

# Shoring Up the Foundations for a More Resilient Banking System: The Development of Basel III

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- Following the 2007–09 global financial crisis, authorities addressed key vulnerabilities in the banking system by revamping the regulatory framework, giving rise to Basel III.
- Most of the major elements of Basel III have already been implemented and have led to substantial improvement in the banking sector’s ability to withstand adverse financial conditions. In this way, it serves to enhance overall financial stability and provides a solid foundation for economic growth. At the time of writing, there are a few outstanding elements, particularly the appropriate balance between risk-weighting and minimum capital requirements.

## Introduction

In the wake of the 2007–09 global financial crisis, the G20, the Financial Stability Board and the Basel Committee on Banking Supervision (BCBS) acted swiftly to revise the existing regulatory framework. The reform agenda included an overhaul of the existing global banking regulations in the Basel II framework. There were also initiatives outside the banking sector, including improving risk mitigation strategies for shadow banking activities and increasing transparency for over-the-counter derivatives.

Regulatory reform measures were designed to ensure that banks could better withstand losses and runs on funding. These measures included provisions to help end “too big to fail.” The new banking regulation, known as Basel III, is close to being finalized. The reforms are strongly supported in Canada, where having a resilient banking sector helped it avoid some of the worst consequences of the financial crisis. The next phase of Basel III will be one of “dynamic implementation” as banking supervisors monitor for consistent implementation and unintended consequences.

This report highlights the core elements of Basel III. It also reviews the progress made to date in its implementation and the benefits for financial stability. Once a final agreement has been reached, authorities will focus on implementation of the outstanding aspects. They will also continue to evaluate the impact of the reforms to ensure reform objectives are achieved.

## Building an International Framework: Evolution of the Basel Accord

Basel III was built on a global banking regulation framework that dates back to 1988, when the BCBS created the Basel Capital Accord, now known as Basel I (Table 1). Banking activities had become increasingly global in the 1970s, yet regulation remained largely local. A series of international crises (i.e., the Latin American debt crisis and the oil price shock) in the early 1980s led to poor returns on equity, which prompted increased risk taking by banks. Differing capital standards across jurisdictions encouraged the migration of risks internationally, which in turn undermined the overall soundness of the sector.

Basel I was designed to boost bank capital and ensure a consistent definition of risks and capital measurement across jurisdictions. It prescribed standard definitions of bank capital, appropriate weights corresponding to the riskiness of various asset classes (known as risk weights) and minimum levels of capital that internationally active banks should hold. It was finalized in 1988 and implemented in Canada (and other countries) in 1992. However, over the early 1990s, there was a growing realization that Basel I was too focused on credit risk and that the existing risk categories did not reflect the full spectrum of risk taking. The relatively small number of risk categories under the framework implied that assets of varying riskiness were given the same risk weights. This simple framework gave banks incentive to shift their activities toward riskier assets within each asset class. Moreover, the framework was unable to deal

**Table 1: The evolution of the Basel framework**

	Date finalized (implementation date)	Goals	Identified shortcomings
<b>Basel I</b>	1988 (1992)	Increase capital Ensure consistent definitions of risk and capital	Not sufficiently risk sensitive
<b>Basel II</b>	2004 (2008) Implementation not completed across all jurisdictions	Increase risk sensitivity and allow use of internal models Expand coverage of risks	Inadequate loss-absorbing capital Insufficient focus on liquidity, funding risk and interconnectedness
<b>Basel III</b>	Risk-based capital—2011 (2019) Liquidity Coverage Ratio—2013 (2015) Net Stable Funding Ratio—2014 (2018) Leverage ratio—2014 (2018) Revisions to calculation of risk-weighted assets—ongoing	Increase the quantity and quality of capital Enhance risk sensitivity and comparability of risk weights Restrict the buildup of leverage Ensure resilience to short-term funding stress Promote longer-term funding structures Reduce procyclicality in bank lending Address “too big to fail” Enhance risk management and disclosure	Authorities are monitoring for unintended consequences

**Table 2: The three pillars of Basel III**

Pillar	Objective	Description
<b>Pillar 1: Minimum capital and liquidity requirements</b>	Create global requirements that ensure banks have adequate capital and liquidity to withstand losses and runs on funding	Minimum requirement for capital, liquidity and leverage  More stringent requirements for systemically important banks
<b>Pillar 2: Supervisory review process</b>	Allow supervisors to work with individual banks to assess risks not covered under Pillar 1, such as internal controls and qualitative issues	Guidelines on qualitative issues, such as corporate governance, stress testing, model validation, risk data aggregation and reporting
<b>Pillar 3: Market discipline</b>	Give sufficient information to markets to allow market prices to reflect and influence risk taking	Harmonized templates for public disclosure of key risk metrics to market participants

with the growing complexity and globalization of the financial system, particularly as banks developed their own model-based approaches to evaluating the risks of their balance sheets.<sup>1</sup>

It became clear that Basel I needed to be upgraded and, as a result, Basel II was developed. Its objective was to establish a globally consistent framework for the evaluation of risk and to ensure that the broadening set of financial activities was appropriately capitalized. To do so, it introduced three pillars (later updated for Basel III, as described in Table 2). Under Pillar 1, the minimum capital requirements were expanded to require banks to hold capital against operational risk and some elements of market risk in addition to credit risk, and the definition of credit risk was refined. For each risk type, banks had two options to calculate capital requirements. The standardized approach prescribed the risk weight used for each exposure, similar to Basel I. Basel II also allowed banks, under the oversight of regulators, to use their own risk models to produce risk weights, known as the internal models approach.<sup>2</sup> The use of supervisory-approved models was intended to provide added sensitivity to reflect differences in risks and to encourage banks to improve their own risk management.

Pillar 2 was established to allow supervisors to address risks not covered in Pillar 1 and to tailor capital requirements to individual banks. It typically covered more qualitative risk management guidelines. Finally, Pillar 3 required banks to publicly disclose key risk metrics to improve market discipline.<sup>3</sup>

Basel II was finalized in 2004, with full implementation expected by the end of 2008; Canada began implementation in 2006.

## Identifying Lessons from the Financial Crisis: An Enhanced Framework

Despite these efforts to bolster the banking system, the global financial crisis began in 2007, before many banks and jurisdictions had even fully implemented Basel II. The failure of some fully compliant institutions showed

<sup>1</sup> The Accord was refined over the early 1990s. The most important change broadened the requirements to include capitalization against market risks, including permitting banks to use internal models for the first time.

<sup>2</sup> Currently, Canadian domestic systemically important banks all use internal model approaches for credit risk and market risk.

<sup>3</sup> The Office of the Superintendent of Financial Institutions' implementation of Pillar 3 requirements under Basel II exceeded the international standard by calling for quarterly disclosures, as opposed to semi-annual.

that the framework was insufficient in several areas. These included a lack of loss-absorbing capital, little focus on liquidity and funding risk management, and too much leverage in the financial system. Moreover, banks' use of internal models to evaluate the riskiness of some of their activities gave rise to unwarranted variations across banks for similar business activities or assets. Finally, the crisis made it clear that some banks had become so important to the financial system that market participants considered them "too big to fail." This belief distorted risk management practices, increasing financial system risks.

To remedy the shortcomings of the Basel II framework identified during the crisis, the BCBS worked toward two objectives:

- reducing the likelihood that individual banks will fail when faced with adverse market conditions, and
- reducing the impact of the stress created if a bank should fail.<sup>4</sup>

To accomplish these two overriding objectives, the BCBS identified a number of goals, listed in **Table 1**.

In addition to strengthening individual banks, Basel III includes a macroprudential angle, which considers the health of the entire financial system.<sup>5</sup> Macroprudential requirements typically focus on mitigating procyclicality and contagion during financial stress and on reducing the moral hazard associated with banks considered too big to fail.

## Revising the Framework: Basel III

Basel III enhances all three pillars of Basel II in important ways.

**Increase the quantity and quality of capital:** Banks are now required to hold an increased quality and quantity of capital. The emphasis is on common equity, which absorbs losses immediately.

**Enhance sensitivity and comparability of risk weights:** Basel III includes substantial changes to the risk weighting of assets. For the standardized approach, the revisions will reduce reliance on external credit ratings and increase risk sensitivity by introducing further granularity and more stringent calibration. The internal models approach will face greater constraints on its use. These constraints include both restricting the types of risk exposures that are allowed to be modelled by banks and fixing the levels of certain parameters within banks' models.

**Restrict the buildup of leverage:** Since risk-based capital requirements can still lead to the excessive leverage seen during the crisis, a new leverage ratio complements the other capital requirements. Since 1982, Canadian banks have been subject to a leverage constraint, expressed as a limit on banks' "asset-to-capital multiple." This leverage requirement was retained even after implementation of the risk-adjusted capital measures under Basel I and Basel II, and eventually replaced by the Basel III leverage ratio.

**Ensure resilience to short-term funding stress and promote longer-term funding structures:** To strengthen banks' funding and liquidity risk management, two new liquidity standards are also incorporated into the overall framework. The Liquidity Coverage Ratio (LCR) is designed to ensure that

<sup>4</sup> A complete set of the [Basel III reform measures](#) can be found on the Bank for International Settlements website. Chouinard and Paulin (2014) review the elements of Basel III that were finalized up to 2014.

<sup>5</sup> For more information on the differences between micro- and macroprudential regulation, see Borio (2003).

banks have enough liquid assets to withstand a short period of funding stress. The Net Stable Funding Ratio (NSFR) promotes the use of longer-term funding.<sup>6</sup>

**Reduce procyclicality in bank lending:** To mitigate procyclicality, the capital and liquidity requirements incorporate “buffers.” The countercyclical capital buffer and the LCR buffer are both designed to be drawn down so that banks can maintain their critical functions during a period of stress without breaching minimum requirements.

**Address “too big to fail”:** To reduce contagion, the framework was designed to ensure that large banks with lots of connections to the rest of the financial system—global and domestic systemically important banks (SIBs)—are especially well capitalized and hold extra liquidity. To mitigate moral hazard, SIBs must hold additional loss-absorbing capital to enable an orderly resolution.

**Enhance risk management and disclosure:** These revised regulatory minimums have been complemented by more emphasis on Pillar 2 requirements to enhance overall risk management and supervision. Among other items, new guidance on corporate governance, model validation and stress-testing practices are included. Finally, Pillar 3 has been improved to ensure that disclosure by banks is meaningful to users, consistent over time and comparable across institutions and jurisdictions. Sound disclosure practices allow investors to more easily compare capital and liquidity ratios across banks and over time, providing the financial system with yet another source for assessing the soundness of financial institutions.

## Enhancing Bank Resilience: The Impact of Basel III to Date

The adherence of banks to the Basel III reforms has improved their resilience to financial stress. It is always possible, however, that some of the policy measures could have unintended consequences for the overall functioning of financial markets. To date, there is little evidence of serious unintended consequences of the regulations, although some participants have highlighted lower market liquidity as a possible effect (CGFS 2017). Ultimately, the reforms create a robust foundation so that banks can continue their business activities, including lending and making markets, in the face of stress, which reinforces the resilience of the overall financial system.

Capital and liquidity ratios have risen sharply since banks began implementing the Basel III requirements. **Chart 1** shows that the average common equity Tier 1 ratios of global banks rose from 7.7 per cent at the end of 2011 to more than 12 per cent at the end of 2016. This increase in capital has been supported by growth in retained earnings as banks returned to profitability following the crisis (BCBS 2017a). Similarly, banks’ average LCRs increased from 121 per cent in 2012 to more than 130 per cent in 2016.

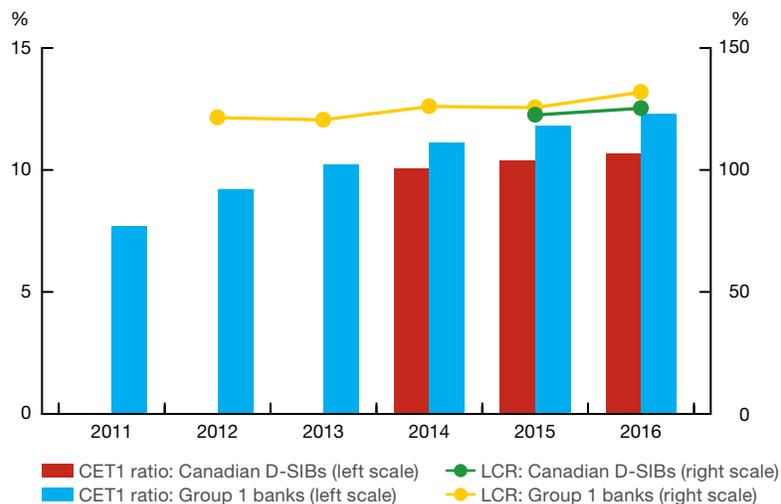
The increase in bank health has a stabilizing effect on the financial system and, ultimately, a positive impact on economic growth. Studies of both the global and the Canadian contexts have shown that significant benefits from having fewer financial crises accrue to the broader economy. In Canada, the net gain is estimated to be around 13 per cent of gross domestic product, or \$200 billion (BCBS 2010; Bank of Canada 2010). These figures could, in

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<sup>6</sup> Gomes and Wilkins (2013) provide more detail on the development of the LCR and NSFR.

**Chart 1: Basel III capital and liquidity ratios have risen sharply since 2011**

Common equity Tier 1 and liquidity coverage ratios



Note: Group 1 banks are defined as internationally active banks that have Tier 1 capital of more than 3 billion euros. Canadian domestic systemically important banks (D-SIBs) are Bank of Montreal, Canadian Imperial Bank of Commerce, National Bank, Bank of Nova Scotia, Toronto Dominion and Royal Bank of Canada.

Sources: Bank for International Settlements and regulatory returns of Canadian banks

Last observation: 2016

fact, be underestimated because they assume an increase in funding costs due to implementation. Indeed, some studies have shown that adherence to heightened regulatory requirements will lower banks' funding costs.<sup>7</sup>

In addition to reducing the probability of future crises, strengthened bank resilience will allow banks to continue to function even during stress. Recent research finds that banks that had strong capital and liquidity levels continued to lend even during the crisis.<sup>8</sup> This evidence is supported by the Canadian experience during the crisis, when the stronger performance of Canadian banks relative to some of their international peers was attributed to, among other elements, better risk management and robust funding and liquidity positions (Ratnovski and Huang 2009; Arjani and Paulin 2013).

## Finalizing the Framework: Work Still to Be Done

Despite these impressive gains, three core elements are still to be finalized. These elements aim to address the tension between the standardized approach and the internal models approach: under the standardized approach, risk weights are too rigid; under the internal models approach, risk weights are too variable (Rudin 2017). The first element is a revised standardized approach for credit risk that introduces a greater granularity to the Basel II approach.<sup>9</sup> The second includes further constraints on how internal models are used. The final element is a restriction on the benefit that using an internal model can have on the risk weightings relative to the standardized approach, known as an output floor.

<sup>7</sup> See, for example, Ingves 2015; Galiay and Martin 2015; and Schmitz, Sigmund and Valderrama 2017.

<sup>8</sup> See, for example, Ivashina and Scharfstein 2010; Cornett et al. 2011; and Gambacorta and Marquez-Ibanez 2011.

<sup>9</sup> The standardized approaches were finalized for market risk in 2016 and for operational risk in 2017.

## Reaping the Gains: Promoting Timely and Consistent Implementation

The collective effort of international authorities has already resulted in more resilient financial institutions. However, to ensure that the gains to financial stability are fully realized, standards will need to be implemented on a timely basis across jurisdictions and consistent with the rule and spirit in which they were intended.

As of September 2017, all 27 BCBS member jurisdictions have risk-based capital rules and LCR regulations in force (BCBS 2017b). Almost all members have issued final rules for countercyclical capital buffers and frameworks for domestic SIBs.

While standards have been broadly implemented on time, there have been some delays in the adoption of those that have been finalized recently.<sup>10</sup> Uneven implementation could result in regulatory fragmentation and an unlevel playing field. Authorities will now focus on “dynamic implementation,” monitoring the consistency of implementation, and will be attentive to the interactions between reforms and potential unintended consequences, particularly for financial market functioning and the conduct of monetary policy. Working together, the Financial Stability Board, the BCBS and other standard-setting bodies will assess whether the reforms meet the G20’s overall objective of a more resilient global financial system. Authorities will consider whether revisions to the framework are warranted where strong evidence of negative impacts emerges.

## Conclusion

The financial crisis revealed that global regulatory and supervisory frameworks as well as banks’ own risk-management frameworks had not kept pace with the changes in bank activities and did not protect banks sufficiently during periods of extreme stress. Globally, authorities responded swiftly to address these deficiencies, promoting the resilience of the banking system.

It has been almost 10 years since the publication of the first part of the Basel III reform package aimed at shoring up the foundations of banks’ risk management. Healthy banks contribute to a more resilient financial system and support robust economic growth, and banks’ resilience to stress has increased significantly as implementation of Basel III has progressed. Banks and the broader financial system continue to adapt to the new environment, and authorities will continue to monitor the impacts, attentive to any unintended effects that come to light.

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<sup>10</sup> More than 75 per cent of jurisdictions have delayed implementation of the standardized approach for measuring counterparty credit risk for derivatives and capital requirements for exposures to central counterparties; the target implementation deadline was January 1, 2017. Some jurisdictions have already announced delays in implementation of the NSFR and the revised market risk framework, which were due to be implemented in 2018 and 2019, respectively.

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