduced.

Bank of Canada staff participated in both studies. The Bank also carried out its own assessment of the implications of these new standards for the Canadian financial system and economy. This report summarizes the Bank's core results for Canada, and compares them with the results recently published by the FSB and the BCBS.

The report finds significant net benefit for Canada from the new banking rules resulting from the decreased likelihood of future financial crises. The macroeconomic costs of implementing the new standards in Canada are found to be small and broadly similar to those of other jurisdictions.

When the benefits and costs are assessed on a present-value basis, the estimated net economic benefits to be gained over time from improving the safety and robustness of the Canadian and international financial systems amount to about \$200 billion for Canada—equivalent to about 13 per cent of GDP.

ANALYSIS

The focus of the report is on the macroeconomic impact in Canada of representative changes in capital and liquidity standards.^{1,2}

The report quantifies the potential impact of strengthened capital and liquidity standards on the level of economic output. The principal benefit is reduced incidence of financial crises. To assess this, the probabilities and economic costs of historical financial crises were evaluated, and used as an indicator of likely future crises. A modelling approach was employed to estimate the extent to which stronger capital and liquidity standards can help to reduce the incidence of crises.

The benefits of higher capital and liquidity standards were then weighed against the potential costs to the Canadian economy. These costs arise from an increase in the cost of financial intermediation. It is expected that banks will seek to pass on the cost of the higher capital and liquidity requirements through higher lending rates to borrowers. The Bank calculated the effect on lending spreads arising from increased capital and liquidity requirements. These results were then used as an input to the Bank's macroeconomic models to gauge the impact on economic output. In assessing the costs of implementing the new standards, the Bank also analyzed potential credit rationing, recognizing that banks may restrict the availability of credit as they adjust their capital and liquidity positions to meet the new standards.

- ¹ Representative changes are used because the calibration of the new rules will not be finalized until later this year.
- ² Based on the revised liquidity proposals published by the BCBS in July 2010, it is expected that the impact of the new Liquidity Coverage Ratio standard for Canadian banks as a group will be smaller than the impact of the proposed capital standards. Indeed, the new liquidity standard is found to be roughly equivalent to a 1-percentage-point increase in bank capital requirements.

Bank of Canada staff ran simulations through several different models to verify the robustness of the results and to provide different perspectives on the possible outcomes. The models and methodologies are explained in the annexes to the report.

BENEFITS

The economic benefits for Canada and other countries arising from stronger capital and liquidity standards for banks are potentially quite large. These benefits, not all of which are quantified, can emerge from a variety of sources:

- Higher capital and liquidity standards will contribute to a *lower incidence of financial crises*, which have proven extremely costly in terms of lost output and employment.
- It is possible that, in addition to the incidence, the *severity of financial crises will be reduced*.
- With fewer financial crises, the economy will benefit from *smoother economic cycles*.
- Higher standards (in capital and liquidity and, more broadly, in the supervisory framework) may help to *reduce the risk that resources are misallocated*.

The most important benefit to the global economy arises from a lower incidence of financial crises, which can originate in one country but spread through the global financial system. Drawing on the international studies, the Bank of Canada's analysis finds that increases in capital and liquidity requirements generate significant gains in the level of output relative to the baseline trend. For example, when combined with strengthened liquidity standards, an increase of 2 percentage points in bank capital ratios results in an annual 1.1 per cent increase in the expected level of GDP relative to trend. In other words, these benefits would accrue over time.

For Canada, three-quarters of the benefits arise from the decrease in the likelihood of foreign financial crises, while the remainder represents the gains to be achieved from the reduced probability of a domestic financial crisis.

COSTS

Stronger prudential standards impose costs on the economy, since banks will try to pass on to their customers the higher costs of carrying more capital and liquidity. More costly financing can result in reduced consumption and investment spending, which, in turn, can reduce the level of economic output.

The report suggests that the results for Canada are broadly in line with the international results: for each 1-percentage-point increase in the bank capital ratio, lending spreads would increase by about 14 basis points, which is very close to the international median of 15 to 16 basis

points. New liquidity requirements are also estimated to add about another 14 basis points, in total, to lending spreads. As a result, the cost of a 2-percentage-point increase in capital requirements, in conjunction with the new liquidity standards, should be an increase in lending spreads of about 42 basis points.

This would reduce the level of GDP by about 0.3 per cent relative to a baseline trend over the long run.

The transition costs of implementing the new rules would be concentrated in the first few years of implementation. The Bank's analysis indicates that, assuming a four-year transition period, a 1-percentage-point increase in capital ratios would result in the level of GDP declining by roughly 0.3 per cent at the outset, and then converging to the longer-run decline of 0.1 per cent of GDP within 10 years. The initial decline is 0.5 per cent of GDP if there is a two-year transition period. The longer the period over which the new standards are phased in, the smaller the initial drop in economic output.

With respect to potential credit rationing, the Bank's analysis indicates that tighter capital and liquidity standards are not expected to have a significant impact on the level of economic output, since a longer transition period for the implementation of these new standards would substantially mitigate credit-supply effects.

CONCLUSION

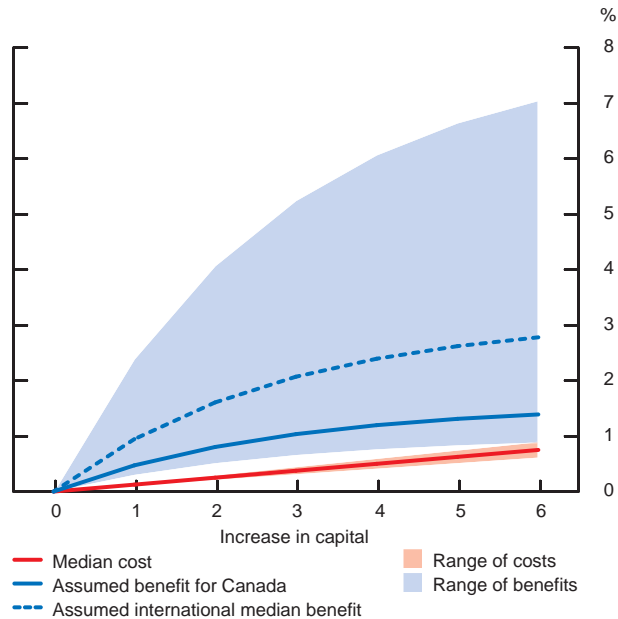
In general, this study finds that Canada should benefit significantly from the anticipated reduction in the likelihood of future financial crises as a result of strengthened capital and liquidity requirements. Meanwhile, similar to results found in other jurisdictions, the macroeconomic costs of implementing the new standards in Canada are small.

On balance, the net benefits of stronger capital and liquidity requirements are likely to be large on a net present-value basis—about 13 per cent of GDP, or \$200 billion. As well, additional benefits are expected to arise from reducing the severity of future crises, smoothing regular economic cycles, and helping to alleviate misallocations of resources in the economy.

Given the challenges associated with simulating financial systems in macroeconomic models, a significant degree of uncertainty inevitably remains. The Bank has compensated for this by using several conservative assumptions in its analysis. Nevertheless, the potential benefits of strengthening capital and liquidity standards in terms of gains to GDP are quite large. Clearly, it is in Canada's interest to improve the robustness of our banking system and to contribute to the promotion of global financial stability, thereby avoiding a recurrence of the economic turmoil recently experienced.

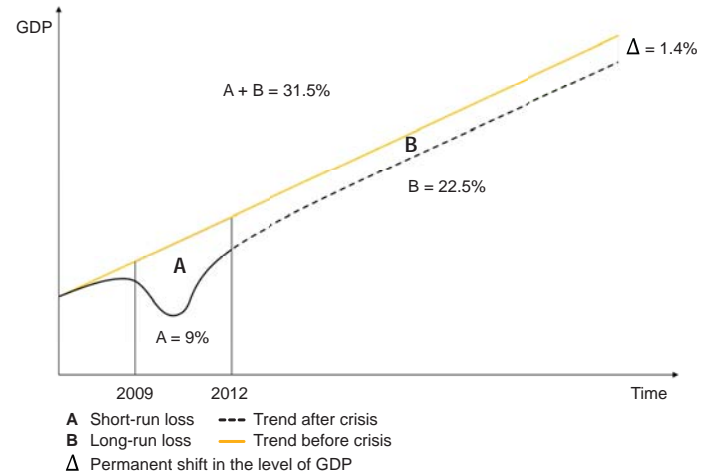
Expected longer-run benefits and costs of tighter capital and liquidity standards

In per cent of GDP



Source: Bank of Canada estimates based on LEI data

An illustration of the cumulative output loss in Canada from the financial crisis



Estimated long-run costs and benefits for Canada from stronger regulatory requirements (expressed as annual percentage impact on the level of GDP)

Increase in capital ratio (percentage points)	Long-run benefits				Long-run costs			Net long-run benefits (%)	
	Benefit of reduced probability of crisis		Benefit of reduced economic volatility ^a	Benefit of reduced misallocation of resources	Total long-run benefits (%)	Cost of capital standards (%)	Cost of liquidity standards (%)		Total long-run costs (%)
	Domestic (%)	Foreign (%)							
2	0.3	0.8	Positive but not quantified	Positive but not quantified	1.1	-0.2	-0.1	-0.3	0.8
4	0.4	1.0	Positive but not quantified	Positive but not quantified	1.4	-0.4	-0.1	-0.5	0.9
6	0.5	1.1	Positive but not quantified	Positive but not quantified	1.6	-0.6	-0.1	-0.7	0.9

a. Evidence was found that increased capital reduced economic volatility for both the international and Canadian economies, but this was not quantified in terms of GDP.
Source: Bank of Canada calculations

Summary – Present value of benefits and costs from stronger regulatory requirements

Present value of cumulative benefits and costs (as per cent of GDP)				
Increase in capital ratio (percentage points)	Long-run benefits (%)	Long-run costs (%)	Transition costs ^a (%)	Net benefits (%)
2	21.6	-6.0	-2.6	13.0
4	28.0	-10.0	-4.4	13.6
6	32.0	-14.0	-6.2	11.8

a. Transition costs represent additional costs incurred over the 10-year simulation period.
Note: A discount factor of 5 per cent was used for all present-value calculations.
Source: Bank of Canada calculations