

# Basel II: A new capital framework

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This article provides an introduction to the new Basel II Capital Framework (Basel II) and the Reserve Bank's approach to its implementation in New Zealand. Bank capital plays an important role in absorbing unexpected losses. Regulators have an interest in the amount of capital held by banks and set some minimum capital adequacy requirements for banks. Basel II replaces the current regulatory requirements and provides a new framework for thinking about capital's role in banking and how capital requirements should be calculated. The main objectives of Basel II are to increase the sensitivity to risk of regulatory capital requirements, and to provide incentives for banks to enhance their risk-management systems and processes. The Reserve Bank is responsible for setting regulatory capital requirements for banks incorporated in New Zealand. For locally-incorporated banks that also have operations overseas, the Reserve Bank liaises closely with the relevant foreign supervisors to ensure a smooth and efficient implementation and operation of the rules in New Zealand.

## 1 An introduction to regulatory capital

### The importance of capital

Capital serves as a buffer against a bank's unexpected losses and as a basis for its medium-term growth. An adequately capitalised banking system that is better able to absorb losses and provide credit to consumers and businesses throughout the business cycle is more likely to promote a sound and efficient financial system and growth in the economy. The challenge for banks and regulators is determining an appropriate amount of capital that should be held against unexpected losses.

Banks would hold capital regardless of any regulatory requirement to do so. Depositors and investors are more likely to lend funds to a bank when they are confident of the bank's ability to absorb unexpected losses, and when they can see that bank owners also have funds at stake in the successful operation of the bank. However, the amount of capital that a bank would hold in the absence of regulatory requirements might be different to the amount of capital that would be optimal for society.

Bank failures can have negative impacts over and above losses for the creditors and shareholders of banks. Banks have an important role in the economy. They are usually the major providers of financial intermediation services<sup>1</sup>

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<sup>1</sup> Financial intermediation refers to the distribution of credit from those who want to lend to those who want to borrow.

and they play a central role in transferring funds between parties through their position in payments systems. The failure of a major bank would have the immediate effect of reducing the availability of credit within the economy, would limit people's access to funds, could put other banks into difficulty, and could lead to a system-wide crisis. System-wide bank crises can have disastrous real and financial effects for an economy. As a result, regulators set minimum capital requirements that take account of the wider adverse externalities that could arise from the failure of a bank, that the bank itself may not take into account.

### Basel I – an international standard for regulatory capital requirements

Prior to 1988, there was no uniform international regulatory standard for setting bank capital requirements. In 1988, the Basel Committee on Banking Supervision<sup>2</sup> developed the Basel Capital Accord (Basel I) to align the capital adequacy requirements applicable to internationally-active banks. Basel I introduced two key concepts.

First, it defined what banks could hold as capital, as well as designating capital as Tier 1 or Tier 2 according to its

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<sup>2</sup> The Basel Committee on Banking Supervision was established by the central-bank governors of the Group of Ten countries at the end of 1974. The Committee does not possess any formal supranational supervisory authority, but encourages convergence towards common supervisory approaches and standards without attempting detailed harmonisation of member countries' supervisory techniques.

Table 1

Basel I regulatory capital calculations

Type of bank asset	90 day govt bill	Residential mortgage	Corporate loan
Asset value	\$100m	\$100m	\$100m
Basel I risk weight	0%	50%	100%
Risk-Weighted asset (asset value * risk weight)	\$0	\$50m	\$100m
Minimum regulatory capital charge (risk-weighted asset * 8%)	\$0	\$4m	\$8m

loss-absorbing or creditor-protecting characteristics. Tier 1 capital, such as common stock and retained earnings, has the highest ranking as it can absorb unexpected losses to a certain level without a significant disruption to trading. Tier 2 capital, such as subordinated debt,<sup>3</sup> does not have loss-absorbing properties but provides some protection to depositors in the event of bank failure because it is the last layer of debt that would be repaid in a bank's insolvency.

The second key concept introduced in Basel I was that capital should be held by banks in relation to the risks that they face. The major risks faced by banks relate to the assets held on balance sheet. Thus, Basel I calculated banks' minimum capital requirements as a percentage of assets, which are adjusted for their riskiness. To adjust assets for their riskiness, risk weights are assigned to assets. Higher weights are assigned to riskier assets such as corporate loans, and lower weights are assigned to less risky assets, such as exposures to government. Banks sum the risk-adjusted assets to calculate a total risk-weighted asset amount.

Basel I then sets banks' minimum total capital requirement (tier 1 plus tier 2) to be at least 8 percent of total risk-weighted assets, at least half of which must be tier 1. Table 1, above, shows the Basel I capital requirements for three types of assets.

Basel I recognised that banks work actively to reduce the risks on their balance sheets by using risk mitigation instruments such as collateral and guarantees, and lowered banks' capital requirements where they held these instruments.

<sup>3</sup> Subordinated debt is a loan (or security) that ranks below other loans with regard to claims on assets or earnings. In the case of default, creditors with subordinated debt wouldn't get paid out until after the senior debt holders (or depositors) were paid in full.

However, Basel I also recognised that banks are exposed to risks that are not represented on the balance sheet. As a result, it specified capital requirements for off-balance sheet risks such as from underwriting commitments.

### Evolving financial markets and risk-management techniques

Basel I has been a successful and widely-implemented standard in banking regulation. However, financial market architecture, activities, and instruments have evolved dramatically over the past two decades. Many major international banks and financial institutions have, over time, developed and adopted more complex methods of managing and measuring risk widening the gap between the simple risk framework of Basel I and the actual practice of some banks.

In response, the Basel Committee, through five years of development and consultation, developed a new capital adequacy framework. In June 2004, the Basel Committee released the Basel II Capital Framework otherwise known as Basel II.

The next section provides an overview of Basel II and, in particular, discusses the mutually reinforcing 'pillars' that make up the Basel II framework.

## 2 The Basel II Capital Framework

Basel I introduced risk-based capital requirements for banks. Basel II builds significantly on Basel I by increasing the sensitivity of capital to key bank risks. In addition, Basel II recognises that banks can face a multitude of risks, ranging from the traditional risks associated with financial

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intermediation, to the day-to-day risks of operating a business, to the risks associated with the ups and downs of the local and international economies. As a result, the new framework more explicitly associates capital requirements with the particular categories of material risks that banks face.

The new capital framework also recognises that large, usually internationally active banks have developed approaches to risk measurement and management based on statistical inference rather than judgement alone. A major development of Basel II is in allowing banks, under certain conditions, to use their own 'internal' models and techniques to measure the major risks that they face, the probability of loss, and the capital required to meet that loss.

In developing the new framework, the Basel Committee wanted to incorporate the many elements that help promote a sound and efficient financial system over and above the setting of minimum capital requirements. With this in mind, the Basel II framework incorporates three complementary 'pillars' that draw on the range of approaches to help ensure banks are adequately capitalised.

- Pillar 1 – **minimum capital requirements** – specifies how banks should determine the capital requirements they should meet for the major risks that they face. These risks include credit risk, traded market risk, securitisation risk, and operational risk.
- Pillar 2 – **supervisory review process** – recognises that banks are ultimately responsible for managing their risks. However, supervisors can play a role in assessing banks' risk management practices, and ensure that the negative externalities that can arise from the failure of a bank are minimised and managed.
- Pillar 3 – **market discipline** – recognises the role played by market participants in 'regulating' bank behaviour, and promotes market discipline through the use of disclosure requirements.

The following sections highlight the importance and interdependencies of the three pillars of Basel II.

## Pillar 1: minimum capital requirements

Pillar 1 constitutes the most substantial part of Basel II. Its primary objectives are to increase the risk sensitivity of capital requirements and align them more closely to the core risks that banks face. These risks include:

- **credit risk**, which refers to the risk of loss arising from a borrower defaulting on their obligations;
- **operational risk**, which is the risk of loss resulting from inadequate or failed internal processes, people, and systems, or from external events;
- **traded market risk**, which refers to the risk of loss from holding financial instruments for trading purposes and arises due to movements in market prices, such as interest rates, exchange rates, and equity values; and
- **securitisation risk**, which refers to the risk of loss associated with buying or selling asset-backed securities.

In addressing each of these core risks, Basel II recognises that financial institutions differ significantly. As a result, Basel II moves away from the 'one-size-fits-all' approach in Basel I and provides banks with the opportunity to apply approaches that correspond to the different business and risk management practices that they employ. For each of the core risks that banks face, Basel II provides 'standardised' and 'internal model' approaches to determine minimum capital requirements. None of the approaches are viewed as necessarily superior or inferior for all institutions. However, a major objective of Basel II is to promote improvements in banks' risk management processes by encouraging banks to develop more sophisticated risk measurement systems and practices where it is cost effective for them to do so. Improvements in banks' risk management processes will, in some cases, lead to lower minimum capital requirements.

The following sections discuss the Basel II approaches to determining the capital required to meet the core risks faced by banks.

## Credit risk

Credit risk is the major risk that most banks must manage during the normal course of lending and credit underwriting. Within Basel II, there are two approaches to credit risk measurement: the standardised approach and the internal-ratings based (IRB) approach.

### *Standardised approach*

The standardised approach builds on the Basel I approach and is the default option for determining minimum capital requirements. The standardised approach retains the relative simplicity of Basel I while increasing the risk sensitivity of regulatory capital requirements.

As with Basel I, the value of a bank's on-and-off balance sheet assets are adjusted by risk weights that are applied according to the riskiness of the underlying assets. To increase the risk sensitivity of the capital requirement, credit ratings from eligible rating agencies (such as Fitch or Standard and Poors), are used to increase the number of risk weight categories applied to the underlying assets, relative to Basel I. In this way the standardised approach differentiates riskiness within asset classes as well as across different asset classes.

Table 2 compares the capital required under Basel II for a corporate loan with varying credit ratings with the capital required for the same loan under Basel I. As can be seen the standardised approach implies a range of capital requirements depending on the riskiness of the loan, as proxied by the credit rating. Higher rated loans have lower capital requirements under Basel II than lower rated loans. The Basel I approach treats all corporate loans the same regardless of rating.

Table 2

Basel I and Basel II standardised approach to measuring the credit risk of a corporate loan

	Basel II				Basel I	
Credit rating	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated	All loans
Asset value	\$100m	\$100m	\$100m	\$100m	\$100m	\$100m
Risk weight	20%	50%	100%	150%	100%	100%
Risk weighted asset	\$20m	\$50m	\$100m	\$150m	\$100m	\$100m
Capital requirement	\$1.6m	\$4m	\$8m	\$12m	\$8m	\$8m

Erratum: Original cited \$6.25m in column 2 last line. Corrected in the online edition 21 February 2012 to figure shown.

The Basel II standardised approach also allows for additional methods of mitigating credit risks. It provides for improved methods of measuring the risks that are mitigated by collateral and allows netting of assets and liabilities in some cases. It also allows credit risks to be mitigated by instruments such as credit derivatives, the markets for which have evolved dramatically over the past 10 to 20 years, and are now commonly used by banks to reduce credit risk.

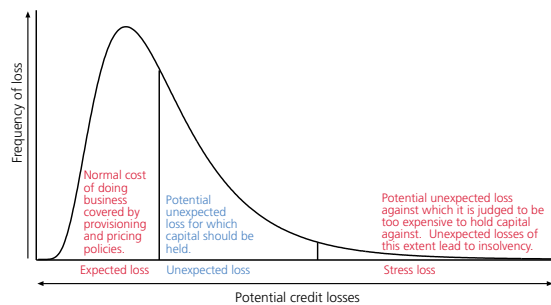
### *Internal-ratings based (IRB) approaches*

The Internal Ratings Based (IRB) approaches represent the major development from Basel I in calculating minimum capital requirements. Over the past decade banks have invested heavily in economic capital models and systems that can better help them identify, measure, and manage the key risks that they face. The capability of modelling techniques has improved to the point that banks use them increasingly to determine internal capital targets, feed in to pricing strategies, assess risks, determine economic value added, and contribute to executive remuneration. The Basel Committee has recognised this development and looked to promote the development and use of these methods, where appropriate, by offering the IRB approaches to determine minimum capital requirements. Banks that apply the IRB approaches will base their minimum capital requirements on their own economic-capital models and systems.

### *Modelling the risk of loss*

Figure 1, overleaf, provides a stylised version of how banks model the probability of loss in their portfolio of exposures. The area under the distribution represents the probability

**Figure 1**  
**Distribution of credit losses (for a given time horizon)**



of loss for a given period and loss size. The distribution is negatively skewed as most credit losses tend to be small, with few very large losses. Two main types of loss are illustrated. Expected loss refers to the normal losses from doing business and is either taken into account in banks' pricing or met through specific provisions held on banks' balance sheets. Unexpected loss refers to the losses not covered by pricing or provisioning. These losses must be absorbed by capital to avoid insolvency and are therefore the losses considered by capital requirements.

It would be unreasonable and overly expensive for banks to hold enough capital to meet all unexpected loss events. Rather, banks hold enough capital to meet unexpected losses up to a given level. Unexpected losses over and above this level are referred to as stress losses and lead to bank insolvency. For Basel II regulatory purposes, banks are required to hold enough capital to meet unexpected losses with a probability of 0.999 over one year. Beyond this minimum required level, the amount of capital a bank will actually hold will depend on its internal risk appetite and market expectations.

Risk parameters help determine the shape and skewness of the density function depicted in figure 1. There are four key risk parameters in Basel II:

- **Probability of default (PD)** refers to the likelihood of a borrower defaulting on a contractual obligation.
- **Loss given default (LGD)** is the proportion of the obligation that the bank expects to lose, in the event of a default.

- **Exposure at default (EAD)** refers to the maximum amount of loss in the event of a default.
- **Maturity (M)** refers to the remaining age of the obligation.

As each parameter increases, the capital required to meet that loss increases.

To determine minimum capital requirements to meet credit risk, banks must categorise the asset side of their balance sheet into five major groups – sovereign, corporate, bank, retail, and equity. Banks apply an internal rating to every exposure within each of these groups, using an array of information such as historical information and borrower characteristics. Ratings are then grouped into 'buckets' and banks use historical default information to assign exposures within each rating bucket with forward-looking cyclically-adjusted estimates of the key risk parameters. Basel II recognises that there are some difficulties in forecasting future events and the influence they will have on a particular borrower's financial condition. As a result, banks must take conservative views of projected information and adopt a conservative bias where data limitations exist.

A bank applying the IRB approach feeds their forward-looking estimates of these risk parameters into the IRB equation (which include the 99.9% probability referred to above) to determine its pillar 1 minimum capital requirements.<sup>4</sup> The IRB equation is based on the conditional probability of default of a single borrower with normally distributed asset returns. Based on figure 2, this is obviously not the ideal theoretical construct. However, it does reflect the realities of estimating capital requirements for regulatory purposes across many different banks.<sup>5</sup> Any risks associated with the assumptions underlying the IRB equation are considered as part of the supervisory review process outlined in pillar 2.

<sup>4</sup> Basel II offers two IRB approaches. The foundation IRB approach requires banks to provide PD estimates only (the other risk parameters are provided by the framework), while the advanced IRB approach requires bank estimates of all the risk parameters.

<sup>5</sup> See Thomas and Wang (2005) for a discussion on the theoretical and institutional background to the IRB equation.

### Validation and accreditation requirements

The Basel II framework recognises that banks using advanced credit risk measurement techniques apply a variety of internally-developed or 'off-the-shelf' models and processes to determine their key risk parameters. Consequently, given the potential for differences across banks and the importance of estimating adequate minimum capital requirements, banks wishing to implement the IRB approach must first apply to regulators for accreditation to do so. To be accredited to use the IRB approaches, banks' internal risk measurement methodologies must meet a number of strict quantitative and qualitative requirements. These include:

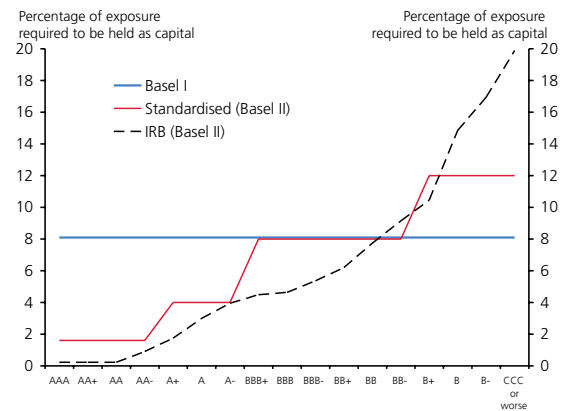
- an appropriately risk-sensitive internal rating system, which comprises the methods, processes, controls, data collection, and IT systems that support the assessment of credit risk and the quantification of default and loss estimates;
- facilities that capture borrower characteristics and sufficient default information to determine the estimates of the key risk parameters to within statistical confidence levels;
- appropriate corporate governance and internal controls;
- a modelling and capital estimation process that is embedded into the day-to-day operations of the bank; and
- a validation and testing procedure that ensures the bank is confident that their approach produces the appropriate PD, LGD, EAD and capital estimates to address their credit risks.

### Increased risk sensitivity

The IRB approach further increases the risk sensitivity of the capital requirements compared to both Basel I and the standardised approach. Figure 2 illustrates the different capital requirements for the corporate loan examined in table 2 under Basel I and the two Basel II approaches. Under Basel I, the total capital charge is a uniform 8 per cent across all rating groups. Under Basel II, capital requirements reflect the riskiness of the loan. The IRB approach is the

Figure 2

### Capital requirement for a corporate loan under Basel I and Basel II



most risk sensitive of the approaches and generates 'smoother' changes in the total capital requirement than the standardised approach.

### Operational risk

Operational risk is the risk of loss resulting from inadequate internal processes, people, and systems, or from external events. A good example of an operational loss event could be the collapse of Barings Bank in 1995 as a result of internal control failures and massive speculative trading losses. Operational risk itself is not a new concept, and well-run organisations have been addressing it in their internal controls and corporate governance structures. However, applying an explicit regulatory capital charge against operational risk is a relatively new and evolving idea. Basel II requires banks to hold capital against the risk of unexpected loss that could arise from the failure of operational systems. As for credit risk, the framework provides simple and complex approaches to determine operational risk capital requirements.

### The standardised approaches

There are a number of standardised approaches that calculate operational risk capital as a proportion of bank income (the basic indicator approach and the standardised approach), bank assets, or a combination of both (the alternative standardised approach). The rationale behind the simple approaches is that as a bank increases in size (represented by

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balance sheet or income growth), operational risk increases and therefore operational risk capital should increase proportionately. The main advantage in applying these approaches to determine operational risk capital is their simplicity, and they are therefore targeted at banks applying the standardised approach to credit risk.

### *The advanced measurement approach*

Similarly to the IRB approaches to credit risk, the advanced measurement approach (AMA) measures capital charges for operational risk based upon risk parameters from a bank's internal operational risk measurement system. Under this approach, minimum capital requirements depend on a bank's internal loss estimates. As with the internal model approaches to credit risk, banks must fulfil qualitative and quantitative requirements before they are eligible to use the AMA.

The Basel Committee and most regulators view that the estimation of operational risk capital using the AMA is still undergoing significant development. Indeed, a few regulators have not made the AMA available to banks operating within their jurisdiction, preferring to wait until there is evidence that statistical techniques will produce the appropriate loss estimates. In jurisdictions where the AMA is being made available to banks, it is typically being restricted to those banks applying the IRB approaches to credit risk.

### **Traded market risk**

Traded market risk refers to the risk of loss from holding financial instruments for trading purposes, and arises due to movements in market prices, such as interest rates, exchange rates, and equity values. In 1996 the Basel Committee released the Market Risk Amendment, which expanded Basel I to set minimum capital requirements for the various market risks that banks face. The Market Risk Amendment

was in response to the increased trading activity by banks and the additional risk that this introduced.<sup>6</sup>

Basel II does not depart substantially from the Market Risk Amendment. Banks can use a standardised approach, which applies risk weights to open positions, or their own internal models<sup>7</sup> to determine the minimum capital requirement. The main focus of Basel II is on ensuring that open positions in banks' trading books can be valued appropriately. In particular, financial products should be marked to market or, where necessary, to demonstrably prudent models.

### **Securitisation risk**

Securitisation is a process whereby a pool of similar loans (eg, residential mortgages) or other financial assets is packaged and sold in the form of marketable securities. Securitisation risk may arise from any of the following sources:

- the risk from holding a security where the return is related to credit risk of the underlying assets that back the security;
- any residual credit risk that is not transferred off the originating bank's balance sheet, or that could be reinstated as a result of insufficient legal protection from the default of the underlying assets.

### *Treatment of securitisation exposures*

As with the other pillar 1 risks, Basel II provides two broad approaches to measuring securitisation exposures: the standardised and ratings based approaches.

Banks that apply the standardised approach to measuring credit risk must also apply the standardised approach to measuring securitisation risk. The approach is similar to the standardised approach, whereby the minimum capital requirement is determined by risk weights that are applied to the held securities depending on the credit rating of the securitisation issue.

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<sup>6</sup> The Reserve Bank does not currently require capital to be held against traded market risk. Rather, banks must disclose information about their market risk exposures in their quarterly disclosure statements.

<sup>7</sup> Under the internal models approach, 'value-at-risk' must be computed on a daily basis using a 99th percentile, one-tailed confidence interval. In calculating value-at-risk, an instantaneous price shock equivalent to a 10 day movement in prices is used.

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Under the internal-ratings based approach, banks use a similar but slightly more complex approach than the standardised approach for securities that have external or inferred ratings. Where these ratings are not available, banks can use their own internal assessments of the credit quality of the underlying exposures. Only banks that have received supervisory approval to use the IRB approach to credit risk can apply the internal models based approach to determine the credit risk associated with the exposure to a security.

### ***Recognising risk transference***

Basel II specifies a number of conditions that a bank must meet before it can transfer credit risk from its balance sheet as a result of selling securities. These include evidence of the transference of significant credit risk to third parties, and that the bank does not maintain effective or indirect control over the transferred exposures.

### **Pillar 2: Supervisory review process**

Whereas pillar 1 of Basel II addresses the core risks (credit, operational, traded market, and securitisation) that a bank faces, the main intention of the supervisory review process is to ensure that banks have adequate capital to support all of the material risks in their business.

Pillar 2 recognises that bank management is ultimately responsible for the business decisions that they make, and for ensuring that the bank is adequately capitalised to support its risks beyond the core minimum requirements covered in pillar 1. Consequently, the first stage of pillar 2 is for banks to develop a process that sets internal capital targets that are commensurate with their entire risk profile (including those identified as pillar 1 risks) and their control environment.

Pillar 2 also recognises that supervisors monitor individual bank capital adequacy because of the wider implications of a bank failure. As a result, supervisors may want to evaluate how banks assess their capital needs relative to their risks, and to intervene where appropriate. This interaction is intended to foster an active dialogue between banks and

supervisors such that when deficiencies are identified, banks take prompt and decisive action to reduce risk or restore capital.

Basel II sets out four guiding principles that provide the framework for the supervisory review process:

- i. Banks must have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.
- ii. Supervisors should review and evaluate banks' internal risk assessments and strategies and should take appropriate action if the results of this process are not satisfactory.
- iii. Supervisors should expect banks to operate above the minimum regulatory capital ratios
- iv. Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the bank's risk characteristics.

Implicit in the first principle is that all material risks faced by a bank should be addressed by the bank. The supervisor acts when capital is clearly below the minimum levels required to support all of the material risk characteristics of the bank. Three material risk characteristics that supervisors will pay particular attention, and that will be particularly suited to treatment under pillar 2 are considered below.

### ***Risks considered under pillar 1 that are not fully captured by the pillar 1 process***

There are likely to be residual pillar 1 risks resulting from the measurement methods used by banks. A good example is credit-concentration risk, which refers to the risk of loss due to the exposures in a portfolio being closely related or positively correlated. There are two main risks associated with credit concentration. The first is that borrowers in a concentrated portfolio tend to survive and fall together resulting in PDs and LGDs that cannot be considered independently. The second risk is that a portfolio with similar types of assets may not possess the characteristics for modelling techniques to work adequately.

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Supervisors will also be interested in the approach taken by banks to meet model risks – those risks due to the underlying assumptions made by banks’ own models as well as the underlying assumptions made in the construct of the IRB equation. Supervisors would expect banks to take a conservative approach to capital calculations where there were concerns about the robustness of model assumptions.

#### ***Bank risks that are not taken into account by the pillar 1 process***

Whereas interest rate risk in the trading book is considered under pillar 1, in many cases interest rate risk in the banking book (IRRBB) is just as important. IRRBB is included within the supervisory review process as the Basel Committee believes that the variation of methods used by banks to model IRRBB makes it too difficult to include alongside other pillar 1 risks. However, Basel II does provide guidance to banks and supervisors that relate to the ability of bank models to include all material interest rate positions and to consider all relevant repricing and maturity data.

#### ***Risk factors that are external to the bank***

The business cycle can have a number of effects on banks’ capital requirements. Firstly, Basel II requires banks’ estimates of the key risk factors to reflect the ability of borrowers to perform over an entire business cycle and not just the current or most recent economic period. Where risk factors are derived from historical information that does not contain at least one full cycle, minimum capital requirements will need to be adjusted accordingly.

Similarly, banks should take into account the likelihood that recovery values for liquidated assets during an economic downturn are likely to be lower than normal and lead to higher or ‘stressed’ LGDs. Including a stressed LGD analysis through pillar 2 could potentially increase banks’ capital requirements.

The nature of the tail of the loss distribution shown in figure 1 could be considered under pillar 2. Supervisors are particularly interested in the types of events that could lead to unexpected losses over and above those covered by

capital and that result in bank failure. A useful method of doing this is to stress-test banks’ capital levels and the 0.999 confidence interval included in the IRB equation. The main goal of stress-testing is to investigate the ability of banks to absorb potential losses that may arise from a set of extreme but plausible shocks. Supervisors might require additional capital to be held if banks were not resilient to realistic macroeconomic stress events.

While the pillar 1 framework for determining capital requirements is relatively advanced, regulators are still working hard to develop the supervisory review process and in particular how pillar 2 capital requirements will be determined. Ongoing work in the areas identified above will shed more light as to how pillar 2 risks will be determined.

#### **Pillar 3: Market discipline**

Market participants have an interest in ensuring banks are adequately capitalised and through their actions can encourage the bank to behave prudently. This is often referred to as market discipline. In developing the Basel II framework, the Basel Committee decided to incorporate a greater role for market discipline by introducing capital adequacy-related public disclosure requirements for banks.

The objectives of market disciplines are reasonably straightforward. In a well-functioning market, financial institutions with poorly developed risk management structures tend to be penalised by the market through higher funding costs because the banks’ counterparties assess the institution as more risky, while those with prudent risk management structures tend to be rewarded.

A key component in promoting market discipline in this context is ensuring that bank customers, institutions, and other market participants have ready access to the appropriate information that allows them to monitor bank performance and risk-taking. Pillar 3 achieves this by requiring banks to disclose, on a timely basis, relevant quantitative and qualitative information relating to the nature of their risks, their risk measurement processes, and their capital adequacy.

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Market discipline is one of the cornerstones of the Reserve Bank's approach to bank regulation, and disclosure is not a new concept for banks operating in New Zealand. For a number of years, banks that have a New Zealand presence have been required to make comprehensive quarterly financial and prudential disclosures to the market. As a result, the pillar 3 requirements sit well with the New Zealand regulatory approach.

### 3 The RBNZ's approach to Basel II

The Reserve Bank exercises its banking regulation powers for the purposes of promoting the soundness and efficiency of the New Zealand financial system and of avoiding significant damage to the financial system that could result from the failure of a bank. Specifying minimum capital requirements for locally-incorporated banks is a key regulatory tool used by the Reserve Bank to achieve these objectives and the Reserve Bank currently requires banks to meet most Basel I requirements.

The Reserve Bank will be updating its capital rules to take account of Basel II. However, as it is up to each regulator to determine how it will implement the guidelines provided by the Basel II framework and the Reserve Bank is still developing the details of how Basel II will be implemented in New Zealand, this section provides only a high-level discussion on implementation in New Zealand. A more detailed discussion will be provided in forthcoming articles.

#### Implementation intentions

The Reserve Bank will seek to implement Basel II in a way that promotes the basic principles of its capital adequacy regime. These principles include:

- that the level and quality of capital that banks must hold for times of stress should be conservative;
- that capital adequacy rules for all banks should be simple and uniform to the greatest extent possible; and
- that bank directors and senior management should face appropriate incentives to manage their bank's risks effectively.

Within these guiding principles, the Reserve Bank will make available all approaches under the Basel II Framework. However, the approaches based on banks' internal risk modelling (ie: IRB for credit risk and AMA for operational risk) will be available only to banks that meet certain minimum requirements.

#### Implementation timelines

The Reserve Bank will require locally-incorporated banks to apply its Basel II capital adequacy rules in New Zealand from January 2008. This timing is similar to the Basel Committee's recommendation for G10 countries, though a year later than the recommended implementation date for the standardised approaches. The common implementation date for all banks, including those applying the standardised approach, recognises the advantages of having a common implementation date for all banks and of allowing banks planning to use the standardised approaches extra time to prepare.

As Basel II will be implemented on a consolidated basis across international borders, this will mean that in some cases the timing of Basel II implementation by foreign-owned banks will be driven by the objectives of the parent bank or the home regulator. In these circumstances the Reserve Bank will consider, on a case-by-case basis, whether a later implementation date in New Zealand is appropriate.

Banks planning to use the internal models approaches will need to do a 'parallel run', where they will be required to produce Basel II capital calculations while continuing to meet their existing Basel I capital requirements. The parallel run provides the Reserve Bank and participating banks to get an indication of the overall effects that the internal models approaches will have for pillar 1 capital requirements. The Reserve Bank will require a one-year parallel run period starting from January 2007 for locally-incorporated banks applying for accreditation to use the internal model approaches in July 2006.

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## Coordination with foreign supervisors

As was the case under Basel I, under Basel II, group capital requirements for internationally-active banks are determined on a consolidated basis while capital requirements for locally-incorporated subsidiaries are determined on a legal entity basis. As the majority of banks in New Zealand are parts of banking groups with operations in a number of countries, the interaction of group and local bank capital adequacy rules will be particularly important. The successful implementation of Basel II in New Zealand will therefore require liaising with the relevant foreign supervisors to ensure the smooth implementation of Basel II for such banks.

In particular, the four largest banks in New Zealand – Westpac, ANZ National Bank, BNZ and ASB—are all owned by banks based in Australia, and the Australian banking group is supervised by the Australian Prudential Regulation Authority (APRA). As a result, the Reserve Bank and APRA intend to work closely throughout the Basel II implementation process. To facilitate, a Terms of Engagement between APRA and the Reserve Bank for coordinated implementation and ongoing banking supervision under Basel II has been developed. The Terms of Engagement outlines some high-level principles for the cross-border implementation of Basel II in Australia and New Zealand. In particular:

- the Terms of Engagement recognises APRA's rights as home supervisor for Australian banking groups to set minimum levels of capital on a consolidated basis for Australian banking groups with operations in several jurisdictions;
- the Terms of Engagement recognises the Reserve Bank's rights as host supervisor for foreign-owned banks incorporated in New Zealand to set minimum levels of capital for the New Zealand incorporated operations; and
- the Terms of Engagement optimises the use of supervisory resources and reduces compliance costs to the extent possible, subject to adequate supervisory review of capital adequacy at the consolidated and the subsidiary levels.

The ToE also includes a commitment to use each supervisor's comparative advantage and knowledge base when

undertaking supervisory reviews of banks operating in both jurisdictions, and aims to enhance the efficiency of supervision by APRA and the Reserve Bank by sharing information and assessments needed for the purposes of supervisory review.

## 4 Conclusions

Bank capital is a key contributing factor to a sound and efficient financial system and everyone has an interest in ensuring banks hold sufficient levels of capital.

The Basel II Capital Framework provides a new and improved way of thinking about risk measurement, management, and capital adequacy for banks. Its primary objectives are to utilise developments in risk measurement methods to improve the risk sensitivity of capital charges, and to better align banks' capital requirements with the risks that they face. To do this Basel II draws on mutually reinforcing pillars. These pillars include the mechanics of calculating minimum capital requirements for core bank risks (pillar 1), the roles banks and supervisors have in ensuring banks hold enough capital to meet material risks (pillar 2), and encouraging market discipline by specifying disclosure requirements (pillar 3).

The Reserve Bank is responsible for setting bank capital requirements and implementing Basel II in New Zealand. Implementation plans are well in train and future articles will shed more light on the Reserve Bank's approach to implementing Basel II in New Zealand.

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