

Implementation of the Basel Framework: Considerations relating to LICs and LMICs¹

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Introduction

Pressing questions currently surround whether and to what extent Low Income Countries (LICs)² and Lower Middle Income Countries (LMICs)³ should implement the Basel global banking standards. These standards are comprised of the Basel Committee on Banking Supervision's (BCBS) 'Core Principles for Effective Banking Supervision' (CPEBS), the Basel I, II, 2.5 and III Accords and various supplementary publications issued from time to time. Resolving these questions is of paramount importance going forward, as the interactions of LICs and LMICs with these standards will generate profound implications for their development and effective functioning and their market participants.⁴ Research into this area is imperative not only for the sound development of LICs and LMICs, but also for the objective of establishing a coherent international system of bank supervision.

The aim of this paper is to support research endeavours into LIC and LMIC implementation of the Basel global banking standards, and, more broadly, into the economics and political economy of international financial regulation in these countries.

² As of the 2016 fiscal year, the World Bank defines LICs as those countries with a gross national income per capita of U.S.\$1,045 or less in 2014: see <http://data.worldbank.org/about/country-and-lending-groups>.

³ As of the 2016 fiscal year, the World Bank defines LMICs as those countries with a gross national income per capita of more than U.S.\$1,045 but less than U.S.\$ 4,125 in 2014: Ibid.

⁴ See, especially, Emily Jones, 'Global Banking Standards and Low Income Countries: Helping or Hindering Effective Regulation?', GEG Working Paper 2014/91, (September 2014), p. 3; Financial Stability Board (FSB), 'Identifying the Effects of Regulatory Reform on Emerging Market and Developing Economies: A Review of Potential Unintended Consequences', Report to the G20 Finance Ministers and Central Bank Governors, 19 June 2012.

Basel rules relevant to LIC and LMIC research

Overview

The Basel accords set out a series of international rules for regulating the banking industry, including standards for capital requirements, supervisory review, market discipline and liquidity requirements. This section outlines the key principles of each of the Basel accords and discusses some of the criticism it has received, with a particular focus on elements relevant to LICs and LMICs.

Basel I, issued in 1988, primarily focused on setting capital requirements for credit risks faced by banks, prescribing risk weightings to banks' assets and developing two tiers of quality (Tier 1 and 2) for capital. Under Basel I, banks are required to hold a certain amount of Tier 1 and 2 capital, measured as a proportion of their assets weighted by risk.

Following criticism, Basel I's relatively simple approach was amended by Basel II, issued in 2006. Basel II comprises three pillars: minimum capital requirements, supervisory review and market discipline. The First Pillar sets minimum capital requirements for different types of risks to which banks are exposed, including credit risk, operational risk, market risk and securitisation risk. For each risk category, Basel II lays out different methods of calculating the associated minimum capital requirements, which can be broadly categorised as Standardised approaches, according to which minimum capital requirements are calculated based on a fixed methodology, and Internal Ratings Based (IRB) approaches, according to which banks use their own internal estimates and models to determine minimum capital requirements.

A key point of contention with regard to the First Pillar of Basel II that is particularly relevant for LICs and LMICs is the emphasis on IRB approaches, which can result in banks using flawed methodologies for calculating minimum capital requirements. This can be particularly problematic for LICs and LMICs due to the sophisticated regulatory oversight required to ensure the correct use of IRB approaches. Similarly, the reliance on external ratings by credit rating agencies in certain approaches for calculating capital requirements can be ill-suited to LICs and LMICs due to their low levels of penetration by credit rating agencies. Further problems relate to the risk weightings, which some consider too low, and the potential for pro-cyclical effects.

The Second Pillar establishes a supervisory review process intended to promote an active dialogue between banks and their supervisors to reduce risk or restore capital where necessary. As part of Pillar II, Basel II sets out responsibilities for banks and supervisors, as well as principles for early intervention by supervisors and 'specific issues' such as interest rate risk, credit concentration risk, credit risk, operational risk and securitisations which banks should monitor.

With regard to LICs and LMICs, the Second Pillar can be seen as an implementation challenge for national supervisors, who may face a significant resource gap compared to banks. Particular supervisory attention may need to be paid to the 'specific issues', due to the higher levels of volatility and illiquidity in LIC and LMIC financial markets.

The Third Pillar is intended to enhance market discipline through the introduction of disclosure and reporting requirements for aspects such as banks' capital, scope of capital application, risk exposures, risk assessment processes and capital adequacy characteristics. A criticism that has been levelled against the Third Pillar is that banks in LICs and LMICs may face significant compliance costs in implementing its requirements, as these may not overlap with disclosure obligations under other frameworks.

Basel III was established in order to better protect against risks brought to light by the financial crisis. In particular, Basel III introduced a new definition of capital, extended risk coverage and set out Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) requirements aimed at improving liquidity management in the short- and long-term. It also developed a capital conservation buffer (CCB), which imposes distribution constraints on banks if their capital levels fall below a specified range, and a countercyclical capital buffer (CCCB), under which national regulators may impose additional capital requirements in order to prevent excessive credit growth in the system. A non-risk based leverage ratio (LR) was also introduced to limit the build-up of leverage in the banking sector. Finally, Basel III established categories of Global-Systemically Important Banks (GSIBs) and Domestic-Systemically Important Banks (D-SIBs), for which additional requirements may be applicable.

With regards to LICs and LMICs, there are concerns that banks operating in LICs and LMICs will face higher operational costs imposed by these additional requirements without realising the intended benefits from the implementation of Basel III. The comparatively high resource and capacity constraints experienced by LIC and LMIC economies and their national regulators plays a significant role in this.

Basel I – A Brief Recap

The BCBS issued the Basel Capital Accord (Basel I) in 1988 as its initial international framework promoting bank capital adequacy standards.⁵ This Accord principally focused on addressing credit risks faced by banks using a relatively simple methodology.⁶ Credit risks broadly comprised the risk of a bank’s borrower/counterparty failing to meet its obligations in accordance with agreed terms.⁷

To summarise, the assets on a bank’s balance sheet are categorised into one of five groups and assigned prescribed risk weightings reflecting that category’s perceived loss-absorbing or creditor-protection properties. These are illustrated in the table below⁸:

Risk weighting	Asset category
0%	Cash (may include gold bullion at national discretion); Claims on central governments/central banks denominated in national currency and funded in that currency; Other claims on OECD central governments/central banks; and Claims collateralised by cash of OECD central-government securities/guaranteed by OECD central governments.
0, 10, 20 or 50% (at national discretion)	Claims on domestic public-sector entities, excluding central government, and loans guaranteed by such entities.
20%	Claims on multilateral development banks (International Bank for Reconstruction and Development, Inter-American Development Bank, Asian Development Bank, African Development Bank, European Investment Bank) and claims guaranteed by, or collateralised by securities issued by such banks Claims on banks incorporated in the OECD and loans guaranteed by OECD incorporated banks; Claims on banks incorporated in countries outside the OECD with a residual

⁵ BCBS, ‘International Convergence of Capital Measurement and Capital Standards’, (July 1988) (‘Basel I’).

⁶ See Basel I, [31], although the BCBS recognise that banks face a variety of different risks, it notes that “[f]or most banks the major risk is credit risk”. National supervisors may, however, address other risks that banks in their jurisdictions may face, at their discretion.

Basel I’s simplified asset categorisation and risk weighting approach is outlined in greater detail in the Basel II section entitled the “Simplified Standardised Approach” below.

⁷ Bank for International Settlements, ‘Principles for the Management of Credit Risk’, (July 1999), [2].

⁸ Basel I, Annex 2.

	maturity of up to one year and loans with a residual maturity of up to one year guaranteed by banks incorporated in countries outside the OECD Claims on non-domestic OECD public-sector entities, excluding central government, and loans guaranteed by such entities; and Cash items in process of collection.
50%	Loans fully secured by mortgage on residential property that is or will be occupied by the borrower or that is rented.
100%	Claims on the private sector; Claims on banks incorporated in countries outside the OECD with a residual maturity of up to one year and loans with a residual maturity of up to one year guaranteed by banks incorporated in countries outside the OECD; Claims on non-domestic OECD public-sector entities, excluding central government, and loans guaranteed by such entities; Cash items in process of collection; Claims on banks incorporated outside the OECD with a residual maturity of over one year; Claims on central governments outside the OECD (unless denominated in national currency - and funded in that currency - see above); Claims on commercial companies owned by the public sector; Premises, plant and equipment and other fixed assets; Real estate and other investments (including non-consolidated investment participations in other companies); and Capital instruments issued by other banks (unless deducted from capital); and All other assets.

Basel I also accounts (to a degree) for the credit risk on banks' off-balance-sheet exposures by applying 'credit conversion factors' to different types of off-balance-sheet instruments or transactions.⁹

Adding up the product of each categorised asset multiplied by its corresponding risk weighting provides a bank's total 'risk-weighted assets' (RWA).

In addition to introducing the above concepts, Basel I inaugurated internationally agreed definitions relating to banks' capital quality.¹⁰ The defined constituents of a bank's capital base, and each constituent's quality, are important concepts throughout the Basel framework. The key idea is that a bank's capital should absorb any incurred losses without its senior creditors being affected.¹¹ Therefore, banks with riskier portfolios of assets will be required to hold more capital. In Basel I:

- **Tier 1 capital** is comprised of a bank's equity capital¹² and disclosed reserves¹³. A bank's goodwill may be deducted from Tier 1 capital.¹⁴

⁹ Basel I, Annex 3.

¹⁰ BIS, 'History of the Basel Committee and its Membership', www.bis.org/bcbs/history.htm (updated 28 October 2014).

¹¹ See BCBS, 'Markets for Bank Subordinated Debt and Equity in Basel Committee Member Countries', Working Paper No. 12, (August 2003), p. 5.

¹² Basel I, [12], Annex 1. This consists of permanent shareholders' equity (issued and fully paid-up ordinary shares/common stock and non-cumulative perpetual preference shares). The latter is a type of share whose payment takes priority over ordinary shares, has no maturity (expiry) date and is not necessarily dividend paying.

¹³ Basel I, [14], Annex 1. This refers to reserves created from a bank's after-tax retained earnings or other surplus (e.g. share premiums, retained profit, etc.) and published in its accounts. Where a bank consolidates its accounts, this includes any minority interests in the equity of any of its subsidiaries which are not 100% owned.

¹⁴ Basel I, [24]. Goodwill is an intangible asset determined by factors affecting a bank's value (e.g. its brand name, customer base, etc.).

- **Tier 2 capital** is comprised of a bank's undisclosed reserves¹⁵, asset revaluation reserves¹⁶, general provisions/general loan-loss reserves¹⁷, hybrid (debt/equity) capital instruments¹⁸ and subordinated debt instruments¹⁹, with this 'supplementary' capital being subject to limits and restrictions reflecting its ranking below a bank's depositors and senior creditors. A bank's investments in unconsolidated banking and financial subsidiaries or in the capital of other banks and financial institutions (at the discretion of national regulators) may be deducted from total capital.²⁰

Having established the above, banks are required to maintain the following minimum capital levels under Basel I:²¹

1. Tier 1 and Tier 2 capital must be at least 8% of RWA at all times; and
2. Tier 1 capital must be at least 4% of RWA at all times.²²

Since its publication, Basel I has attracted significant criticism regarding its scope, application and efficacy,²³ and soon became outmoded by advancements made by banks with regards to product innovation, risk taking and risk modeling. As such, a lengthy review process commenced, rife with political and lobbying efforts,²⁴ which ultimately culminated in Basel II, another controversial accord.²⁵

Basel II

Basel I was subsequently amended in part by the Market Risk Amendment (MRA) in 1996²⁶ and largely by Basel II issued in 2006.²⁷ The BCBS approved Basel II to "strengthen the soundness and stability of the international banking system" without fostering significant

¹⁵ Basel I, [15], Annex 1. Where permitted by national regulators, this refers to reserves consisting of that part of a bank's after-tax surplus of retained profits that can be maintained as undisclosed reserves (i.e. not published in its accounts).

¹⁶ Basel I, [16], Annex 1. Where permitted by national regulators, this refers to an increase in an asset's value brought to account from a re-valuation to reflect its current value.

¹⁷ Basel I, [18-20], Annex 1. This refers to provisions of capital or loan-loss reserves created and held against expected future losses which are as yet uncertain and unrealised.

¹⁸ Basel I, [22], Annex 1. This refers to instruments with a combination of debt and equity characteristics (e.g. some preference shares and instruments that are mandatorily convertible to equity upon the occurrence of a pre-specified event).

¹⁹ Basel I, [22], Annex 1. This refers to unsecured debt capital instruments with fixed over five year terms and non-perpetual preference shares.

²⁰ Basel I, [24], Annex 1.

²¹ Basel III, [50].

²² Basel I, [44].

²³ A common criticism is that Basel I's simplicity permitted extensive regulatory arbitrage by banks in attempts to circumvent the rules: see, e.g., Adrian Blundell-Wignall and Paul Atkinson, 'Thinking Beyond Basel III: Necessary Solutions for Capital and Liquidity', OECD Journal: Financial Market Trends, (2010, vol. 1), p. 3 (noting that "Basel I gave banks the ability to control the amount of capital they required by shifting between on-balance sheet assets with different weights, and by securitising assets and shifting them off balance sheet...Banks quickly accumulated capital well in excess of the regulatory minimum and capital requirements, which, in effect, had no constraining impact on bank risk taking").

²⁴ Kevin Dowd et al, 'Capital Inadequacies: The Dismal Failure of the Basel Regime of Bank Capital Regulation', Policy Analysis (no. 681, 29 July 2011), p. 9 (noting that Basel II was introduced "[a]fter a very long and highly politicised process—and a lot of industry lobbying").

²⁵ See, e.g. Daniel Tarullo, 'Banking on Basel: The Future of International Financial Regulation', (August 2008), pp. 87 – 91.

²⁶ BCBS, 'Amendment to the Capital Accord to Incorporate Market Risks', (November 2005) ('MRA').

²⁷ BCBS, 'International Convergence of Capital Measurement and Capital Standards: A Revised Framework', (June 2006) ('Basel II').

competitive inequality amongst banks.²⁸ It was also intended to encourage the banking industry to adopt stronger risk management practices.²⁹ However, particularly within the context of LICs and LMICs contemplating Basel implementation, it is worth noting that both the MRA and Basel II have been criticised for “dramatically increas[ing] the complexity of the capital framework” and exacerbating many of the risks leading up to the latest financial crisis.³⁰

Basel II applies to any holding company that is the parent entity within a banking group (on a fully consolidated basis),³¹ to internationally active banks at every tier of the banking group and to standalone banks.³² This scope is intended to encourage national supervisors to consolidate from the holding company (if any) and down through the banking group structure, rather than merely consolidating from a banking entity within a group structure as the starting point.³³

Principally, Basel II expanded on Basel I through its three pillar approach:

- **The First Pillar** revises the previous minimum capital requirements, attempting to more closely align banks’ minimum capital requirements to their risks of actual economic loss by establishing more sensitive calculation methodologies.
- **The Second Pillar** introduces a supervisory review process, building on the CPEBS. This emphasises the effective supervision of banks by their national regulators, particularly with regard to the quality of banks’ internal risk assessments and associated minimum capital requirement levels. An important function of the national supervisors’ role under this Pillar is to evaluate whether banks should hold higher levels of capital than those prescribed under Pillar 1 given their particular activities and risk profiles, thereby reinforcing the objectives of Pillar 1.
- **The Third Pillar** introduces a market discipline initiative, also building on the CPEBS. This increases banks’ disclosure obligations in the interests of promoting transparency regarding their financial condition and risk management processes.

National regulators may adopt more stringent standards than the minimum capital standards imposed by the Basel capital framework.³⁴

The components of each Pillar that may be particularly relevant to LIC and LMIC research are now considered.

The First Pillar – Minimum Capital Requirements

Contrary to Basel I, the BCBS in Basel II attempts to address wider risks relevant to

²⁸ Basel II, [4].

²⁹ Ibid.

³⁰ Andrew Bailey, ‘The Capital Adequacy of Banks: Today’s Issues and What We Have Learned from the Past’, Speech by the Deputy Governor, Prudential Regulation and Chief Executive Officer, Prudential Regulation Authority, at Bloomberg, London (10 July 2014), p 5.

³¹ Basel II, [21].

³² Basel II, [22].

³³ Andrew Powell, The World Bank, ‘Basel II and Developing Countries: Sailing through the Sea of Standards’, (September 2004), p. 10. This may, however, present challenges for those LMICs and LICs who have not adopted consolidated supervision in their jurisdictions: Ibid.

³⁴ Basel II, [34]. For instance, Canada has imposed more stringent standards than Basel II in places, with the IMF noting in 2009 that “Canadian capital requirements are significantly more stringent than Basel minima (national targets of 7 percent for tier 1 capital and 10 percent for total capital, versus 4 and 8 percent prescribed by the Basel Accord): IMF, ‘Staff Country Report, Canada: Selected Issues’, (August 2009), [7]

determining banks' capital requirements beyond primarily credit risk, focusing on managing the following four risks:

Risk type	Refers to the risk of loss arising from:
Credit risk	The potential for a bank borrower/counterparty failing to meet its obligations in accordance with agreed terms. ³⁵
Operational risk	Inadequate/failed internal processes, people and systems or from external events. Includes legal risk, but excludes strategic and reputational risk. ³⁶
Market risk	On and off-balance sheet positions resulting from movements in market prices. ³⁷
Securitisation risk	Exposure to securitisation positions. ³⁸

The First Pillar stipulates minimum capital requirements with respect to each of these four risks. Taking each in turn:

Credit Risk

As the BCBS initially recognised, credit risk is the primary risk affecting the majority of banks during the normal course of their lending and underwriting activities.³⁹ The First Pillar offers four methodologies for banks to select from to calculate their capital requirements with respect to credit risk, which fall under two broad types.⁴⁰

- **Standardised approaches:** credit risk is measured by risk weighting banking book exposures. One of the Standardised methodologies supports this by relying on external credit ratings from eligible credit assessment institutions (ECAIs) such as Standard & Poor's, Moody's or Fitch's.
- **Internal ratings based approaches:** banks use their own internal rating systems to measure credit risk, subject to obtaining prior approval from their national supervisor.

Standardised Approaches

Banks may adopt the Simplified Standardised Approach (SSA) or Standardised Approach (SA)

1. Simplified Standardised Approach

The SSA is largely based on Basel I's original methodology as summarised above. Each asset on a bank's balance sheet is designated a category and assigned a corresponding risk weighting reflecting its perceived loss-absorbing or creditor-protection properties. Summing the product of each asset with its risk weighting determines a bank's total RWA. Total RWA is then multiplied by 8% to determine the bank's minimum capital requirement for credit risk. For illustration, the below table summarises the SSA's categories and risk weightings:⁴¹

Claims on	Risk-weighting method
Sovereigns; central banks	Risk-weighted on the basis of consensus country risk scores of export credit agencies (ECAs) participating in the "Arrangement on Officially Supported Export

³⁵ BIS, 'Principles for the Management of Credit Risk' , (July 1999), [2].

³⁶ Basel II, [644].

³⁷ MRA, [1].

³⁸ Basel II, [560].

³⁹ Andrew Yeh et al, 'Basel II: A new capital framework', Reserve Bank of New Zealand Bulletin, (Vol 60, No. 3, September 2005), p. 7.

⁴⁰ Basel II, Paragraph 50.

⁴¹ Basel II, Annex 9.

Credits”, which establishes eight risk score categories associated with minimum export insurance premiums.⁴² Each ECA risk score corresponds to a specific risk weighting:

ECA risk score	0-1	2	3	4-6	7
Risk weights	0%	20%	50%	100%	150%

National supervisor may grant a lower risk weighting for exposures to sovereign (or central bank) of incorporation denominated in domestic currency and funded in that currency. Other national supervisors may then also permit their banks to apply the same risk weighting to domestic currency exposures to that sovereign (or central bank) funded in that currency (preferential treatment).

Other official entities

0% risk weighting for Bank for International Settlements, International Monetary Fund, European Central Bank and the European Community (IIs)

100% risk weighting for Multilateral Development Banks (MDBs), except the following are eligible for 0% risk weighting: World Bank Group (comprised of the International Bank for Reconstruction and Development and the International Finance Corporation), Asian Development Bank, African Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank, European Investment Bank, European Investment Fund, Nordic Investment Bank, Caribbean Development Bank, Islamic Development Bank, and Council of Europe Development Bank.

Domestic public sector entities (PSEs) attract a risk weighting according to the risk weight framework for claims on banks of that country. National supervisors may treat such claims the same as claims on the sovereign. Other national supervisors may then allow their banks to risk weight claims on such PSEs in the same manner.

Banks

Risk weighting based on the weight of the country the other bank is incorporated in, applying the ECA consensus country risk classifications above:

ECA risk score	0-1	2	3	4-6	7
Risk weights	20%	50%	100%	100%	150%

If national supervisor applies the preferential treatment for claims on the sovereign (above), it may assign a risk weighting one category less favourable than that assigned to claims on the sovereign, subject to a 20% floor, to claims on banks of original maturity 3 months or less denominated and funded in the domestic currency.

Securities firms

Same as treatment for corporates below, however, may be treated as claims on banks provided such firms are subject to supervisory and regulatory arrangements comparable to those under the Basel framework (i.e. risk-based capital requirements, etc.)

Corporates

100% risk weighting for corporates (including claims on insurance companies).

Regulatory retail portfolios

Exposures included in regulatory retail portfolios⁴³ may be risk weighted at 75%, unless relating to past due loans (below).

⁴² Basel II, Annex 9. These risk scores are available on the OECD’s website.

⁴³ Retail claims for regulatory capital purposes and included in a regulatory retail portfolio must satisfy the following criteria: (i) *Orientation*: exposure is to individual person(s) or a small business; (ii) *Product*: exposure form is revolving credit or line of credit (including credit cards and overdrafts), personal term loan or lease (e.g. instalment loans, auto loans and leases, student and educational loans, personal finance), small business facility or commitment. Excludes securities (such as bonds and equities) whether listed or not and mortgage loans qualifying for treatment as claims secured by residential property above); (iii) *Granularity*: national supervisor is satisfied that the regulatory retail portfolio is sufficiently diversified, warranting the 75% risk weighting; and (iv) *Low value of individual exposures*: the maximum aggregated retail exposure to one counterparty cannot exceed €1 million.

	National supervisor may require a higher risk weighting, especially if considered too low based on default experience for such exposures in its jurisdiction.
Secured by residential property	<p>Lendings fully secured by mortgages on residential property that is or will be occupied by the borrower, or is rented, attract a 35% risk weighting.</p> <p>National supervisor may require a higher risk weighting, especially if, considering national arrangements for the provision of housing finance, this weighting is not applied restrictively for residential purposes and in accordance with strict prudential criteria, or considering the default experience for such exposures in its jurisdiction.</p>
Secured by commercial real estate	Mortgages on commercial real estate attract a 100% risk weighting.
Past due loans	<p>Unsecured portions of any loan (except qualifying residential mortgage loans) past due for > 90 days, net of specific provisions (including partial write-offs) attract the following risk weightings:</p> <ul style="list-style-type: none"> • 150% when provisions are < 20% of the loan's outstanding amount; • 100% when provisions are not < 20% of the loan's outstanding amount; • 100% when provisions are not < 50% of the loan's outstanding amount, but with supervisory discretion to reduce the risk weighting to 50%. <p>100% risk weighting for past due loans fully secured by collateral when provisions reach 15% of the loan's outstanding amount. 100% risk weighting for qualifying residential mortgage loans past due for > 90 days net of provisions. For such past due loans with provisions not < 20% of their outstanding amount, national supervisor may reduce risk weighting on the loan remainder to 50%.</p> <p>National supervisor may permit banks to treat non-past due loans extended to counterparties subject to a 150% risk weighting the same as past due loans described above.</p>
Higher-risk categories	National supervisor may apply a 150% or higher risk weighting reflecting higher risks associated with some other assets, e.g. venture capital and private equity investments.
Other assets	100% risk weighting for other assets (except securitisation, investments in equity or regulatory capital instruments issued by banks or securities firms deducted from the capital base, cash items in process of collection, and gold bullion at the national supervisor's discretion).
Off-balance sheet items	<p>Converted into credit exposure equivalents via credit conversion factors (CCFs):</p> <ul style="list-style-type: none"> • 0% CCF for commitments cancellable by the bank • 20% CCF for commitments with original maturity up to one year • 50% CCF for commitments with original maturity > one year <ul style="list-style-type: none"> • 100% CCF for banks' securities lent or posted as collateral • 20% CCF for short-term self-liquidating trade letters of credit arising from the movement of goods <p>CCFs not specified above remain as defined in Basel I.</p>

2. Standardised Approach

The SA provides a more granular methodology than the SSA by introducing additional risk weighting categories and gradations for measuring credit risk. In particular, it attempts to augment the risk sensitivity of the capital requirement calculation by facilitating the use of credit risk assessments from Credit Ratings Agencies or ECAs. As such entities allow for ratings of individual asset classes to be considered, this enables some differentiation in credit

riskiness both within and between different asset classes.⁴⁴ For illustration, the table below summarises the SA’s categories and risk weightings:

Claims on	Risk-weighting method						
Sovereigns; central banks	The following risk weights apply according to their rating status:						
	Credit assessment	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
	Risk weights	0%	20%	50%	100%	150%	100%
For risk weighting claims on sovereigns, national supervisor may recognise the country risk scores assigned by ECAs. To qualify, an ECA must publish its risk scores and subscribe to the OECD agreed methodology. Banks may choose to use the risk scores published by individual ECAs that are recognised by their supervisor, or the consensus risk scores of ECAs participating in the “Arrangement on Officially Supported Export Credits”. ECA risk scores and their corresponding risk weightings are outlined per SSA above. ⁴⁵ Preferential treatment applies per SSA above. ⁴⁶							
Other official entities	0% risk weightings for same IIs in SSA. ⁴⁷						
	0% risk weightings for highly rated MDBs including those listed in SSA, as well as MDBs fulfilling certain criteria (relating to issuer rating, shareholder structure and support, capital and liquidity levels, strict statutory lending requirements and conservative financial policies). ⁴⁸ Otherwise, risk weighting generally based on external credit assessments per option 2 for claims on banks (with no preferential treatment for short-term claims). ⁴⁹						
	Domestic PSEs risk weighted at national discretion according to option 1 or 2 for claims on banks (with no preferential treatment if option 2 is used). ⁵⁰ Preferential treatment applies per SSA above. ⁵¹						
Banks; securities firms	National supervisor applies one of two options to all banks in their jurisdiction. ⁵²						
	Claims on unrated banks cannot receive lower risk weighting than that applied to claims on its sovereign of incorporation. ⁵³						
	Option 1: all banks incorporated in a given country are assigned a risk weighting one category less favourable than that assigned to claims on the sovereign of that country (however, if the sovereign is rated BB+ to B- or is unrated, the risk weight will be capped at 100%). ⁵⁴						
	Credit assessment of sovereign	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk weights	20%	50%	100%	100%	150%	100%	
Option 2: the risk weighting is based on the external credit assessment of the bank itself (with claims on unrated banks being risk-weighted at 50%). ⁵⁵							

⁴⁴ For instance, assets in the same class that have been assigned different credit ratings should attract different corresponding risk weightings based on their assessments. This theoretically connects capital with risk more sensitively. See Powell, above n. 30, p. 18.

⁴⁵ Basel II, [55].

⁴⁶ Basel II, [54].

⁴⁷ Basel II, [56].

⁴⁸ Basel II, [59].

⁴⁹ Ibid.

⁵⁰ Basel II, [57].

⁵¹ Basel II, [58].

⁵² Basel II, [60].

⁵³ Ibid.

⁵⁴ Basel II, [61].

⁵⁵ Basel II, [62]. In the Standardised Approaches, it is noticeable that the BCBS often assign lower risk weightings to ‘unrated’ banks and corporations than those with ratings below BB+ to B-, for instance. A common criticism of this approach is that this undermines incentives for a weak entity to

	Credit assessment of banks	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
	Risk weights	20%	50%	50%	100%	150%	50%
	Risk weights for short-term claims (original maturity is 3 months or less)	20%	20%	20%	50%	150%	20%
	<p>In Option 2, a preferential risk weight one category more favourable may be applied to claims with an original maturity of three months or less, subject to a floor of 20% (available to both rated and unrated banks, but not banks risk weighted at 150%).⁵⁶</p> <p>In Option 1 and 2: If national supervisor applies the preferential treatment for claims on the sovereign (above), it may assign under both options 1 and 2 a risk weighting one category less favourable than that assigned to claims on the sovereign, subject to a 20% floor, to claims on banks of original maturity of 3 months or less denominated and funded in the domestic currency.⁵⁷</p>						
Securities firms	Same as SSA. ⁶⁴						
Corporates	The following risk weights apply (including claims on insurance companies) according to their rating status: ⁵⁸						
	Credit assessment	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated	
	Risk weights	20%	50%	100%	150%	100%	
	<p>National supervisor may increase the risk weighting for unrated claims considering the default experience in its jurisdiction or considering the credit quality of corporate claims held by individual banks.⁵⁹</p> <p>National supervisor may permit banks to risk weight all corporate claims at 100% without regard to external ratings. If done, supervisor must ensure banks apply a single consistent approach. Banks should obtain supervisory approval before applying a 100% risk weighting.</p> <p>No claim on an unrated corporate can have a risk weight preferential to that assigned to its sovereign of incorporation.</p>						
Regulatory retail portfolios	Same as SSA. ⁶⁰						
Secured by residential property	Same as SSA. ⁶¹						
Secured by commercial	Same as SSA, however, lower risk weighting is possible in exceptional circumstances for well-developed and long-established markets, mortgages on						

obtain a rating if it will likely be below BB+ to B-. As a counterargument that may explain the BCBS' approach, it has been noted that "[national] supervisors are expected to be aware of the quality of loan portfolios and this may mean adding to minimum required capital generated by [the First Pillar]. So weak unrated entities should not benefit if supervisors and banks are doing their job, and high quality entities should not be hurt simply because they don't have a rating... In addition, the various [Quantitative Impact Study] exercises have demonstrated that only a small portion of bank exposures are actually rated and to substantially change current risk weights would have an undesired impact on the overall capital levels": Julie Dickson, 'The Use of External Credit Assessment Institutions (ECAI) Policy Options', Speech by the Assistant Superintendent, Regulation Sector Office of the Superintendent of Financial Institutions at the Regional Conference Public Sector – Private Sector, Washington, (30 January 2004).

⁵⁶ Ibid.

⁵⁷ Basel II, [64].

⁵⁸ Basel II, [66].

⁵⁹ Basel II, [67].

⁶⁰ Basel II, [69-71].

⁶¹ Basel II, [72-73].

real estate	office and/or multi-purpose commercial premises and/or multi-tenanted commercial premises for the tranche of a loan that is < the lower of 50% of the market value or 60% of the mortgage lending value of the property securing the loan. ⁶²
Past due loans	Same as SSA. ⁶³
Higher-risk categories	Same as SSA, except that the following claims attract a risk weighing of 150% or higher: <ul style="list-style-type: none"> • on sovereigns, PSEs, banks, and securities firms rated below B- • on corporates rated below BB- • on past due loans • on securitisation tranches rated between BB+ and BB- (attract a 350% risk weighting).⁶⁴
Other assets	Same as SSA. ⁶⁵
Off-balance sheet items	Same as SSA. ⁶⁶

Other notable mechanics in the SA relevant to LIC and LMIC market participants are:

- **Eligible ECAI ratings:** National supervisors are responsible for determining whether an ECAI satisfies Basel II's 6 qualification criteria of (i) objectivity, (ii) independence, (iii) transparency, (iv) disclosure, (v) resources and (vi) credibility.⁶⁷
- **Mapping process:** National supervisors are responsible for assigning eligible ECAs' assessments to the risk weightings available under the SA (i.e. deciding which assessment categories correspond to which risk weights). This process is known as 'mapping' agency scores.⁶⁸
- **Use of ratings:** Banks must use the chosen ECAs and their ratings consistently for each type of claim, for both risk weighting and risk management purposes.⁶⁹ They cannot 'cherry-pick' assessments provided by different ECAs,⁷⁰ and must disclose the ECAs they use for risk weighting their assets by type of claims, the risk weights associated with the particular rating grades as determined by supervisors through the mapping process as well as total RWA for each risk weighting based on the assessments of each ECAI.⁷¹
- **Credit risk mitigation:** The BCBS recognised that banks adopt numerous other techniques to mitigate their credit risk exposures (such as collateralisation and priority claims, third party guarantees, netting exposures or hedging with credit derivatives).⁷² Basel II allows such techniques to be considered as 'Credit Risk Mitigation' and recognised for regulatory capital purposes (i.e. to obtain capital relief), provided they meet certain criteria for legal certainty.⁷³ Legal certainty under the SA involves meeting

⁶² Basel II, [74].

⁶³ Basel II [75-78].

⁶⁴ Basel II, [79].

⁶⁵ Basel II [81].

⁶⁶ Basel II, [82-89].

⁶⁷ Basel II, [90-91]. By way of illustration, the European Central Bank has recognised four main ECAs: FitchRatings, Standard & Poor's Ratings Services, Moody's Investors Service and DBRS: see <https://www.ecb.europa.eu/paym/coll/risk/ecaf/html/index.en.html>. At present it can be difficult to determine recognised ECAs in LICs and LMICs due to a scarcity of readily available public information.

⁶⁸ Basel II, [92].

⁶⁹ Basel II, [94].

⁷⁰ Ibid.

⁷¹ Basel II, [95].

⁷² Basel II, [109].

⁷³ Basel II, [110].

minimum standards for legal documentation⁷⁴ and valid enforceability and legal review conditions, as appropriate.⁷⁵ Certain other minimum standards must be satisfied before capital relief is granted for collateralised transactions, on-balance sheet netting, guarantees and credit derivatives.

Internal Ratings Based (IRB) Approaches

The First Pillar's alternative methodologies for calculating capital requirements for credit risk are the IRB approaches. These differ from the Standardised Approaches by permitting banks to rely on their own internal estimates of (some) risk components and estimates provided by their national supervisor in determining the capital requirement for a given credit risk exposure.⁷⁶ Banks must receive approval from their national supervisor to use the IRB approaches, and fulfill certain minimum conditions and disclosure requirements.

Some rationales proffered for the IRB approaches are that capital requirements based on internal estimates are more sensitive and tailored to the credit risks in banks' asset portfolios, and these approaches encourage banks to improve their risk management measures to control for credit risk and minimise their regulatory capital.⁷⁷

The IRB approaches are based on measures of expected losses (EL) and unexpected losses (UL).⁷⁸ Banks obviously cannot know with certainty ex ante the losses they will suffer in any particular year; however, they can forecast the losses they expect to incur to some extent using statistical measures and modeling.⁷⁹ This gives us the following two concepts:

- **EL** refers to “normal” losses that banks expect to incur in conducting their business (i.e. EL are the average level of credit losses that banks can reasonably expect to experience). As EL can be estimated, banks can manage such losses by factoring them into the pricing of their credit products, provisioning and write-offs.⁸⁰
- **UL** refers to non-EL losses (i.e. credit losses above the average reasonably foreseeable level). Banks know that they will experience such severe losses from time to time, but cannot know in advance their intensity, duration or timing.⁸¹ Typically, the market will not support prices sufficient to cover all of a bank's UL, meaning that banks cannot fully account for UL through the pricing of their credit products, provisions or write-offs. Recognising this, the Basel framework requires banks to hold sufficient capital to cover UL and avoid insolvency. Under Basel II, banks must hold enough capital to meet UL with a probability of 0.999 over one year. Beyond this minimum required level, the amount of capital a bank will actually hold depends on its internal risk appetite and market expectations.

Under the IRB approaches, banks must categorise their banking book exposures into broad classes of assets that have different corresponding risk characteristics. The classes of assets are (a) corporate (with five sub-classes of specialised lending⁸² separately identified), (b)

⁷⁴ Basel II, [117].

⁷⁵ Basel II, [118].

⁷⁶ Basel II, [211].

⁷⁷ See BCBS, 'An Explanatory Note on the Basel II IRB Risk Weight Functions', (July 2005). For criticism of the IRB approaches, see e.g. Kevin Dowd et al, above n. 22.

⁷⁸ Basel II, [212].

⁷⁹ BCBS, 'An Explanatory Note on the Basel II IRB Risk Weight Functions', (July 2005), p. 2.

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² Specialised lending refers to lending with the following characteristics, either in legal form or economic substance: (i) exposure is typically to an entity (often a special purpose entity (SPE)) created specifically to finance and/or operate physical assets; (ii) the borrowing entity has little or no

sovereign, (c) bank, (d) retail (with three sub-classes separately identified), and (e) equity.⁸³ Additionally, within the corporate and retail asset classes, a distinct treatment for eligible purchased receivables may also apply provided certain conditions are met.⁸⁴ For illustration, the IRB approaches' asset classes are summarised in the table below:

Asset class	Explanation
Corporate	<p>In general are debt obligations of a corporation, partnership, or proprietorship.⁸⁵ Basel II also identifies five corporate asset sub-classes for specialised lending:</p> <p>(1) Project finance: funding where the lender looks mainly to revenues generated by a single project, both as the source of repayment and as security for the exposure (e.g. (re-)financing large, complex and expensive new/existing installations including power plants, mines, transportation or telecommunications infrastructure).</p> <p>(2) Object finance: funding the acquisition of physical assets (e.g. ships, aircraft, satellites) where repayment of the exposure depends on the cash flows generated by the specific assets that have been financed and pledged or assigned to the lender.</p> <p>(3) Commodities finance: structured short-term lending to finance reserves, inventories or receivables of exchange-traded commodities (e.g. crude oil, metals, crops), where the exposure is repaid from the proceeds of the sale of the commodity and the borrower has no independent capacity to repay the exposure.</p> <p>(4) Income-producing real estate: funding real estate (e.g. office buildings to let, retail space, multifamily residential buildings, industrial or warehouse space and hotels) where repayment and recovery prospects on the exposure depend primarily on the cash flows generated by the asset.</p> <p>(5) High-volatility commercial real estate lending: financing commercial real estate that exhibits higher loss rate volatility compared to other types of specialised lending (e.g. commercial real estate exposures secured by properties of types categorised by the national supervisor as sharing higher volatilities in portfolio default rates)</p>
Sovereign	All exposures to counterparties treated as sovereigns under the SA, including sovereigns (and their central banks), certain PSEs identified as sovereigns, MDBs satisfying the criteria for 0% risk weighting and the IIs under the SA. ⁸⁶
Banks and securities firms	Exposures to counterparties treated as banks or securities firms under the SA. Bank exposures also include claims on domestic PSEs treated as claims on banks under the SA and MDBs not meeting the criteria for 0% risk weighting under the SA. ⁸⁷
Retail	Exposures meeting pre-specified retail criteria. ⁸⁸ Basel II also identifies three retail asset sub-classes: (1) exposures secured by residential properties, (2)

other material assets or activities, and therefore little or no independent capacity to repay the obligation, apart from the income that it receives from the asset(s) being financed; (iii) the terms of the obligation give the lender a substantial degree of control over the asset(s) and the income that it generates; and (iv) as a result of the preceding factors, the primary source of repayment of the obligation is the income generated by the asset(s), rather than the independent capacity of a broader commercial enterprise (Basel II, [219]).

⁸³ Basel II, [215].

⁸⁴ Ibid, see also [239-243].

⁸⁵ Basel II, [218-19].

⁸⁶ Basel II, [229].

⁸⁷ Basel II, [230].

⁸⁸ Basel II, [232]. An exposure is categorised as retail if it meets all criteria relating to (i) the nature of

	qualifying revolving retail exposures (QRREs) ⁸⁹ and (3) all other retail exposures. ⁹⁰
Equity	In general defined on the basis of the economic substance of the instrument, including direct and indirect ownership interests, whether voting or non-voting, in the assets and income of a commercial enterprise or of a financial institution that is not consolidated or deducted pursuant to Basel II. ⁹¹

For each of the above IRB approach asset classes, there are three key elements:⁹²

1. **Risk components:** estimates of risk parameters, either determined internally by banks or provided by their national supervisor. These are summarised below:⁹³

Risk component	Explanation
Probability of default (PD)	Refers to the average percentage of borrowers that default in a given rating grade in one year.
Loss given default (LGD) (i.e. recovery rate)	Refers to the percentage of exposure that the bank might lose if the borrower defaults (usually shown as a percentage of EAD).
Exposure at default (EAD)	Refers to an estimate of the amount outstanding in case the borrower defaults.
Maturity (M)	Refers to the remaining time on a borrower's obligation.

These risk components serve as inputs to the risk-weight functions (below) corresponding to the asset classes.⁹⁴

2. **Risk-weight functions:** the means by which the risk components are transformed into RWAs to calculate the minimum capital requirement. Basel II stipulates the relevant risk weight functions for each asset class.

The minimum capital requirement with respect to credit risk is calculated as 8% of a bank's total RWA.⁹⁵

3. **Minimum requirements:** the minimum standards that must be satisfied for a bank to be granted permission by its national regulator to use the IRB approach for a given asset class. The overarching principle behind these requirements is that banks' risk rating and

the borrower or low value of individual exposures (Basel II, [231]) and (ii) large number of exposures (Basel II, [232]).

⁸⁹ Basel II, [234]. For a sub-portfolio to be treated as a QRRE, the following criteria must be satisfied: (a) exposures are revolving, unsecured, and uncommitted (both contractually and in practice); (b) exposures are to individuals; (c) maximum exposure to a single individual in the sub-portfolio is €100,000 or less; (d) banks must demonstrate that use of the QRRE risk weight function is constrained to portfolios that have exhibited low volatility of loss rates relative to their average level of loss rates, especially within the low PD bands; (e) data on loss rates for the sub-portfolio must be retained to allow analysis of the volatility of loss rates; and (f) national supervisor must concur that treatment as a QRRE is consistent with the underlying risk characteristics of the sub-portfolio.

⁹⁰ Basel II, [231-234].

⁹¹ Basel II, [235-238].

⁹² Basel II, [244].

⁹³ BCBS, An Explanatory Note on the Basel II IRB Risk Weight Functions, July 2005, p. 3.

⁹⁴ Basel II, [213]. "For corporate, sovereign, and bank exposures, each borrower and all recognised guarantors must be assigned a rating and each exposure must be associated with a facility rating as part of the loan approval process. Similarly, for retail, each exposure must be assigned to a pool as part of the loan approval process": Basel II, [423]. Additionally, "[e]ach separate legal entity to which the bank is exposed must be separately rated. A bank must have policies acceptable to its supervisor regarding the treatment of individual entities in a connected group including circumstances under which the same rating may or may not be assigned to some or all related entities": Basel II, [422].

⁹⁵ Basel II, [244].

estimation systems are able to rank, order and quantify risks consistently, reliably and validly.⁹⁶ Furthermore, the systems and processes must be consistent with internal use of these estimates.⁹⁷

Basel II offers two IRB approaches – the “foundation IRB approach” and “advanced IRB approach”:⁹⁸

- **Foundation IRB approach:** as a general rule, banks provide their own estimates of PD associated with each of their borrower grades, and rely on supervisory estimates for the other relevant risk components (LGD, EAD and M).⁹⁹
- **Advanced IRB approach:** banks provide more of their own estimates of PD, LGD and EAD, and their own calculation of M, subject to meeting minimum standards.¹⁰⁰

Basel II also allows credit risk management techniques to be considered under the IRB approaches.

Other notable mechanics in the IRB approaches relevant for LIC and LMIC market participants are:

- **Adoption of IRB approaches:** Once a bank adopts an IRB approach for part of its holdings, it is expected to extend it across the entire banking group.¹⁰¹ Banks adopting an IRB approach are expected to continue to employ it; a voluntary return to a Standardised approach or a foundation IRB approach must first be approved by the national supervisor.¹⁰² Additionally, once a bank has adopted the IRB approach for all or part of any of the corporate, bank, sovereign or retail asset classes, it must adopt the IRB approach for its equity exposures at the same time, subject to materiality.¹⁰³ Further, once a bank adopts an IRB approach for its corporate exposures, it must adopt it for its Specialised Lending sub-classes within the corporate exposure class.¹⁰⁴
- **Approval:** To obtain national supervisor approval to use an IRB approach, a bank must demonstrate that it has been using a rating system (and estimating and employing LGDs and EADs in the case of the advanced IRB approach) broadly in line with the minimum requirements for at least the three years prior to qualification.¹⁰⁵
- **Corporate governance:** All material aspects of the rating and estimation processes

⁹⁶ Basel II, [388].

⁹⁷ Basel II, [389].

⁹⁸ Basel II, [245].

⁹⁹ Basel II, [246]. Applies to corporate, sovereign, and bank exposures (Ibid). For retail exposures, banks must provide their own estimates of PD, LGD and EAD as there is no distinction between foundation and advanced approaches for this asset class (Basel II, [252]). Banks are not required to produce their own estimates of PD for certain equity exposures (Basel II, [253]) or for certain exposures falling within the Corporate Specialised Lending sub-classes (Basel II, [248]).

¹⁰⁰ Applies to corporate, sovereign, and bank exposures (Basel II, [247]). For retail exposures, banks must provide their own estimates of PD, LGD and EAD as there is no distinction between foundation and advanced approaches for this asset class (Basel II, [252]). Banks are not required to produce their own estimates of PD for certain equity exposures (Basel II, [253]) or for certain exposures falling within the Corporate Specialised Lending sub-classes (Basel II, [248]).

¹⁰¹ Basel II, [256].

¹⁰² Basel II, [261].

¹⁰³ Basel II, [260]. That is, national supervisors may require a bank to employ an IRB equity approach if its equity exposures are a significant part of its business (i.e. they are ‘material’), even if the bank does not apply an IRB approach to its other business lines: Ibid.

¹⁰⁴ Basel II, [260].

¹⁰⁵ Basel II, [445].

must be approved by the bank's board of directors or its designated committee and senior management.¹⁰⁶ Banks must have independent credit risk control units responsible for the design, selection, implementation and performance of their internal rating systems.¹⁰⁷ An internal audit or an equally independent function must review the bank's rating system and operations at least annually (including the operations of the credit function and the estimation of PDs, LGDs, and EADs).¹⁰⁸ Banks must also review their estimates on a yearly basis or more frequently.¹⁰⁹ They must also have well-articulated internal standards for situations where deviations in realised PDs, LGDs and EADs from expectations become significant enough to call the validity of the estimates into question. Where realised values continue to be higher than expected values, banks must revise estimates upward to reflect their default and loss experience.¹¹⁰ Banks must also conduct general and specific stress tests in their capital adequacy assessments (examples of stressed scenarios include economic or industry downturns, market-risk events and liquidity conditions).¹¹¹

Operational Risk

In addition to addressing credit risk, Basel II prescribes that banks must hold capital for operational risks, defined as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events."¹¹² While operational risk was not itself a new concept within a banking context, Basel II mandating an explicit regulatory capital charge for such risk was relatively new at the time.¹¹³ The First Pillar offers three methods for calculating minimum capital requirements for operational risk, which are outlined below in order of increasing sophistication and risk sensitivity.¹¹⁴

1. Basic Indicator Approach (BIA)

Banks using the BIA calculate their operational risk capital requirements as a proportion of their income. Under the BIA, the capital requirement for operational risk is simply 15% of a bank's annual gross income averaged over the previous three years.¹¹⁵ Practically, banks that apply the SSA for credit risk will adopt the BIA, and banks applying the SA for credit risk may choose to adopt it as well as the other approaches below.¹¹⁶

2. Standardised Approach (ORSA)

By adopting the ORSA, banks also derive their operational risk capital requirement as a proportion of their income. This approach divides banks' activities into the eight business lines set out below. Banks calculate their annual operational risk charge for each business line by multiplying their annual gross income from each business line with its following corresponding risk factor:¹¹⁷

¹⁰⁶ Basel II, [438].

¹⁰⁷ Basel II, [441].

¹⁰⁸ Basel II, [443].

¹⁰⁹ Basel II, [449].

¹¹⁰ Basel II, [504].

¹¹¹ Basel II, [434-435].

¹¹² Basel II, [644]. This includes legal risk (including exposures to fines, penalties or punitive damages resulting from supervisory actions and settlements), but excludes strategic and reputational risk.

¹¹³ See Yeh et al, above n. 36, p 9.

¹¹⁴ Basel II, [645].

¹¹⁵ Basel II, [649]. Gross income is net interest income plus net non-interest income, as defined by national supervisors and/or national accounting standards (Basel II, [650]). Annual gross income that is zero or negative is excluded from this average (Basel II, [649]).

¹¹⁶ Powell, above n. 30, p. 23.

¹¹⁷ Basel II, [652-654]. These risk factors were determined in the Basel negotiations and are stipulated in Basel II.

Business Line	Risk Factor
Corporate finance	18%
Trading and sales	18%
Retail banking	12%
Commercial banking	15%
Payment and settlement	18%
Agency services	15%
Asset management	12%
Retail brokerage	12%

The overall capital requirement for operational risk is then calculated as the weighted sum of these annual operational risk charges, averaged over three years.¹¹⁸ The ORSA will likely be a preferred approach for banks electing to apply the SA for credit risk.¹¹⁹

In any given year, negative capital charges (resulting from negative gross income) in any business line may offset positive capital charges in other business lines without limit (though national supervisors may take a more conservative approach at their discretion).¹²⁰

Banks must satisfy qualifying criteria to use the ORSA. At a minimum, this involves satisfying their national supervisor that: (i) their board of directors and senior management, as appropriate, are actively involved in oversight of the operational risk management framework; (ii) they have an operational risk management system that is conceptually sound and implemented with integrity; and (iii) they have sufficient resources to use this approach in their major business lines as well as in their control and audit areas.¹²¹ Banks must also develop specific policies and document their criteria for mapping gross income for current business lines and activities into the ORSA, and update these as appropriate.¹²² Internationally active banks must also meet additional criteria prior to qualifying to use the ORSA.¹²³

2 (A). Alternative Standardised Approach (ASA)

The ASA has the same methodology as the ORSA, except for two business lines – retail banking and commercial banking. For these business lines, the annual gross income amount is replaced by ‘loans and advances’ multiplied by 0.035.¹²⁴ National supervisors can choose

¹¹⁸ Ibid.

¹¹⁹ Powell, above n. 30, p. 23.

¹²⁰ Basel II, [654].

¹²¹ Basel II, [660].

¹²² Basel II, [662].

¹²³ These criteria include: (i) its operational risk management system must have clear responsibilities assigned to operational risk management functions (responsible for developing strategies to identify, assess, monitor and control/mitigate operational risk; codify firm-level policies and procedures concerning operational risk management and controls; design and implement the firm’s operational risk assessment methodology; and design and implement a risk-reporting system for operational risk), (ii) must systematically track relevant operational risk data as part of the bank’s internal operational risk assessment system, which must be closely integrated into the risk management processes of the bank, and have techniques for creating incentives to improve the management of operational risk throughout the firm, (iii) must regularly report operational risk exposures to management and the board of directors and have procedures to take appropriate action, (iv) the operational risk management system must be well documented, (v) the operational risk management processes and assessment system must be subject to validation and regular independent review, and (vi) the operational risk assessment system must be subject to regular review by external auditors and/or supervisors.

¹²⁴ Basel II, footnote 97.

to permit a bank to adopt the ASA, provided the bank satisfies its supervisor that this approach provides an improved basis for determining its operational risk capital charge (e.g. Basel II provides the example of avoiding double counting of risks, for instance). The BCBS notes that it is not envisaged that large diversified banks in major markets would adopt the ASA.¹²⁵

3. Advanced Measurement Approach (AMA)

Under the AMA, banks must hold capital for operational risk equal to the risk measure generated by the bank's internal operational risk measurement system and loss estimates.¹²⁶

Banks must obtain national supervisory approval before they can use the AMA.¹²⁷ To qualify for the AMA, banks must satisfy their supervisor with the same minimum criteria as the ORSA,¹²⁸ as well as meet specified qualitative¹²⁹ and quantitative standards.¹³⁰ The bank's internal measurement system must reasonably estimate unexpected losses based on the combined use of internal and relevant external loss data, scenario analysis and bank-specific business environment and internal control factors. The bank's measurement system must also be capable of supporting an allocation of economic capital for operational risk across business lines in a manner that creates incentives to improve business line operational risk management.¹³¹ Practically speaking, banks applying an IRB approach are expected to adopt the AMA, or at least to adopt the ORSA and move up to the AMA over time.¹³²

Other notable mechanics under the operational risk framework that are relevant to LIC and LMIC market participants are, in particular:

- Development of sophisticated risk management: Banks are encouraged to move along the spectrum of approaches as they develop more sophisticated operational risk measurement systems and practices.¹³³ Banks cannot revert to a simpler approach once approved for a more advanced approach without supervisory approval.¹³⁴
- Partial use: Banks may use the BIA or ORSA for some parts of their operations and the AMA for others, provided certain minimum criteria are met.¹³⁵

Market Risk

As mentioned above, the BCBS introduced the MRA following Basel I in response to banks incurring additional risks, such as those arising from increased trading activities. Under the MRA, banks are required to adhere to minimum capital requirements in respect of their market risk positions. Practically, this captures their open positions in equities, foreign exchange, commodities, and many derivatives and interest rate-related instruments such as traded debt.¹³⁶

¹²⁵ Ibid.

¹²⁶ This is analogous to the IRB approaches for calculating credit risk capital requirements.

¹²⁷ Basel II, [655].

¹²⁸ Basel II, [664].

¹²⁹ Basel II, [666].

¹³⁰ Basel II, [667-668].

¹³¹ Basel II, [665].

¹³² Powell, above n. 30, p. 23.

¹³³ Basel II, [646].

¹³⁴ Basel II, [648].

¹³⁵ Basel II, [647], [680-683].

¹³⁶ MRA, [1]. Depending on price movements and the valuation methodology adopted (discussed below), this may mean at times that capital held against market risk can fluctuate more than capital held for credit and operational risk.

Banks can select between two broad methodologies to determine their market risk capital charge, with the prior approval of their national supervisor.¹³⁷

- **Standardised approach:** banks determine their minimum capital requirement for market risk by determining the capital charges for each risk category in which they have open positions (e.g. equities, interest rate, foreign exchange or commodities) and summing these to obtain the overall capital requirement.
- **IRB approaches:** banks determine their minimum capital requirement for market risk using their own internal models. The now widely criticised Value-at-Risk (VaR) internal methodology was the previously preferred approach for internal modeling used even during the latest financial crisis.¹³⁸

Basel II does not substantially amend the MRA. Primarily, it redefines the concept of a bank's 'trading book'¹³⁹ and adds guidance on how banks should appropriately value open trading book positions. Its developments of particular relevance to LIC and LMIC market participants are:

- **Systems and controls:** banks must maintain adequate systems and controls sufficient to supply management and supervisors with confidence that their valuation estimates are prudent and reliable. These systems must be integrated with other risk management systems within the organisation (such as credit analysis).¹⁴⁰
- **Valuation methodologies:** banks must mark-to-market as much as possible.¹⁴¹ This is a process whereby banks update the valuations of their positions using the latest available independent prices on at least a daily basis.¹⁴² Mark-to-market rules, however, are controversial, especially given the experiences of the latest financial crisis. Specifically, these accounting rules have been heavily criticised as potentially exacerbating financial difficulties and contributing to crises because of the downward economic spirals they can instigate. For example, as banks must value their positions under mark-to-market rules according to the latest available prices, a decline in the overall price of such assets (for instance, due to an external economic shock) must be reflected in banks' balance sheets. Other entities holding such assets who are facing financial difficulty as a result may engage in 'fire sales' of these assets to urgently raise capital in order to satisfy their regulatory capital requirements, thereby putting further downward pressure on asset prices which must again be marked-down in banks' balance sheets. This can perpetuate a harmful downward spiral whereby mark-to-market rules mandate that assets be constantly re-valued at their ever-

¹³⁷ MRA, [9]. The 'market risk' area of the Basel regulations is incredibly complex. For the purposes of this part of the paper, the macroscopic concepts are delineated for researchers in the field.

¹³⁸ Commentators have noted that reliance on VaR methodologies was a product of extensive lobbying by the financial sector: see Dowd et al, above n. 22, p. 8. The BCBS has since acknowledged the many problems associated with VaR internal methodologies: see BCBS, 'Fundamental Review of the Trading Book: A Revised Market Risk Framework', (October 2013), p. 3, 5, (noting that "[a] number of weaknesses have been identified with using VaR for determining regulatory capital requirements" (p. 3). "Specifically, the 10-day VaR calculation did not adequately capture credit risk or market liquidity risks; incentivized banks to take on tail risk; inadequately captured basis risk and proved procyclical due to its reliance on relatively recent historical data" (p. 5)).

¹³⁹ A trading book consists of positions in financial instruments and commodities held either with trading intent or in order to hedge other elements of the trading book (Basel II, [685]).

¹⁴⁰ Basel II, [692].

¹⁴¹ Basel II, [694]. Marking-to-market is also known as 'fair value accounting'.

¹⁴² See Basel II, [693]. Such sources include e.g. prices from an exchange, screen prices or quotes from independent reputable brokers: *Ibid.*

lowering prices, causing more companies to fire sale to meet their capital requirements, and subsequently further reducing asset prices. Once asset prices drop significantly enough, credit rating agencies may begin downgrading the asset or banks holding such assets as a result of its declining value, and shareholders may sell their stock in such banks, all of which puts extreme pressure on banks' share prices which can instigate a panic. The downward spiral encouraged by marking-to-market therefore can greatly impact banks' capitalisation and liquidity levels which are required for their operation.¹⁴³ Where marking-to-market is not possible, banks may mark-to-model provided such models are demonstrably prudent.¹⁴⁴

- Independent price verification: banks should verify market prices or model inputs used via a unit independent of its dealing room at least monthly (or more frequently depending on the nature of the market/trading activity).¹⁴⁵
- Valuation adjustments or reserves: banks must maintain procedures for considering valuation adjustments/reserves,¹⁴⁶ at a minimum considering: unearned credit spreads, close-out costs, operational risks, early termination, investing and funding costs, and future administrative costs and, where appropriate, model risk.¹⁴⁷ In addition, national supervisors must require banks to consider establishing reserves for less liquid positions (and review their continued appropriateness on an ongoing basis).¹⁴⁸
- Treatment of counterparty credit risk in the trading book: banks are required to calculate a counterparty credit risk charge for OTC derivatives, repo-style and other transactions booked in the trading book, separate from the capital charge for general market risk and specific risk above. The applicable risk weights must be consistent with those used for calculating the capital requirements in the banking book (i.e. Standardised approaches or IRB approaches).¹⁴⁹

Securitisation Risk

Basel II attempts to also address risks posed by securitisation transactions, requiring banks to determine their minimum capital requirements on exposures arising from traditional and synthetic securitisations (or similar structures containing features common to both).¹⁵⁰ This capital treatment is determined on the basis of the transaction's economic substance rather than its legal form.¹⁵¹

Examples of securitisation exposures are (non-exhaustively): asset-backed securities, mortgage-backed securities, credit enhancements, liquidity facilities, interest rate or currency swaps, credit derivatives, tranching and reserve accounts recorded as assets by the originating bank.¹⁵²

¹⁴³ See, e.g. Newt Gingrich, Op-Ed, Forbes, (29 September 2008), available at http://www.forbes.com/2008/09/29/mark-to-market-oped-cx_ng_0929gingrich.html.

¹⁴⁴ Basel II, [695]. Marking-to-model is defined as any valuation which has to be benchmarked, extrapolated or otherwise calculated from a market input [695]. Basel II outlines broad concepts for national supervisors to consider when assessing whether a mark-to-model valuation is prudent.

¹⁴⁵ Basel II, [696].

¹⁴⁶ Basel II, [698].

¹⁴⁷ Basel II, [699].

¹⁴⁸ Basel II, [700].

¹⁴⁹ Basel II, [702].

¹⁵⁰ Basel II, [538].

¹⁵¹ Ibid.

¹⁵² Basel II, [541].

Examples of underlying instruments that may be securitised include (non-exhaustively): loans, commitments, asset-backed and mortgage-backed securities, corporate bonds, equity securities and private equity investments.¹⁵³ The underlying pool in a securitisation transaction may include one or more exposures.¹⁵⁴

Basel II provides two types of approaches for banks to measure their minimum capital requirements for securitisation exposures:

- **Standardised approach:** banks applying the Standardised approaches to credit risk for the type of underlying exposure(s) securitised must use this standardised approach,¹⁵⁵ whereby the minimum capital requirement is calculated by banks applying risk weightings to their trading positions depending on the credit rating of the securitisation transaction.
- **IRB approach:** banks with approval to use an IRB approach for the type of underlying exposures securitised must use that IRB approach for securitisations (and equally may only use that IRB approach if they have received approval to use it for the underlying exposures from their national supervisors).¹⁵⁶ Under this approach, banks determine their minimum capital requirement for securities using external or inferred ratings of the underlying exposures in the securitisation transaction (or, if these are not available, using their own internal credit quality assessments).

As an additional factor, Basel II recognises the concept of ‘risk transference’ (enabling banks to transfer credit risk relating to securitisation transactions from their balance sheet as a result of selling securities) but only provided the bank satisfies certain conditions (such as having no control over the transferred asset and providing evidence of the transference of significant credit risk to a third party).¹⁵⁷

Criticisms relevant to LIC/LMIC banks and supervisors

Several criticisms arise from the First Pillar that are highly relevant for LIC/LMIC banks and supervisors.

Firstly, the First Pillar permits, and indeed, encourages, banks to qualify to employ complex IRB approaches when determining their capital requirements. However, as the BCBS has now acknowledged following evidence from the latest financial crisis, banks’ internal models can be deeply flawed and entirely inappropriate for calculating regulatory capital requirements (such as those reliant on VaR methodologies). Ideally, LICs and LMICs should refrain from encouraging banks to go beyond the SSA and SA and adopt an IRB approach, and, if the latter is permitted, should limit banks from having too much discretion in calculating their capital requirements internally (or ensure superior regulatory oversight than previously observed, though this is likely impracticable). LIC and LMIC supervisors should also design their national systems to reduce opportunities for opacity in calculation methodologies if implementing this aspect of Basel II. Additionally, it should be noted that encouraging the correct use of internal methodologies (whereby banks maintain adequate risk management practices and do not create systemic implications if problems arise) requires consistent efforts by sophisticated and well-resourced supervisors and banks, which may be lacking in LIC and LMIC economies.

Secondly, a longstanding criticism of the Basel framework that is particularly manifested in

¹⁵³ Basel II, [542].

¹⁵⁴ Ibid. It is possible that this contributed to the latest financial crisis and banks shifting risks off-balance sheet, however.

¹⁵⁵ Basel II, [566].

¹⁵⁶ Basel II, [606].

¹⁵⁷ Yeh et al, above n. 38, p. 11.

the First Pillar is that the reliance on external credit ratings in capital requirement methodologies (e.g. the SA and SSA) can undermine effective risk management in banks (not least because credit rating agencies' rating methods may be flawed and not verified by banks once obtained).¹⁵⁸ This concern has been recognised by the BCBS and FSB, and should be carefully considered by LICs and LMICs.¹⁵⁹

Furthermore, LICs and LMICs often experience low penetration levels by credit rating agencies. As such, this aspect of Basel II (and its credit ratings-reliant methodologies) may be entirely inappropriate for many banks operating in these economies, instigating competitive disadvantages between different types of banks¹⁶⁰ and between their counterparts in economies with comparatively higher credit ratings penetration.¹⁶¹

A further criticism to consider is that the First Pillar's risk weightings are arguably set too low, thereby encouraging banks to over-expose themselves to short-term assets to obtain favourable capital charge treatments.¹⁶² This creates the potential for liquidity problems to manifest when stressed market conditions occur.¹⁶³ LIC and LMIC national supervisors may wish to consider availing themselves of their discretion to set stricter risk weightings than those stipulated in Basel II to mitigate this concern (though this would have to be balanced against other considerations such as not creating competitive disadvantages for banks operating in these jurisdictions as a result of stricter risk weightings and therefore higher capital requirements).

Finally, the First Pillar may produce pro-cyclical effects beyond those potentially experienced by implementing Basel I.¹⁶⁴ That is, rather than effecting anti-cyclical capital requirements as intended, the First Pillar's capital requirements may further pressure banks' profits to decline during recessions, thereby reducing their lending capacity and potentially instigating a harmful downward spiral in which banks struggle to maintain their capital requirements by engaging in firesales, ultimately leading to a contraction in credit supply.¹⁶⁵ In particular, the PD and LGD estimates in the IRB approaches are likely pro-cyclical (likely to increase during downturns), which is concerning from a financial stability perspective.

The Second Pillar – Supervisory Review Process

The Second Pillar of Basel II establishes a supervisory review process. This was designed to ensure that the First Pillar's capital requirements are adequate to address banks' risks (i.e. credit, operational, market and securitisation) and to encourage banks to improve their risk management techniques and monitoring and managing of risk.¹⁶⁶

¹⁵⁸ This eventuality is regarded to have contributed to the development of the latest financial crisis.

¹⁵⁹ A possible solution is for LIC and LMIC national supervisors to implement practices that incentivise banks to reduce their reliance on credit ratings and to establish robust internal credit assessment practices: see FSB, above n. 3, p. 4.

¹⁶⁰ See, e.g. Jones, above n. 3, p. 19 (noting the disadvantages that smaller domestic banks in LICs can face following implementation of Basel II compared to larger international banks, including partially as a result of the SA's design).

¹⁶¹ The low penetration of external credit ratings in LICs and LMICs can result in banks operating in these countries having to treat all their exposures at the base 'unrated' level (even if this overestimates or inaccurately categorises the riskiness of their activities), leading to such banks suffering a comparative disadvantage. See, generally, FSB above n. 3.

¹⁶² See, e.g., Dowd et al, above n. 22, p. 19. This eventuality occurred in the lead up to the latest financial crisis, as well as in previous crises such as the Asian financial crisis: *ibid.*

¹⁶³ *Ibid.*

¹⁶⁴ Rafael Repullo and Javier Suarez, IMF, 'The Procyclical Effects of Basel II', paper presented at the 9th Jacques Polak Annual Research Conference, (November 2008), p. 1.

¹⁶⁵ *Ibid.* See also Dowd et al, above n. 22, p. 22 (noting that this problem impacts any form of risk-related capital charging).

¹⁶⁶ Basel II, [720].

The Second Pillar covers similar concepts to those outlined in the CPEBS.¹⁶⁷ It outlines the following four key principles of supervisory review for banks and supervisors to consider:¹⁶⁸

No	Principle
1	<p>Banks' responsibilities: Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.</p> <p>Banks must be able to demonstrate that their internal capital targets are well founded and consistent with their overall risk profile and current operating activities.¹⁶⁹</p> <p>The five main features of a rigorous process are:¹⁷⁰</p> <ul style="list-style-type: none"> • Board and senior management oversight;¹⁷¹ • Sound capital assessment; • Comprehensive assessment of risks; • Monitoring and reporting; and • Internal control review.
2	<p>National supervisors' responsibilities: Supervisors should review and evaluate banks' internal capital adequacy assessments and strategies and ability to monitor and ensure compliance with regulatory capital ratios.¹⁷² If not satisfied, supervisors should take appropriate action.</p> <p>The supervisory authorities should regularly review the process by which a bank assesses its capital adequacy, risk position, resulting capital levels, and quality of capital held. Supervisors should also evaluate the degree to which a bank has a sound internal process in place to assess capital adequacy.¹⁷³</p> <p>The periodic review can involve some combination of:</p> <ul style="list-style-type: none"> • On-site examinations or inspections; • Off-site review; • Discussions with bank management; • Review of work done by external auditors (provided it is adequately focused on the necessary capital issues); and • Periodic reporting.
3	<p>Regulatory expectation: Supervisors should expect banks to operate with capital above the regulatory minimum and should have the ability to require banks to hold more capital than the minimum regulatory requirement.</p> <p>The First Pillar capital requirements will include a buffer for uncertainties surrounding the First Pillar regime that affect the banking population as a whole. Bank-specific uncertainties will be treated under the Second Pillar.¹⁷⁴</p> <p>Several means are available to supervisors for ensuring that banks are operating with adequate capital levels. Among other methods, supervisors may set trigger and target</p>

¹⁶⁷ See Powell, above n. 30, p. 11.

¹⁶⁸ Basel II, [724].

¹⁶⁹ Basel II, [726].

¹⁷⁰ Basel II, [727].

¹⁷¹ Accordingly, a bank's management bears responsibility for ensuring it maintains sufficient capital to support its risks beyond the minimum regulatory requirements if required (Basel II, [721]).

¹⁷² Importantly, supervisors should assess their banks' compliance with the minimum standards and disclosure requirements of the more advanced methods in the First Pillar (in particular the IRB approaches for credit risk and the AMA for operational risk) (Basel II, [724]).

¹⁷³ Basel II, [746].

¹⁷⁴ Basel II, [757].

capital ratios or define categories above minimum ratios (e.g. well capitalised and adequately capitalised) for identifying the capitalisation level of the bank.¹⁷⁵

4 Early intervention: Supervisors should seek to intervene at an early stage to prevent capital falling below the minimum levels required to support a bank's risk characteristics and should require rapid remedial action if capital is not maintained or restored.

Supervisors should consider a range of options (even beyond increased capital requirements) if they are concerned that a bank is not meeting the requirements embodied in the supervisory principles outlined above.¹⁷⁶ These actions may include intensifying the monitoring of the bank, restricting the payment of dividends, requiring the bank to prepare and implement a satisfactory capital adequacy restoration plan, and requiring the bank to raise additional capital immediately. Supervisors should have the discretion to use the tools best suited to the circumstances of the bank and its operating environment.¹⁷⁷

These four key principles are intended to promote an active dialogue between banks and their supervisors to effectively reduce risk or restore capital where necessary.¹⁷⁸ Following these principles, the Second Pillar outlines other 'specific issues' to be addressed under the Supervisory Review Process. These include risks not directly addressed in the First Pillar and suggested supervisory assessments to facilitate the proper functioning of aspects of the First Pillar. These specific issues broadly constitute risks that banks should monitor (which however had no quantitative assessment methodology when Basel II was published), and cover:¹⁷⁹

- Interest rate risk (considerations regarding national supervisors imposing their own minimum capital requirements to address interest rate risk);
- Credit concentration risk (considerations regarding stress tests of such risks, ensuring banks have sufficient internal policies, systems and controls to address such risk);¹⁸⁰
- Credit risk (considerations regarding stress tests under the IRB approaches, national definitions of default and residual risks stemming from credit risk management techniques);
- Operational risk (whether gross income provides a useful proxy for determining the operational risk capital charge);
- Securitisations (considerations regarding the significance of risk transfers, new features of securitisations developed in the market, implicit (i.e. non-contractual) support provided by banks in securitisation transactions, credit protection measures in securitisation transactions, call provisions and early amortisation in securitisation transactions); and

¹⁷⁵ Basel II, [758].

¹⁷⁶ Basel II, [723].

¹⁷⁷ Basel II, [759].

¹⁷⁸ Basel II, [722].

¹⁷⁹ Powell, above n. 30, p. 11.

¹⁸⁰ Basel II, [773-777]. Credit concentration risk refers to any single credit exposure or group of credit exposures capable of producing losses large enough to threaten a bank's viability or operations (relative to its capital, total assets and overall risk levels). These risks adversely affect the creditworthiness of the individual counterparty exposures that comprise the concentration due to positively correlated risk factors, particularly during times of stress (Basel II, 770-772).

- Encouraging supervisory transparency, accountability, enhanced cross-border communication and cooperation with other supervisors.

Criticisms relevant to LIC/LMIC banks and supervisors

Several points originating from the Second Pillar are highly relevant for consideration by LIC/LMIC banks and supervisors. As a starting point, implementing the Supervisory Review Process theoretically presents a significant opportunity for many LICs and LMICs to enhance their bank supervision capabilities.¹⁸¹ However, many LICs and LMICs have historically displayed substantial non-compliance with similar supervisory principles covered in the CPEBS.¹⁸² Although the Second Pillar provides another avenue to realise similar supervisory principles and objectives, this pattern of previous non-compliance in such economies suggests that, in practice, LICs and LMICs may face particular challenges achieving full compliance with the Supervisory Review Process.

One factor contributing to this may be the resources gap between banks and their supervisors, which is likely exacerbated in LICs and LMICs. Banks generally have far greater financial, human and technical resources than their supervisors, allowing them to wield tremendous influence to achieve their desired outcomes such as lower capital requirements, watered-down supervisory regulations or profiting through regulatory arbitrage.¹⁸³ This can undermine the efficacy of the Second Pillar, particularly in LICs and LMICs where national supervisors can face more severe resource constraints.

Additionally, while not immediately evident from the Basel II text, national supervisors ideally should consider wider aspects of their nation's banking governance framework in order to facilitate effective implementation of the Supervisory Review Process. This may be particularly challenging for LMICs and LICs where bank governance systems are less well established or formulated.¹⁸⁴ Bank executive compensation provides a useful example. The Second Pillar prescribes measures that sometimes rely on a bank's senior management reviewing the bank's risk profile and activities. While such oversight is intuitively appealing, reliance on senior management may be ineffective without first aligning their incentives with the Second Pillar's supervisory objectives. Due to the ways in which bank executive compensation is typically structured (such as compensation via share options, for instance) and moral hazard in the banking industry created by an implicit state guarantee for systemically important institutions, management in many banks is in practice incentivised to permit the underestimation of risk in the activities they monitor.¹⁸⁵ Consideration of such wider factors is a necessary though highly complex task, and may be especially challenging in LICs and LMICs in the context of Pillar 2 implementation.

Finally, it is worth noting that LIC and LMIC supervisors and banks will likely need to consider the Supervisory Review Process' 'specific issues' with particular emphasis.¹⁸⁶ The risks considered in this section (especially interest rate, credit and liquidity risks) can be highly relevant to LICs and LMICs with characteristically comparatively volatile and illiquid financial markets. As banks may not be able to price or insure against such risks in such environments, LIC and LMIC supervisory responses will likely need to be greatly informed by this section of the Supervisory Review Process.¹⁸⁷

¹⁸¹ Powell, above n. 30, p. 13, noting that "[t]here is no doubt that if all countries truly adopted Basel II, Pillar 2 this would represent a significant advance in the quality of banking supervision across the globe."

¹⁸² Ibid.

¹⁸³ Dowd et al, above n. 22, p. 24-25.

¹⁸⁴ Indeed, this is also an issue that still plagues relatively advanced economies.

¹⁸⁵ Dowd et al, above n. 22, p. 18.

¹⁸⁶ See Powell, above n. 30, p. 13.

¹⁸⁷ Ibid.

The Third Pillar – Market Discipline

The Third Pillar of Basel II aims to enhance market discipline by introducing bank capital and adequacy disclosure and reporting requirements. These are intended to facilitate market participants' assessments of key information regarding a bank's capital, scope of capital application, risk exposures, risk assessment processes and capital adequacy characteristics.¹⁸⁸

This pillar prescribes general qualitative and quantitative measures encompassing capital structure and capital adequacy across a banking group, for each significant bank subsidiary, for banks' portfolios and for the risk types considered above in the First and Second Pillars (such as for credit risk, operational risk, market risk, securitisation risks, interest rate risk in the banking book, risk of equity investments and credit risk mitigation techniques).¹⁸⁹ The market discipline framework is particularly useful for promoting reporting by banks that employ internal methodologies such as the IRB approaches, which allow them greater discretion when deriving their minimum capital requirements.¹⁹⁰

In principle, banks' disclosures should be consistent with how senior management and the board of directors assess and manage the risks of the bank.¹⁹¹ Requirements of particular relevance for banks with LIC and LMIC operations include:

- **Materiality:** banks should decide which information is relevant for disclosure purposes based on a "materiality" concept. Information is regarded as material if its omission or misstatement could change or influence the assessment or decision of someone relying on that information for the purpose of making economic decisions.¹⁹² This is a broad standard that provides banks with substantial discretion and responsibility for determining what disclosures are relevant.¹⁹³
- **Frequency:** generally, the disclosures should be made on a semi-annual basis, however:¹⁹⁴
 - Qualitative disclosures providing a general summary of a bank's risk management objectives and policies, reporting system and definitions may be published on an annual basis;
 - Large internationally active banks and other significant banks (and their significant bank subsidiaries) must disclose their Tier 1 and total capital adequacy ratios, and their components, on a quarterly basis;
 - If information on risk exposure or other items is prone to rapid change, then banks should disclose information on a quarterly basis. In all cases, banks should publish material information as soon as practicable and not later than deadlines set by applicable national laws.

¹⁸⁸ Basel II, [809].

¹⁸⁹ Basel II, [822]; see also Powell, above n. 30, p. 14. The Third Pillar applies at the top consolidated level of the banking group to which the Basel II framework applies, while disclosures related to individual banks within groups are not generally required to fulfil the disclosure requirements (though there is an exception for the disclosure of Tier 1 Capital and total capital ratios by the top consolidated entity where an analysis of significant bank subsidiaries within the group is appropriate, in order to recognise the need for these subsidiaries to comply with the framework and other applicable limitations on the transfer of funds or capital within the group).

¹⁹⁰ Basel II, [809].

¹⁹¹ Basel II, [810].

¹⁹² Basel II, [817]. This definition is consistent with International Accounting Standards and with many national accounting frameworks.

¹⁹³ Powell, above n. 30, p. 14.

¹⁹⁴ Basel II, [818].

- Disclosure procedures: banks should have a formal disclosure policy approved by their board of directors addressing their approach to deciding what disclosures they will make and the internal controls over the disclosure process. Banks should also implement a process for assessing the appropriateness of their disclosures, including their validation and frequency.¹⁹⁵

Criticisms relevant to LIC/LMIC banks and supervisors

The Third Pillar entails several important criticisms for LIC/LMIC banks and supervisors to consider.

Firstly, many banks with LIC or LMIC operations potentially face significant compliance costs to meet Third Pillar requirements as well as their existing disclosure obligations under other instruments such as international accounting frameworks (for example, IFRS 7).¹⁹⁶ It has been observed that the Third Pillar's conceptual framework does not effectively overlap with that of the IFRS.¹⁹⁷ This creates potentially substantial compliance costs for banks that will need to devote time and resources on an ongoing basis to satisfy differing disclosure regimes. Such costs may also be exacerbated in LICs and LMICs, as their financial sectors can often be relatively informationally lacking or opaque and banks are often closely held institutions (i.e. without widely dispersed share ownership, which can further compound informational inaccessibility). Compliance with the Third Pillar may therefore require significant changes in current LIC/LMIC disclosure practices and norms, further increasing initial compliance costs for these institutions.

Supervisors should also be aware that market discipline is unlikely to be fully achieved through implementation of the Third Pillar alone given its broad standard of materiality and deferment of discretion to banks. More substantive and coherent national policies may be required to achieve this.¹⁹⁸ This said, the BCBS does note that many bank supervisors have various powers to achieve these disclosure requirements, such as mandating them under 'safety and soundness' grounds or requiring banks to provide information in regulatory reports and making such information in these reports publicly available.¹⁹⁹ They also have a range of enforcement measures, from dialogue with bank management to reprimands or financial penalties. National supervisors theoretically therefore have wide flexibility to structure their approaches to market discipline (within the boundaries of their legal powers and resource constraints).²⁰⁰

Basel II.5

Following the financial crisis, the BCBS introduced two sets of reforms to the international capital framework for banks, the first of which was Basel II.5 issued in 2009.²⁰¹ Basel II.5

¹⁹⁵ Basel II, [821].

¹⁹⁶ See e.g. Christophe Cadiou and Monika Mars, PricewaterhouseCoopers, 'Basel II Pillar 3: Challenges for Banks', The Journal (date unlisted), p. 31-34.

¹⁹⁷ Wilfried Wilms, European Banking Federation, 'The Dark Side of the Basel Committee's Pillar 3 Framework', Presentation at the XBRL Week in Brussels, (25 November 2014), p. 2.

¹⁹⁸ See Powell, above n. 30, p. 15, (noting that "in those environments where traditional supervision is weak, there remains an urgent need for the consideration of complementary measures to enhance market discipline more widely").

¹⁹⁹ Basel II, [810].

²⁰⁰ Basel II, [810]. The BCBS notes that it is not intended under this Pillar that national supervisors resort to imposing additional capital requirements on banks for disclosure requirement breaches (except as otherwise indicated in the framework): *Ibid.*

²⁰¹ BCBS, 'Revisions to the Basel II Market Risk Framework', (Updated as of 31 December 2010) ('Basel II.5').

aimed to enhance the three pillars of Basel II and strengthen the capital treatment of banks' trading books following the MRA.²⁰² However, it has been widely criticised for failing to meet its stated objectives.²⁰³ Significantly, Basel II.5 sustains the Basel framework's over-reliance on complex, potentially flawed and gameable internal models and substantially constitutes an ad hoc, under-nuanced response to perverse banking practices observed following the financial crisis.²⁰⁴ Accordingly, this paper focuses attention on Basel II and III rules as these yield far greater insights for LIC and LMIC researchers, especially when considering the substantial complexity and highly specific matters contemplated in Basel II.5.

Basel III

The issuance of Basel III in 2010 comprised the second set of reforms to the international regulatory capital framework following the financial crisis.²⁰⁵ Basel III aims to improve the quality and quantity of banks' regulatory capital and enhance the overall risk coverage of the capital framework, introducing both micro-prudential requirements at bank-level and macro-prudential requirements to address system-wide concerns.²⁰⁶ The scope of application of Basel III's minimum capital requirements is the same as that of Basel II,²⁰⁷ though national regulators may similarly impose stricter standards at their discretion.

Sections of particular relevance for LICs and LMICs are considered below.

Definition of capital

To improve the quality of banks' capital base (i.e. their ability to absorb losses), Basel III introduces a new definition of capital with greater focus on common equity, which is the highest quality component of bank capital.²⁰⁸

Under Basel III, a bank's total regulatory capital consists of (i) Tier 1 Capital ('going-concern capital', comprising Common Equity Tier 1 Capital and Additional Tier 1 Capital) and (ii) Tier 2 Capital ('gone-concern capital').²⁰⁹ Specifically:

- **Common Equity Tier 1 capital** includes applicable common shares, stock surplus (share premium); retained earnings; accumulated other comprehensive income and other disclosed reserves and regulatory adjustments, all of which must meet prescribed eligibility criteria.²¹⁰

²⁰² Ibid, see also FSB, above n. 3, p. 11.

²⁰³ See, e.g. Imad Moosa, 'Good Regulation, Bad Regulation: The Anatomy of Financial Regulation', (May 2015), [7.1 – 7.2].

²⁰⁴ Ibid, [7.2]. See also, e.g., Ruth Wandhöfer, 'Transaction Banking and the Impact of Regulatory Change: Basel III and Other Challenges for the Global Economy', Palgrave Macmillan, (October 2014), p. 113 (noting that: "[w]e cannot miss the opportunity to criticise the [BCBS]. Not only are the new rules too complex, and this is a common problem with all Basel rules, but there is also quite some scope for additional inconsistencies in implementation between banks. Basel II.5 increased the profitability pressure on investment banks' returns, and its staggered implementation across the world (as always with Basel rules) has added to the sector's uneven playing field").

²⁰⁵ Basel III, [6]. See also FSB, above n. 3, p. 11.

²⁰⁶ Basel III, [6]. However, Basel III and recent policy developments in the Basel framework have also garnered criticism for succumbing to pressures from the banking lobby: see Dowd et al, above n. 22, p. 29.

²⁰⁷ Basel III, [47].

²⁰⁸ Basel III, [48].

²⁰⁹ Basel III, [49].

²¹⁰ Basel III, [52]. Certain prescribed deductions from these capital definitions are permissible (e.g. goodwill, minority interests).

- **Additional Tier 1 capital** includes applicable instruments, stock surplus (share premium) and regulatory adjustments, all of which must meet prescribed eligibility criteria.²¹¹
- **Tier 2 capital** includes applicable instruments, stock surplus (share premium), certain loan loss provisions and regulatory adjustments, all of which must meet prescribed eligibility criteria.²¹²

Under Basel III, banks are required to maintain the following minimum capital levels:²¹³

1. Common Equity Tier 1 capital must be at least 4.5% of RWA at all times;
2. Tier 1 Capital must be at least 6% of RWA at all times,²¹⁴ and
3. Total Capital (Tier 1 Capital plus Tier 2 Capital) must be at least 8% of RWA at all times.

Basel III also requires banks to comply with disclosure obligations in the interests of enhancing transparency and market discipline.²¹⁵

Risk coverage

The BCBS recognised that a failure to capture major on- and off-balance sheet risks, as well as derivatives-related exposures, was a key factor that amplified the financial crisis.²¹⁶

Accordingly, Basel III attempts to capture all material banking risks within the capital framework. Particularly relevant aspects for LIC and LMIC banks and supervisors are:

- **Counterparty credit risk:** Banks encounter counterparty credit risk frequently from their derivatives, repurchasing and securities financing activities. This risk arises from potential losses associated with the risk of default or variation in the credit quality of their counterparties in such transactions. To an extent, Basel II addresses counterparty credit risk, particularly by requiring banks to hold sufficient minimum capital against its credit risk exposures (as outlined above). However, Basel II omits much of the 'credit valuation adjustment (CVA) risk' that banks can face.²¹⁷ CVA risk arises from potential mark-to-market losses associated with deteriorations in the credit worthiness of a bank's counterparty (as opposed to its outright default).²¹⁸ Under Basel III, therefore, banks are subject to a new CVA risk capital charge. They must also calculate their capital requirement for counterparty credit risk using "stressed inputs" and meet related capital

²¹¹ Basel III, [54].

²¹² Basel III, [57].

²¹³ Basel III, [50].

²¹⁴ That is, banks must maintain at least 4.5% Common Equity Tier 1 capital and up to 1.5% Additional Tier 1 capital.

²¹⁵ Basel III, [91].

²¹⁶ Basel III, [97]. The use of Special Purpose Vehicles in securitisation transactions provides an example of a common means by which banks shifted risks off-balance sheet in the lead up to the latest financial crisis, which was not prevented (and indeed was encouraged, to an extent) by preceding Basel rules.

²¹⁷ BCBS, 'Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems', (December 2010, revised June 2011), [14].

²¹⁸ Basel II addresses counterparty default risk faced by banks, but not CVA risk. This is an important coverage for LIC and LMIC supervisors to consider as CVA risk was a greater source of losses than those arising from outright defaults during the financial crisis: *Ibid.* See also Shearman & Sterling LLP, 'Basel III framework: the Credit Valuation Adjustment (CVA) Charge for OTC Derivative Trades', (11 November 2013), p. 1 (noting that "[t]wo-thirds of counterparty credit losses in the financial crisis were suffered not as a result of actual defaults of the counterparty, but because credit market volatility negatively impacted bank earnings").

charges to such exposures.²¹⁹ The purpose of these measures is to avoid capital charges becoming too low when markets become volatile, to help address procyclicality concerns within the Basel framework and to promote more integrated risk management of market risk and counterparty credit risk.²²⁰

- **Enhanced risk management:** Introducing enhanced counterparty credit risk management requirements (relating to banks' estimation practices, stress testing for counterparty credit risk, model validations and backtesting). This also attempts to address 'wrong-way risk.'²²¹ Basel III also introduces measures attempting to strengthen banks' positions in transactions with collateral and counterparties holding collateral.
- **Exposures to large financial institutions:** Requiring that all exposures to financial institutions that are (i) regulated financial institutions whose total assets are greater than or equal to US\$100 billion or (ii) unregulated financial institutions, regardless of size) have higher correlation parameter multiples to mitigate against systemic risk.
- **Derivatives exposures:** Incentivising banks to undertake derivatives transactions with central counterparties (CCPs) (for example, centralised exchanges) rather than bilateral 'over the counter' derivatives transactions by allocating a lower risk weighting charge to risk exposures with CCPs meeting certain criteria. This is an attempt to reduce systemic risk supporting the reform efforts of the Committee on Payments and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO). Additionally, banks will be required to apply tougher (i.e. longer) periods for collateral margins as a basis for determining regulatory capital when they have large and illiquid derivatives exposures.
- **Reliance on external credit ratings:** Basel III introduces measures to minimise banks' reliance on external credit ratings and the procyclical 'cliff effects' (or downward spirals) encouraged by Basel II. Such measures include requirements for banks to internally assess their externally-rated securitisation exposures (and disincentivising them from obtaining such ratings altogether), the elimination of certain 'cliff effects' associated with credit risk mitigation practices, and incorporating key elements of the IOSCO Code of Conduct Fundamentals for Credit Rating Agencies into the Basel framework's eligibility criteria for the use of external ratings in the capital framework.²²²

Liquidity Coverage Ratio (LCR)

As a key response to banks' poor liquidity management which contributed to the latest financial crisis, Basel III introduces a LCR which is designed to promote short-term resilience in banks' liquidity risk profiles.²²³ It does this by requiring banks to hold an adequate amount of high quality liquid assets ('HQLA') that can be easily converted into cash to meet liquidity needs in order to survive stressed scenarios.²²⁴ Specifically, to meet the LCR requirement, banks must hold sufficient HQLA to cover their total net cash outflows over a 30-day

²¹⁹ Basel III, [14],

²²⁰ Ibid.

²²¹ This risk arises where the amount of a bank's exposure in a transaction increases when the credit quality of its counterparty declines. In other words, PD is positively correlated with the amount of the exposure.

²²² Basel III, [15].

²²³ Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools, January 2013, [1].

²²⁴ Such a scenario may entail the following characteristics: (i) a significant downgrade of the institution's public credit rating; (ii) a partial loss of deposits; (iii) a loss of unsecured wholesale funding; (iv) a significant increase in secured funding haircuts; and (v) increases in derivative collateral calls and substantial calls on contractual and non-contractual off-balance sheet exposures, including committed credit and liquidity facilities: Basel III, [40]; BCBS, 'Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools', (January 2013), [1].

period.²²⁵ A bank's ratio of HQLA/Net cash outflows over 30 days must be greater than 100%, subject to the definitions below:

HQLA consists of two categories of assets:²²⁶

- **Level 1 assets:** includes cash, central bank reserves, marketable securities representing claims on or guaranteed by sovereigns, central banks, PSEs, the Bank of International Settlements, the International Monetary Fund, the European Central Bank, the European Commission or MDBs and satisfying certain conditions, and some sovereign or central bank debt securities where the sovereign has a non-0% risk weight.
- **Level 2 assets:** are capped to comprise up to 40% of overall HQLA stock, includes a 15% haircut applied to marketable securities assigned a 20% risk weighting under Basel II's SA and corporate debt securities and covered bonds, each meeting certain conditions, as well as larger haircuts applied to other instruments that may be permitted at the national supervisor's discretion.

Banks should report their LCR to supervisors at least monthly and have the capacity to increase this frequency to weekly or daily depending on the discretion of the national supervisor in stressed situations.²²⁷ The BCBS note that supervisors have a range of options to respond to breaches of this requirement.²²⁸ The idea is that the LCR should be used on an ongoing basis to help monitor and control liquidity risk.

Net Stable Funding Ratio (NSFR)

Complimentary to the LCR, the NSFR is designed to promote resilience in banks' liquidity risk profiles over a longer time horizon (one year) by creating additional incentives for banks to fund their activities with more stable sources of funding on an ongoing structural basis.²²⁹ This is therefore another liquidity management measure accompanying the LCR.

The NSFR requires banks to hold a minimum amount of stable sources of funding relative to the liquidity profiles of their assets over a one-year horizon, as well as the potential for contingent liquidity needs arising from off-balance sheet commitments.²³⁰ This is intended to limit banks' over-reliance on short-term wholesale funding during times of buoyant market liquidity and encourage their improved assessment of liquidity risk across their on- and off-balance sheet items.²³¹

To introduce more consistency internationally, Basel III also introduces a set of common monitoring metrics in the liquidity framework for supervisors to consider at a minimum, including: (i) contractual maturity mismatch, (ii) concentration of funding, (iii) available unencumbered assets, (iv) LCR by currency and (v) market-related monitoring tools.²³²

²²⁵ Basel III, [38]. Total expected net cash outflows are calculated by multiplying the outstanding balance of various categories of liabilities (deposits or other funding sources) by the rate at which they are expected to run or be drawn down. See also FSB, above n. 3, p. 30.

²²⁶ BCBS, 'Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools', (January 2013), [45]-[54].

²²⁷ BCBS, 'Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools', (January 2013), [162].

²²⁸ BCBS, 'Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools', (January 2013), [18].

²²⁹ Basel III, [38].

²³⁰ Basel III, [42].

²³¹ Basel III, [42].

²³² Basel III, [43].

Capital conservation buffer (CCB)

Basel III requires banks to hold buffers of capital above their minimum capital requirements outside of periods of stress.²³³ The CCB is designed to ensure that banks establish capital buffers that can subsequently be drawn down as losses are incurred during stressed scenarios.²³⁴

The target CCB is 2.5% (comprised of Common Equity Tier 1) above the minimum capital requirement. If the bank's capital level falls within this conservation range, capital distribution constraints are imposed on the bank until it recovers its capital levels. These imposed constraints only relate to distributions,²³⁵ not to the operation of the bank,²³⁶ and increase the closer a bank's capital level approaches its minimum capital requirement.²³⁷

The table below illustrates the minimum capital conservation ratios that banks must maintain at various levels of Common Equity Tier 1 capital ratios.²³⁸

Common Equity Tier 1 Ratio	Minimum capital conservation ratios (as a % of earnings)
4.5% - 5.125%	100%
>5.125% - 5.75%	80%
>5.75% - 6.375%	60%
>6.375% - 7.0%	40%
> 7.0%	0%

When a bank's CCB has been drawn down, it can rebuild it by reducing its discretionary distributions of earnings (e.g. reducing dividend payments, share-backs and discretionary staff bonus payments), or by raising new capital from the private sector as an alternative to conserving internally generated capital.²³⁹ It provides a limit on banks' discretion where they have depleted their capital buffers from further reducing them through generous distributions of earnings, thereby boosting their ability to withstand adverse conditions.²⁴⁰

The restrictions are imposed on distributions out of the consolidated banking group; however, national supervisors may apply the regime at the individual entity level to conserve resources in specific parts of the group.²⁴¹

Countercyclical capital buffer (CCCB)

Basel III also introduces a CCCB aimed at addressing macro-financial risks that may affect banks.²⁴² This is designed to ensure that the banking system has a sufficient capital buffer to protect itself against future potential losses from system-wide risks.

Under the CCCB regime, national regulators monitor credit growth and other indicators in

²³³ Basel III, [123].

²³⁴ Basel III, [122].

²³⁵ Items considered to be distributions include dividend payments, share buybacks and certain discretionary payments such as discretionary staff bonuses.

²³⁶ Basel III [129]. Payments not resulting in the depletion of Common Equity Tier 1 are not considered distributions (Basel III, [132]). An example of an operational item would be ordinary (non-discretionary) staffing costs, for instance.

²³⁷ Basel III, [130].

²³⁸ Basel III, [131]. The Common Equity Tier 1 ratio includes amounts used to meet the 4.5% minimum Common Equity Tier 1 requirement, but excludes any additional Common Equity Tier 1 needed to meet the 6% Tier 1 and 8% Total Capital requirements. (Basel III, [131]).

²³⁹ Basel III, [124].

²⁴⁰ Basel III, [128].

²⁴¹ Basel III, [132].

²⁴² Basel III, [137].

their jurisdictions and assess whether they are experiencing a period of excessive credit growth leading to a build up of system-wide risk.²⁴³ Based on this assessment, they may put in place a CCCB requirement (together with any other macro-prudential tools at their disposal) to counteract such risk, which will vary between 0% - 2.5% of RWA, depending on their judgment as to the extent of the build up of system-wide risk.²⁴⁴ The CCCB requirement is released when the system-wide risk crystallises or dissipates.²⁴⁵

Practically, internationally active banks must consider their geographic private sector credit exposures (including non-bank financial sector exposures) and calculate their CCCB requirement as a weighted average of the buffers that are being applied in each jurisdiction in which they have an exposure.²⁴⁶ Banks must meet this CCCB requirement with Common Equity Tier 1 or other fully loss absorbing capital, or be subject to restrictions on their distributions.²⁴⁷ Therefore, when the CCCB is implemented, it effectively extends the size of a bank’s CCB.

As with the CCB, the CCCB is applied at the consolidated level. In addition, national supervisors may apply the regime at an individual entity level to conserve resources in specific parts of the group.²⁴⁸

The table below illustrates the minimum capital conservation ratios that banks must meet at various levels of the Common Equity Tier 1 capital ratio.²⁴⁹

Common Equity Tier 1 (including other fully loss absorbing capital)	Minimum capital conservation ratios (as a % of earnings)
Within first quartile of buffer	100%
Within second quartile of buffer	80%
Within Third quartile of buffer	60%
Within Fourth quartile of buffer	40%
Above top of buffer	0%

Banks must also publicly disclose their CCCB requirements with at least the same frequency as their minimum capital requirements.²⁵⁰

Leverage ratio (LR)

Basel III introduces a non-risk based LR to supplement banks’ existing risk-based minimum

²⁴³ Supervisors will be required to determine whether credit growth is excessive by considering macroeconomic variables; for example, GDP. Where such analysis indicates that credit growth has deviated upward from its ordinary economic trend to an extent that suggests a systemically-risky credit bubble is forming, the CCCB may be implemented to limit such credit growth. See, e.g. Louis Kasekende et al, ‘Basel III and the Global Reform of Financial Regulation: How Should Africa Respond? A Bank Regulator’s Perspective’, (2011), p. 8.

²⁴⁴ Basel III, [139]. National authorities can implement a range of additional macro-prudential tools, including a buffer in excess of 2.5% for banks in their jurisdiction, if this is deemed appropriate. However, the international reciprocity provisions set out in Basel III treat the maximum CCCB as 2.5% (Ibid).

²⁴⁵ Basel III, [138].

²⁴⁶ Basel III, [143]. Credit exposures in this case include all private sector credit exposures that attract a credit risk capital charge or the risk weighted equivalent trading book capital charges for a specific risk, incremental risk charge and securitisation: Ibid.

²⁴⁷ Basel III, [142].

²⁴⁸ Basel III, [142].

²⁴⁹ Basel III, [147].

²⁵⁰ Basel III, [149].

capital requirements. The LR is intended to (i) constrain the build-up of leverage in the banking sector, and (ii) reinforce the risk-based requirements with a straightforward, non-risk based 'backstop' measure.²⁵¹

To start with, Basel III is testing a minimum Tier 1 LR of 3% up to 1 January 2017.²⁵² It will then likely be calculated as the average of the monthly leverage ratios over a quarter based on a 'capital measure' and an 'exposure measure'.²⁵³ Banks are also required to publicly disclose their LR on a consolidated basis from 1 January 2015.²⁵⁴

Of particular note from the perspective of LIC/LMIC research are the revisions issued by the BCBS responding to concerns about the impact of the Basel framework on trade finance.²⁵⁵ Trade finance lending plays an indispensable role in international trade, on which LICs/LMICs are often heavily reliant.²⁵⁶ A significant complaint was that the LR applied a blunt 100% CCF to off-balance sheet items (including those associated with trade finance), unless the commitment was unconditionally cancelable by the bank without prior notice (in which case the CCF was 10%).²⁵⁷ Following 'ferocious industry lobbying',²⁵⁸ the BCBS introduced revisions to Basel II's Standardised and IRB approaches aimed at reducing the extent by which certain off-balance sheet items convert to on-balance sheet credit exposures for the purposes of calculating regulatory capital ratios, but did not change the CCFs under the LR.²⁵⁹ The subsequent January 2014 amendment to the LR introduces an arguably more refined/realistic approach to converting off-balance sheet exposures by employing the CCFs in Basel II's SA, which are not fixed at 100%, meaning that the cost of many trade-finance related exposures will not be as high as previously proposed as they will no longer be fully captured by a 100% CCF.²⁶⁰ This is hopefully a more realistic methodology in terms of accounting for trade finance activities; however, the Basel framework's sensitivity to addressing LICs/LMICs concerns is still far from perfect.

Global-Systemically Important Bank (G-SIB) capital requirements

The BCBS issued its framework for G-SIBs in 2011 (and updated it in 2013), outlining the assessment methodology for classifying banks as G-SIBs and the subsequent additional loss absorbency capital requirements applicable to them. The aim is to provide additional going-concern loss absorbency for G-SIBs to reduce their probability of failure.²⁶¹ This constitutes

²⁵¹ Basel III, [153].

²⁵² BCBS, 'Basel III Leverage Ratio Framework and Disclosure Requirements', (January 2014) (henceforth 'Basel III LR'), [6]. The BCBS will collect data during the transition period to determine the impact of using Common Equity Tier 1 or Total Capital as the 'capital measure' for the LR going forward (Ibid, [10-11]). The 'exposure measure' is comprised of a bank's on-balance sheet assets, derivatives exposures, securities finance transactions (e.g. repurchase agreements) and off-balance sheet exposures (e.g. standby letters of credit) (Ibid, [14]).

²⁵³ Basel III, [153].

²⁵⁴ Basel III LR, [40].

²⁵⁵ These include: BCBS, 'Treatment of Trade Finance Under the Basel Capital Framework', (October 2011) (henceforth 'Trade Finance Under Basel') and Basel III LR.

²⁵⁶ Generally, trade financing involves standardised lending terms, short-term maturities and comparatively low credit risk compared to many other bank lending activities. An important example for LICs/LMICs is a 'letter of credit', which is commonly used in international trade.

²⁵⁷ See, generally, Andrew Cornford, 'Remarks on the Basel Capital Framework and Trade Finance', United Nations Conference on Trade and Development Conference, (27 February 2014), p. 7.

²⁵⁸ Sam Fleming and Gina Chon, 'Banks Win Basel Concessions on Debt Rules', Financial Times, (13 January 2014).

²⁵⁹ Trade Finance Under Basel, pp. 2-3.

²⁶⁰ See, e.g. Shearman & Sterling LLP, 'Basel III Framework: The Leverage Ratio', Client Publication, (5 February 2014), p. 4. That is, such exposures will not be as convertible to on-balance sheet exposures, reflecting their comparatively lower riskiness than other off-balance sheet assets.

²⁶¹ BCBS, Global Systemically Important Banks: Updated Assessment Methodology and the Higher Loss Absorbency Requirement, (July 2013), [6] (henceforth, 'G-SIB') (noting that these measures

part of the FSB’s broader effort to reduce the moral hazard of the implicit state guarantee that Global-Systemically Important Financial Institutions (G-SIFIs) enjoy as a result of their central positions within financial systems.²⁶² In other words, by requiring G-SIBs to take measures to reduce their vulnerabilities, the framework hopes to reduce the likelihood that governments feel compelled to ‘bail-out’ systemically important financial institutions.

Under the G-SIB framework, an indicator-based measurement approach is applied to determine a bank’s systemic importance.²⁶³ The five categories of indicators are (i) the **size** of a bank, (ii) its **interconnectedness**, (iii) the **lack of readily available substitutes or financial institution infrastructure** for the services it provides, (iv) its **global (cross-jurisdictional) activity** and (vi) its **complexity**.²⁶⁴ These indicators were selected as they reflect different generators of negative externalities connected with making a bank systemically important.²⁶⁵ Equal weight is given to each of these five categories of systemic importance.²⁶⁶

The indicator-based measurement approach uses data from a large sample of banks as its proxy for the global banking sector to calculate banks’ scores.²⁶⁷ For each bank, the score for a particular indicator is calculated by dividing the individual bank amount by the aggregate amount for the indicator summed across all banks in the sample.²⁶⁸ Banks with a score exceeding the following cutoff scores set by the BCBS are classified as G-SIBs, and will fall into a particular ‘bucket’ requiring them to hold additional Common Equity Tier 1.²⁶⁹ National supervisors may also exercise discretionary ‘supervisory judgment’ to add banks with scores below the relevant cutoff threshold to the list of G-SIBs, subject to meeting certain criteria.²⁷⁰ The FSB’s list of G-SIBs as of November 2014, allocated to buckets corresponding to their additional loss absorbency requirements, is provided below for illustration.²⁷¹

Bucket (Additional Core Equity Tier 1 (CET1) %)	Cutoff score	G-SIBs within each bucket
5 (+3.5% CET1)	530-629	(Empty)
4 (+2.5% CET1)	430-529	HSBC; JP Morgan Chase
3 (+2.0% CET1)	330-429	Barclays; BNP Paribas; Citigroup; Deutsche Bank
2 (+1.5% CET1)	230-329	Bank of America; Credit Suisse; Goldman Sachs; Mitsubishi UFJ FG; Morgan Stanley; Royal Bank of Scotland

"complement those adopted by the Financial Stability Board to establish robust national recovery and resolution regimes and to improve cross-border harmonisation and coordination").

²⁶² G-SIB, [8].

²⁶³ G-SIB, [12].

²⁶⁴ G-SIB, [16].

²⁶⁵ G-SIB, [12].

²⁶⁶ G-SIB, [17].

²⁶⁷ G-SIB, [26]. Banks fulfilling any of the following criteria are included in the sample: (i) banks that the BCBS identifies as the 75 largest global banks, based on the financial year-end Basel III leverage ratio exposure measure; (ii) banks designated as G-SIBs in the previous year (unless national supervisors agree there is a compelling reason to exclude them); or (iii) banks added by national supervisors using supervisory judgment (subject to certain criteria).

²⁶⁸ G-SIB, [18].

²⁶⁹ This requirement is in addition to the CCB and CCCB.

²⁷⁰ G-SIB, [27].

²⁷¹ http://www.financialstabilityboard.org/wp-content/uploads/r_141106b.pdf. The cutoff scores are end-2013 figures per BCBS, ‘The G-SIB Assessment Methodology – Score Calculation’, (November 2014), p. 4.

1 (+1.0% CET1)	130-229	Agricultural Bank of China; Bank of China; Bank of New York Mellon; BBVA; Groupe BPCE; Group Crédit Agricole; Industrial and Commercial Bank of China Limited; ING Bank; Mizuho FG; Nordea; Santander; Société Générale; Standard Chartered; State Street; Sumitomo Mitsui FG; UBS; Unicredit Group; Wells Fargo
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The BCBS will run the G-SIB assessment each year and, if necessary, reallocate G-SIBs into different categories of systemic importance based on their scores.²⁷² National supervisors may impose stricter loss absorbency requirements on their banks than the 1%, 1.5%, 2%, 2.5% or 3.5% buckets listed above. The assessment methodology for G-SIBs will be reviewed every three years to attempt to capture developments in the banking sector and any progress in methods and approaches for measuring systemic importance.

In addition, the framework requires all banks above a certain size (i.e. with a leverage ratio exposure measure > €200 billion) to disclose a set of 12 indicators used in the assessment methodology.²⁷³ Banks below this threshold that have been added to the sample by supervisory judgment or as a result of being classified as a G-SIB in the previous year must also comply with these disclosure requirements.²⁷⁴ This is designed to encourage transparency and incentivise banks to reduce their systemic riskiness.

Domestic-Systemically Important Bank (D-SIB) capital requirements

There are many banks that are not significant from an international perspective, but nevertheless could have an important impact on their domestic financial system and economy in the event of failure compared to other non-systemic institutions. Some of these banks may also generate cross-border externalities in the event of failure, even if the effects are not global in nature.²⁷⁵ The BCBS has therefore also introduced a D-SIB framework, taking a complementary perspective to the G-SIB regime by focusing on the impact that the distress or failure of banks (including international banks) will have on a domestic economy. This is based on assessments conducted by the national authorities who are arguably best placed to evaluate the impact of failure on their own financial systems and economies.²⁷⁶ The BCBS has outlined 12 principles (rather than prescriptive rules) to provide national regulators with the flexibility to implement domestic legislation in this regard, as appropriate.²⁷⁷ These focus on national authorities developing higher loss absorbency (HLA) requirements for their D-SIBs. These principles are provided in the table below for illustration.²⁷⁸

Principle	Explanation
1	National authorities should establish a methodology for assessing the degree to which banks are systemically important in a domestic context.
2	The assessment methodology for a D-SIB should reflect the potential impact of, or externality imposed by, a bank's failure.
3	The reference system for assessing the impact of failure of a D-SIB should be the domestic economy.
4	Home authorities should assess banks for their degree of systemic importance at the consolidated group level, while host authorities should assess subsidiaries in their jurisdictions, consolidated to include any of their own downstream

²⁷² G-SIB, [28].

²⁷³ G-SIB, [42].

²⁷⁴ G-SIB, [42].

²⁷⁵ BCBS, 'A Framework for Dealing with Domestic Systemically Important Banks, (June 2012), [3] (henceforth, 'D-SIB').

²⁷⁶ D-SIB, [4].

²⁷⁷ D-SIB, [11].

²⁷⁸ D-SIB, [10-11].

	<p>subsidiaries, for their degree of systemic importance. This principle has particular relevance for LICs and LMICs, many of which will be host to subsidiaries that are systematically important in their own jurisdictions.</p>
5	<p>The impact of a D-SIB's failure on the domestic economy should, in principle, be assessed having regard to bank-specific factors: (i) size; (ii) interconnectedness; (iii) substitutability/financial institution infrastructure (including considerations related to the concentrated nature of the banking sector); and (iv) complexity (including the additional complexities from cross-border activity).</p> <p>In addition, national authorities can consider other measures/data that would inform these bank-specific indicators within each of the above factors, such as size of the domestic economy. National authorities may choose to also include some country-specific factors,²⁷⁹ and should have discretion as to the appropriate relative weights they place on these factors depending on national circumstances.²⁸⁰</p>
6	<p>National authorities should undertake regular assessments of the systemic importance of the banks in their jurisdictions to ensure that their assessment reflects the current state of the relevant financial systems and that the interval between D-SIB assessments are not significantly longer than the G-SIB assessment frequency.</p>
7	<p>National authorities should publicly disclose information that provides an outline of the methodology employed to assess the systemic importance of banks in their domestic economy.</p> <p>The assessment process used needs to be clearly articulated and made public so as to set up the appropriate incentives for banks to seek to reduce the systemic risk they pose to the reference system.²⁸¹</p>
8	<p>National authorities should document the methodologies and considerations used to calibrate the level of HLA that the framework would require for D-SIBs in their jurisdiction. The level of HLA calibrated for D-SIBs should be informed by quantitative methodologies (where available) and country-specific factors without prejudice to the use of supervisory judgment.</p>
9	<p>The HLA requirement imposed on a bank should be commensurate with the degree of systemic importance, as identified under Principle 5. In the case where there are multiple D-SIB buckets in a jurisdiction, this could imply differentiated levels of HLA between D-SIB buckets.</p>
10	<p>National authorities should ensure that the application of the G-SIB and D-SIB frameworks is compatible within their jurisdictions. Home authorities should impose HLA requirements that they calibrate at the parent and/or consolidated level, and host authorities should impose HLA requirements that they calibrate at the sub-consolidated/subsidiary level. The home authority should test that the parent bank is adequately capitalised on a stand-alone basis, including cases in which a D-SIB HLA requirement is applied at the subsidiary level. Home authorities should impose the higher of either the D-SIB or G-SIB HLA requirements in the case where the banking group has been identified as a D-SIB in the home jurisdiction as well as a G-SIB.</p>
11	<p>In cases where the subsidiary of a bank is considered to be a D-SIB by a host authority, home and host authorities should make arrangements to coordinate and cooperate on the appropriate HLA requirement, within the constraints imposed by relevant laws in the host jurisdiction. This, too, has particular relevance for LICs and LMICs.</p>
12	<p>The HLA requirement should be met fully by Common Equity Tier 1. In addition, national authorities should put in place any additional requirements and policy measures they consider appropriate to address the risks posed by a D-SIB.</p>

²⁷⁹ D-SIB, [22].

²⁸⁰ D-SIB, [27].

²⁸¹ D-SIB, [23].

Criticisms relevant to LIC/LMIC banks and supervisors

Most strikingly, Basel III does not resolve many of the aforementioned adverse consequences and criticisms plaguing Basel II, including its misguided reliance on gameable risk weightings, failing to address arbitrarily low risk weightings and permitting banks to employ gameable internal modeling in their regulatory capital calculations.²⁸² A concern with perpetuating these attributes of Basel II is that the weaknesses it introduced into the global banking and financial system may arise again in the future, including in LICs and LMICs. For example, Basel II incentivised banks to hold greater amounts of low-risk assets (as these attracted minimal capital requirements under Basel II), which helped grow the banking sector's involvement in securitisation transactions and their (ultimately detrimental) reliance on highly credit-rated securitisation instruments. These instruments were subsequently found to be highly exposed to risky or even 'toxic' assets, such as sub-prime securities, and contributed to the severe liquidity issues encountered in the financial crisis.²⁸³ Not only does Basel III not address these weaknesses, it is questionable whether the liquidity measures it introduces can sufficiently counteract them should they arise. LIC or LMIC banks and supervisors should be extremely wary of how their implementation of Basel II and/or III may impose such weaknesses onto local economies.

Basel III's liquidity requirements (LCR and NSFR), and LR (and the G-SIB capital requirement and potential D-SIB capital requirement, where applicable) will impose higher operational costs on all banks, including those with operations in LICs and LMICs, but may not provide much practical benefit to some actors in return. For instance, the CCCB relies on national supervisors accurately anticipating and counteracting credit bubbles that may be forming in a timely and consistent fashion. However, their capacity to execute this function effectively is highly doubtful, and particularly so for supervisors in LICs/LMICs who face significant constraints such as poor financial monitoring infrastructure, insufficient contemporary credit information and resourcing shortfalls. In addition to higher overall costs, LICs and LMICs may also be adversely affected by the perception that they are higher risk jurisdictions. This may take the form of external lenders and banks with LIC/LMIC operations reducing their lending activities to institutions in these countries given their now increased operational costs (or charging higher interest rates to compensate them for the extra operational risk). Furthermore, the LR, CCB and CCCB measures, though intuitively appealing, may produce unintended consequences. For instance, the deployment of the CCCB to counteract excessive credit growth may potentially only ever be used infrequently. However, as internationally active banks' CCCBs are determined by a weighted average of the buffers deployed across all jurisdictions in which they have a credit exposure, this may mean that such banks are subject to at least one CCCB on a more frequent basis, as credit cycles are not always highly correlated across jurisdictions.²⁸⁴ Banks must therefore be cognisant that even if their home supervisor has not imposed a CCCB, they may incur the cost of (at least) one active CCCB requirement more frequently than may first appear depending on the particular jurisdictions in which they operate.

²⁸² Dowd et al, above n. 22, p. 29. See also The Economist, 'Basel III: Third time's the charm?' (13 September 2010).

²⁸³ See The Economist, 'Basel III: Third time's the charm?' (13 September 2010).

²⁸⁴ Basel III, [137].