Chapter 2

Current issues in banking supervision

This chapter reports on the key supervisory and regulatory developments during 2008, with specific focus on the revised regulatory and supervisory approach adopted by the Department subsequent to the implementation of Basel II. This includes the use of external audit; the ICAAP, focused or thematic reviews performed in respect of credit risk, market risk and operational risk; and the processing of applications by banks to use the advanced approaches to calculate their minimum capital requirements in respect of credit risk and operational risk. The assessment of boards' involvement in the oversight of banking institutions' operational risk framework is discussed, as well as consolidated supervisory developments and stress testing in respect of the South African banking system.

Revised regulatory and supervisory approach

Use of external auditors

accuracy and completeness of returns submitted

The implementation of Basel II resulted in a material revision of the information being submitted to the Department in terms of the regulatory returns prescribed by the Regulations relating to Banks. In line with Principle 20 of the Core Principles, one of the specific tools applied by the Department to determine the accuracy and completeness of returns submitted by banks, as well as to determine banks' level of compliance with the Banks Act and the Regulations relating to Banks, is the submission by the banks' external auditors of audit reports in terms of regulation 46 of the Regulations relating to Banks.

The Department commissioned an interim review by external auditors of banks' regulatory returns as at the June 2008 reporting month, to assess and report on the quality of banks' reporting to the Department. The reports were submitted during the fourth quarter of 2008 and they will enable the Department to follow up on critical reporting issues.

need for quality external audits to enhance supervision and market confidence

Furthermore, during December 2008, the Basel Committee released a publication[1] on the use of external auditors, which highlights the need for quality external audits to enhance supervision and market confidence. The paper summarises the steps that the Basel Committee plans to take regarding the following key issues:

- The increase in bankers' and supervisors' reliance on external auditors' expertise and judgements
- Enhanced market confidence resulting from high-quality audits, particularly in times of severe market stress
- An increase in the reliance on high-quality bank audits to complement supervisory processes
- The contribution that the globalisation of major external audit firms has made to the complexity of their structures and a lack of transparency regarding their governance.

The Department will monitor the outcome of the Basel Committee's work closely and align its efforts with the published outcomes.

Internal capital-adequacy assessment process

Introduction

banks required to perform ICAAPs

In terms of the Banks Act, banks are required to maintain, at all times, overall financial resources that are adequate in respect of both amount and quality to ensure that the risk that they cannot meet their liabilities as they fall due is minimised.

The adequacy of a bank's capital needs to be assessed by both a bank and the Department. In terms of the Banks Act and the Regulations relating to Banks,
- banks are required to perform an ICAAP; and
- the Department is required to perform a SREP.

Amendments to the regulatory framework

The process of incorporating Basel II into the regulatory framework included amendments to accommodate Pillar 2 requirements relating to capital management, ICAAP assessments and updating of the SREP. Most of the amendments relating to Pillar 2 are captured in regulation 39 of the Regulations relating to Banks.

Previous reviews/work undertaken

individual thematic reviews

Prior to the ICAAP reviews undertaken in 2008, thematic fact-finding reviews took place during 2006 and 2007. The purposes of these reviews were to
- gain an understanding of how banks perceived economic capital;
- gain an understanding of the level of development of banks' ICAAPs; and
- discuss, with banks, the Department's expectations and banks' concerns with regard to an ICAAP.

These reviews were undertaken at the five largest banks in South Africa.

For the smaller banks, individual thematic reviews have proven to be difficult. Consequently, the Department decided to facilitate an ICAAP workshop to discuss expectations and concerns with regard to ICAAPs for these banks. During 2009 the focus will shift to the review and development of ICAAPs for smaller banks.

ICAAP reviews: Key challenges faced by the Department

ICAAP reviews are "new"

review of banks' ICAAPs new

From a supervisor's perspective, prior to the implementation of Basel II, no ICAAP reviews had been undertaken. The review of banks' ICAAPs was, therefore, a new area that required innovative thinking. In addition, and for the same reason, limited global guidance was available.

The pre-ICAAP reviews undertaken in 2006 and 2007, therefore, played a central role in developing the Department's understanding of the subject matter, as well as informing banks what would be required of them. These reviews also contributed to the development of successful training interventions.

Training of the Department's staff

In order to upskill the Department's staff on the technical aspects of ICAAP, training had to be provided. International specialist consultants were contracted to provide training, and a successful training programme was undertaken and completed during February

2008. A key focus was that of tailoring the training to South Africa-specific needs and the country's SREP process.

Internal capital-adequacy assessment process reviews undertaken

initial focus on five largest banks

Following the development of the regulatory framework and the completion of training, formal ICAAP reviews commenced with an initial focus on the five largest banks in South Africa, representing 89,8 per cent of the South African banking-sector's assets at the end of December 2008.

Conclusions from the formal ICAAP reviews

differences between banks' approaches

It is clear from the ICAAP reviews undertaken in 2008 that the banking industry expended a significant amount of resources (i.e., effort and money) on the implementation of their economic capital frameworks and the development of their ICAAPs. When the results of the Department's initial ICAAP reviews undertaken during 2006 are compared with the reviews undertaken in 2008, it is clear that the industry has made significant progress. There were, however, substantial differences between banks' approaches and best practice standards applied with regard to specific elements of the economic capital frameworks and ICAAPs.

Future work to be undertaken

future work

Future work will focus on the following areas:

1. Initial ICAAP reviews were more holistic in nature and the intention is to focus on thematic reviews
2. Smaller locally registered banks will be subjected to the ICAAP review process during 2009
3. The ICAAP review process in respect of branches of international institutions is likely to commence during 2010.

Credit risk

more sophisticated approach to credit risk

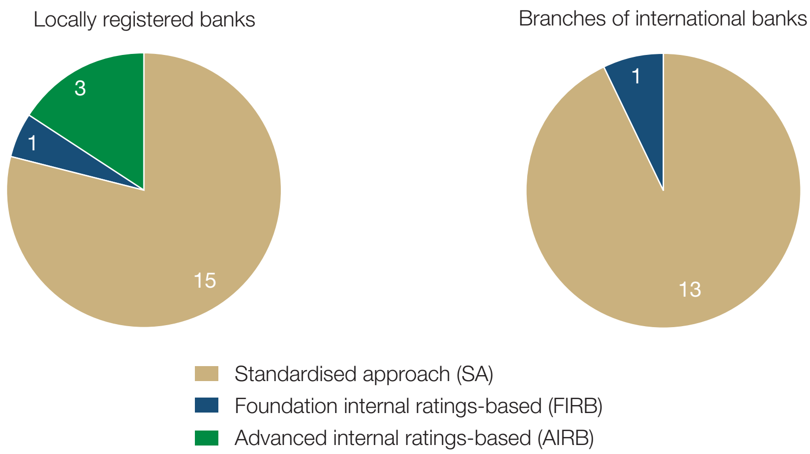
The introduction of Basel II, with its more sophisticated approach to credit risk, including the potential for banks to use models to calculate regulatory capital, combined with macroeconomic events of the past year placed significant demands on resources. Although South African banks have not experienced the same magnitude of impact as a result of the global financial market turmoil and downturn in economic conditions as banks in other parts of the world, the Department continued to monitor the impact of market conditions on South African banks' credit risk profiles and portfolios through quantitative analysis and focused reviews. Methodologies underpinning both quantitative analysis and focused reviews are aligned with Basel II and the Core Principles.

One of the main objectives of Basel II is that the level of regulatory capital held by banks should be commensurate with the risks involved in their businesses and should reflect how well those risks are managed. Under Pillar 1, banks in South Africa could implement the following approaches to determine the minimum required regulatory capital relating to credit risk with effect from 1 January 2008:

- The standardised approach (SA)
- Foundation internal ratings-based (FIRB) approach
- Advanced internal ratings-based (AIRB) approach.

South African banks implemented the following approaches:

Figure 1 Locally registered banks and branches of international banks as at December 2008



Quantitative analysis

appropriate analytical tools

To optimise the use of information available, quantitative analysis makes use of appropriate analytical tools and performs sectoral reviews on a regular basis. A rigorous process was followed by the Department for the development of reports containing key information depicting trends and peer-group analysis. In-depth working sessions were also held with selected banks to enhance the quality of internally developed management information reports.

Furthermore, quantitative analysis is used by the Department as a base for providing guidance or input in respect of identified uncertainties and inconsistencies in regulatory reporting with a view to enhancing the quality of statutory reporting.

Focused reviews of internal ratings-based requirements

focused reviews of banks' portfolios

In terms of the amended Regulations relating to Banks, which became effective on 1 January 2008, the Department expanded its supervisory activities to include focused reviews of banks' portfolios for which permission was granted by the Registrar to adopt the internal ratings-based (IRB) approaches to calculate their minimum required capital and reserve funds related to credit risk. Focused on-site reviews were held at all five of the banks that had obtained approval from the Registrar to adopt the IRB approaches.

The Department follows a risk-based approach in selecting portfolios to be reviewed. All asset classes are, however, assessed and analysed on an ongoing basis. Focused reviews commenced during the second quarter of 2008, and spanned selected retail and wholesale portfolios.

scoping on-site reviews

The prioritisation process for scoping on-site reviews is based on the elements outlined on the following pages.

Capital impact assessment

This step entails the assessment of the change in regulatory capital (e.g., with the change from the 1988 Basel Accord (Basel I) to Basel II or when a bank migrates from a simple approach, such as SA to a more advanced approach such as AIRB), to understand capital movements over time. An understanding of any significant changes in regulatory capital for each asset class needs to be obtained. During 2008, this was achieved by mining the data submitted by banks through various quantitative impact studies (QISs), regulatory reporting by banks during the parallel-run period and, finally, the reporting of risk and financial information on the required regulatory returns as from the reporting month of January 2008.

Model Monitoring System

purpose of the Model Monitoring System

A statistically based system was developed internally using information submitted by banks through the regulatory returns. The purpose of the Model Monitoring System (MMS) is to monitor the performance of banks' IRB credit models and includes the assessment of the following:

- Growth in portfolio assets
- Parameter outliers such as probability of default (PD), loss given default (LGD), exposure at default (EAD), and expected loss compared to peer groups and each bank's own historical trend
- Extent to which ratings are concentrated in particular rating grades
- Model performance tests for stability and accuracy of ratings.

Qualitative overlay

This prioritisation process takes account of various qualitative factors identified during the normal course of discharging supervisory responsibilities. Qualitative issues pertinent to each bank were identified to focus the reviews at banks and comprised, *inter alia*, the following:

- Concerns identified by the relationship team in the Department in their frequent interactions with the banks they supervise
- Issues arising from previous supervisory cycle work
- Matters that arose from the assessment of banks' modelling during the IRB application process.

Self-assessment templates submitted by banks

self-assessment templates completed by banks

As part of the IRB approval process and associated ongoing monitoring, the Department developed a series of self-assessment templates to be completed by a bank assessing its own compliance with the minimum IRB requirements. The template provides a standard and consistent manner in which banks' compliance with the Regulations relating to Banks could be assessed.

The Department received the first submission of the self-assessment templates from banks on 31 May 2008. The self-assessment templates of each of the IRB banks were assessed, reviewed, and gaps and exceptions were identified. The Department defined a 'gap' as a specific area where it believed that the information provided in the self-assessment templates was either incomplete or not completed at all. Exceptions were areas where banks indicated their level of non-compliance with the Regulations relating to Banks. All exceptions to the Regulations relating to Banks were classified as either major or minor. In instances where exceptions were noted, banks were required to provide project plans and target dates for compliance with the Regulations relating to Banks.

Identified gaps

The following gaps were identified:

- In some instances banks did not pay sufficient attention to certain schedules of the templates, for example, some banks did not provide the required information on exemption waivers and extensions of the IRB roll-out within the banking group
- In other instances internal audit functions of banks neglected to complete the relevant schedule of the self-assessment templates requiring assurance of the work performed to date by the business units and risk management
- Some internal audit functions did not provide the audit status of their work completed and planned to date
- In some instances banks left certain sections of the templates unanswered.

Common exceptions in the self-assessment templates included the infancy of banks' capital-adequacy stress-testing processes.

The gaps and exceptions identified through the self-assessments will be addressed with the applicable banks as part of the Department's ongoing supervisory process.

The implementation of new or revised models and rating systems

implementation of new credit models

This step requires the Department's review of new or revised models and rating systems that were not reviewed as part of the original IRB application process. Banks that applied the advanced approaches were required to submit their own governance processes for the approval of new credit models to be used for regulatory capital purposes, accompanied by their communication policy with the Department in respect of the aforementioned. This process ensures that any material model changes are appropriately assessed by the Department without causing undue hindrance to banks' implementation of new or improved credit models.

technical reviews held

Technical reviews were held with model development staff, independent model validation units, internal audit functions and representatives of business units of the portfolios assessed. The reviews included the assessment of the following:

- The model-build documentation.
- Assumptions and methodologies applied.
- Independent model validation results.
- Management information reports tracking the ongoing performance of credit models.
- Findings of internal audit in respect of credit models used for regulatory capital purposes. Internal audit findings on rating systems in use ranged in some banks from process reviews only to in-depth technical challenge and review of IRB parameters at other banks.

Common findings of internal ratings-based reviews

weaknesses were identified

Banks were mainly in compliance with the minimum IRB requirements. The following weaknesses were identified for the attention of banks' management:

- *Staff retention:* Quantitative skills are a scarce commodity in South Africa. The Department noted the migration of model development and validation staff between the different banks. The impact was more visible at some banks than at others.

- *Model developments and recalibrations:* During the Department's ongoing engagement with banks during 2008, it observed that some banks made material changes to their models and methodologies without engaging with the Department. This led to the implementation by the Department of an amended system for model assessment and approval.

- *Ongoing monitoring of credit models:* Banks were in the process of continually improving and enhancing their management information relating to the ongoing monitoring of the performance of credit models.

- *Data cleansing:* In order to improve the quality of data that feed into the IRB credit models, data-cleansing projects received banks' further attention during 2008. In some cases banks appointed dedicated staff to oversee these separate projects.

- *Annual validation of models*: During on-site reviews the importance of annual validation was stressed, and in some instances banks were requested to improve their efforts and resources to ensure that this could be undertaken effectively.

Focused reviews of the standardised approach requirements for credit risk

assessment of accuracy of risk weights

During the last quarter of 2008, the Department commenced focused on-site reviews of those banks that had adopted SA to calculate their minimum required capital and reserve funds relating to credit risk. These reviews were risk-based and focused on banks' compliance with the minimum requirements of the provisions of the Regulations relating to Banks. More specifically though, the reviews included the assessment of the accuracy of risk weights applied in the calculation of banks' minimum required capital and reserve funds related to credit risk, the assessment of the eligibility of credit risk mitigation instruments recognised and the reasonableness of credit risk classifications.

Banks were generally in compliance with the Regulations relating to Banks. In those instances where non-compliance was observed, the respective issues were communicated to the management of the relevant banks for their attention and those issues are in the process of being addressed by the banks concerned.

Credit risk capital impact and credit quality outcomes

reduction in risk-weighted assets

A reduction in risk-weighted assets in respect of credit risk, from Basel I to Basel II, for retail exposures was mostly evident in retail mortgages, and vehicle and asset finance exposures. The aforementioned decrease could be attributable to the following:

- Lower risk weight assigned to qualifying residential mortgages in terms of SA, which changed from 50 per cent under Basel I to 35 per cent under Basel II
- Recognition of physical collateral and its eligibility for capital reductions under the IRB approach for Basel II, which was not available under Basel I.

A reduction in risk-weighted assets in respect of credit risk for wholesale-type exposures (e.g., corporates and banks) was also evident mainly owing to the following:

- Change of the Basel I 100 per cent standard risk weighting for all corporate exposures. Under SA for Basel II, risk weightings for wholesale exposures are dependent on the ratings assigned by eligible credit assessment institutions, which may range from a 50 per cent risk weighting assigned to an A+ international scale rating for a corporate exposure, to a 150 per cent risk weighting assigned to a rating

below B-. The average risk weightings assigned to corporate exposures under the IRB approach varied between 53 per cent and 60 per cent during the period under review.
- Recognition of physical and financial collateral as credit risk mitigants.

Credit quality for retail exposures had been on a deteriorating trend during 2008 as is evident in Figures 41 and 42 (see Chapter 4 of this report). The Department focused on monitoring impaired and defaulted advances within portfolios, as well as on security values and their impact on LGD estimates and adjustments. Focused reviews and other interactions with banks highlighted signs of early stress in certain industries of the banks' corporate exposures.

Areas of focus during 2009 based on the fundamental weaknesses revealed by the financial market crisis

strengthen capital buffers

During 2008, the Basel Committee announced a comprehensive strategy[2] to address the fundamental weaknesses revealed by the financial market crisis related to the regulation, supervision and risk management of internationally active banks. The primary objective of the Basel Committee's strategy is "to strengthen capital buffers and help contain leverage in the banking system arising from both on- and off-balance sheet activities".

The key building blocks of the Basel Committee's strategy that the Department will consider and incorporate in its risk-based supervisory framework from a credit risk perspective are the following:

- Building additional shock absorbers into the capital framework that can be drawn on during periods of stress and dampen procyclicality
- Evaluating the need to supplement risk-based measures with simple gross measures of exposure in both prudential and risk management frameworks to help contain leverage in the banking system
- Leveraging Basel II to strengthen risk management and governance practices at banks
- Strengthening counterparty credit risk capital, risk management and disclosure at banks.

Operational risk

The latest amendments to the Banks Act and the Regulations relating to Banks include requirements for risk management and public disclosure, as well as a regulatory capital charge for operational risk.

operational risk permeates all aspects of the risk universe

Operational risk is not a negligible factor in the field of financial services. It permeates all aspects of the risk universe, that is, operational risk overlaps and exacerbates all other types of risks, such as market, credit, liquidity and underwriting risk.

In its intermediary function as both borrower and lender, a bank has a central role to play in the allocation of capital in an economy. Therefore, the risk of mistakes, incompetence, criminal tendencies, loss or unavailability of employees, diverse process mistakes (e.g., account entries, settlement and valuation) or failure of technical systems, and the dangers resulting from external factors, such as violence and white-collar crime, physical threats or natural disasters and legal risks, have potential consequential effects. This potential is compounded by the increasing complexity of banking, for example, the uncertain role of information technology (IT) in overcoming old risks and creating new ones; the expanding and changing business activities of banks; progressive globalisation and automation; and more complex financial products (e.g., securitised products, credit derivatives and structured products).

Prominent international cases from the recent past illustrate how banks experience material, financial and/or reputational losses, which could threaten their existence when operational risks materialise.

In line with the Department's SREP, a risk-based approach has been applied to the review of banks' operational risk. The Department recognises the principle of proportionality. In other words, the nature and extent of the operations and exposure of a bank or controlling company will influence the nature, timing and extent of operational risk management in a bank or banking group. The bank and controlling company should have in place risk management policies and processes to identify, assess, monitor and control or mitigate operational risk. These policies and processes should be commensurate with the size and complexity of the bank and controlling company.

risk-based approach to review operational risk

The work carried out during the year can be summarised in the following four categories:

1. Assessment of boards' involvement in the oversight of banking institutions' operational risk framework
2. Focused operational risk reviews
3. Processing of new applications by banks to apply the range of approaches for calculating their operational risk capital requirements
4. Participation in the 2008 loss data collection exercise (LDCE).

Each of the four categories is discussed below.

Assessment of boards' involvement in the oversight of banking institutions' operational risk framework

boards' involvement in operational risk framework

During the year under review, operational risk was one of the flavour-of-the-year topics for meetings with the boards of directors (boards) of banks.

Previously, operational risk was partly addressed in internal risk analyses. Depending on the size and complexity of a bank or controlling company, the responses to operational risks may require considerable changes, such as the adaptation of systems and processes, the further development and integration of risk management methods and, above all, the boards' active involvement in the oversight of the banks' and controlling companies' operational risk management frameworks. The board should, *inter alia*, ensure that the bank's and controlling company's operational risk management framework is subjected to an effective and comprehensive internal audit by operationally independent, appropriately trained and competent staff.

The boards were requested to demonstrate their active involvement in accordance with the following:

- Awareness of the major aspects of the bank's and controlling company's operational risks as a distinct risk category that should be managed.
- Approval and periodic review of the bank's operational risk management framework. The framework should provide a definition of operational risk and detail the principles of how operational risk is to be identified, assessed, monitored and controlled and/or mitigated.
- Involvement in ensuring that the bank's operational risk management framework is subject to effective and comprehensive internal audit by operationally independent, appropriately trained and competent staff. The internal audit function should not be directly responsible for operational risk management.

The Department also requested the boards to discuss the three most severe internal operational risk events experienced by the banks from 1 January 2007 under the following headings:

- Description of the operational risk event. (What happened?)
- Cause of the operational risk event. (Why did it happen?)
- Effect, financial and otherwise, of the operational risk event. (What was the impact thereof?)
- Action taken to remedy the operational risk incident and future strategies to prevent or detect and mitigate similar incidents of operational risk.

The Department was satisfied with the majority of the boards' demonstrations and discussions as mentioned above. In the few instances where the Department was concerned about the demonstration of boards' involvement in the oversight of banking institutions' operational risk frameworks, the boards were requested to review their effectiveness and to re-present to the Department. The inclusion of operational risk as one of the flavour-of-the-year topics was also aimed at enhancing the level of awareness of directors of banks regarding this risk type. The boards' oversight of the effective implementation and operational effectiveness of the board-approved operational risk framework is, and will be, an important function to be fulfilled on a regular basis.

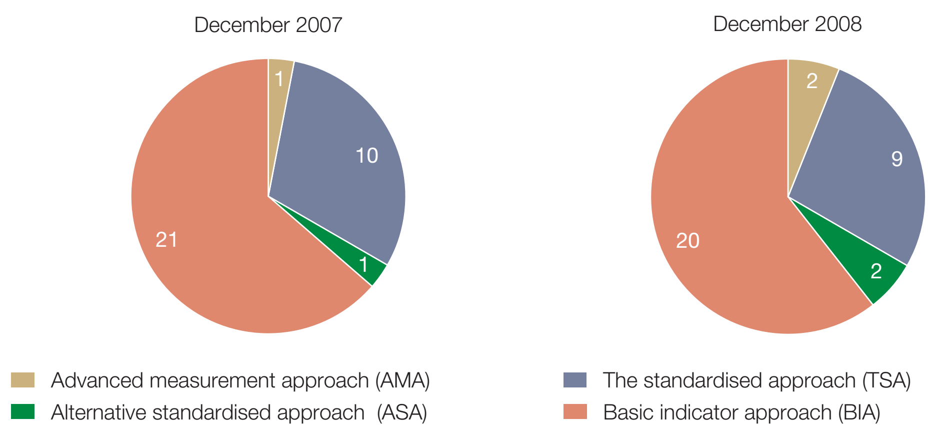
Focused operational risk reviews

focused operational risk reviews

A number of focused operational risk reviews were performed during the year. The purpose of the reviews was, *inter alia*, to determine whether or not the banks had in place risk management policies and procedures to identify, assess, monitor and control and/or mitigate operational risk, and if banks that were using one of the available approaches for calculating operational risk capital, namely the advanced measurement approach (AMA), the standardised approach (TSA), the alternative standardised approach (ASA) or the basic indicator approach (BIA), were meeting the qualifying criteria, and qualitative and quantitative standards.

The number of banks that are using the respective approaches for operational risk are as follows:

Figure 2 Status of banks per operational risk approach



The reviews were conducted in line with the risk-based supervision approach and principle of proportionality as discussed above. A high-level example of a typical review would cover the following:

- Risk governance and management information reporting
- Risk management activities, including progress made with the operational risk self-assessment and the resources available for operational risk management
- The use of data elements such as
  - risk and control self-assessment, key risk indicators, and the frequency of updating the business environment and internal control factors
  - internal loss data, external loss data and scenario analysis
  - relevant operational risk data, progress made with the collection and the systematic tracking of loss data, period of loss data tracking and the quality of loss data
- Disaster recovery plans and business continuity
- Progress made towards the potential migration to more advanced approaches and a target date for submitting an application
- Update on the roll-out of the operational risk management framework to other entities within the group (e.g., offshore subsidiaries)
- A high-level overview of the results of the review of certain critical processes and controls in the treasury areas, and progress made with actionable items identified in the review
- Internal audit's focus areas for the next 12 to 18 months, and the outcome of the independent review of the operational risk framework and operational risk function
- Progress made with operational risk-related disclosure.

Although the Department is satisfied with the management of operational risk from a sectoral perspective, there is room for improvement. Banks were encouraged to monitor whether the operational risk framework continued to move towards managing risk rather than just keeping score. Since operational risk is an evolving management science and the business environment is constantly changing, management should ensure that the operational risk framework, policies and procedures are sufficient and appropriate. A constant challenge for management is to validate that the necessary assurance can be placed on the design and operating effectiveness of the operational risk framework, policies, procedures and internal controls to identify, assess and/or measure, monitor and control and/or mitigate operational risk to which the entity is exposed.

For the limited number of cases where the Department was not satisfied with the level, status or sophistication of operational risk management, the banks were requested to address shortcomings or weaknesses and implement improvements. These banks provided feedback to the Department on a regular basis and the Department is comfortable with the progress made.

IT requires more attention

IT is an area that requires more attention. Banks are encouraged to review, on a regular basis, whether or not they have established appropriate IT policies and processes that address areas such as information security and system development relating to operational risk management, and that they have made investments in IT commensurate with the size and complexity of operations and operational risk management, and exposure to operational risk. This review should include the assessment of the bank's data maintenance incorporated within the operational risk data management process, including data collection, data processing, data access or retrieval and data storage or retention. Operational risk data integrity will have a group-wide impact on operational risk assessment, monitoring and reporting. Banks are encouraged to continue with the process to ensure that the quality or condition of operational risk data is accurate, complete and valid, and that it has not been altered or destroyed in any unauthorised manner.

Processing of new applications

During 2008, the Department received two applications from banks, one for the ASA and the other for the AMA, to adopt a more appropriate or sophisticated approach in calculating operational risk exposure and regulatory capital. The application and approval processes were similar to those followed in the previous year.[3] Both banks were granted approval to adopt the mentioned approaches.

Loss data collection exercise for 2008

loss data collection exercise

The Operational Risk Working Group of the Accord Implementation Group (AIGOR) – a subgroup of the Basel Committee – conducted an LDCE during 2008. The Department has representation on the AIGOR and actively participates in its activities. While similar to two previous international LDCEs, which focused on internal loss data, this LDCE is the first international effort to collect information on all four data elements used in an AMA, namely (1) internal data, (2) external data, (3) scenario analysis and (4) business environment and internal control factors.

Participation was voluntary and the exercise was open to invited banking institutions at the group-wide level that were implementing or using one of the Basel II approaches for calculating operational risk capital, namely the AMA, the TSA, the ASA or the BIA. The exercise was designed to minimise the resources needed to participate. Banking institutions had the choice to participate in the full exercise or to submit information only for certain parts of the exercise. Five South African banks and the Department (in its capacity as supervisor) participated in the 2008 LDCE.

The objective of the exercise is to further the understanding of both supervisors and participating banking institutions regarding outstanding operational risk implementation issues, as well as to promote consistency in addressing these issues across jurisdictions. The exercise will facilitate comparative analysis across jurisdictions by benchmarking losses at the national/regional and international levels, and will provide data to assess capital levels relative to internal data and scenario analysis. Collecting data on the four elements of the AMA framework will provide benefits to participating banking institutions and national supervisors, which include the following:

- A greater perspective on the banking industry’s loss exposure
- Insight into how banking institutions are using internal and external loss data, scenarios, and business environment and internal control factors for risk measurement and risk management
- Information on the four data elements and their influence on operational risk capital levels
- Updated range of practice and new cross-bank comparisons.

customised analysis

During 2009, participating institutions will receive a customised analysis comparing their data with industry data at the international and where possible, regional or national levels. The results will be used to benchmark a banking institution’s loss experience and to gain a better understanding of the completeness of its data. In addition, participating institutions will receive an updated range of practice information on scenario analysis, external data, and business environment and internal control factors. This range of practice information can be used by participating institutions to assess and benchmark their practices against industry practices.

Consolidated supervision

The Regulations relating to Banks, which became effective from 1 January 2008, incorporated all the requirements in respect of consolidated supervision as envisaged in Basel II, as well as the revised Core Principles published in October 2006. Basel II introduced a three-pillar approach with all three pillars being applicable on a solo and consolidated basis.

changes to supervisory approach

Basel II introduced the following major changes to the Department's regulatory and supervisory approach:

- *The scope and application now specifically include any holding company that is the parent company within a banking group:* This is an important difference in Basel II when compared to Basel I. Although Basel I required the application of capital requirements on a consolidated basis, its focus was the capital adequacy of banks. Bank holding companies, which are commonly referred to as "bank controlling companies" in the Banks Act, were previously included in the calculation of group capital adequacy by this Department and the impact of this requirement was, therefore, minimal.
- *All internationally active banks should comply with Basel II:* All South African banks, whether or not they are internationally active, have to comply with Basel II. No distinction was made between local and internationally active banks.
- *The framework should now be applied to all internationally active banks at every tier within a banking group:* This means that sub-consolidation is required within a banking group on every level in that group where an international bank is active. This is a new requirement of Basel II. The Department incorporated this sub-consolidation requirement in the Regulations relating to Banks.
- *Insurance and commercial entities are now specifically excluded when calculating group capital adequacy*: Basel II recognises that a bank's capital rules do not appropriately capture insurance risk and the risk emanating from commercial entities. Basel II, therefore, provided a deduction approach for insurance and commercial entities in a banking group. This differs from Basel I requirements in terms of which the Department required that insurance entities and commercial entities be included in the calculation of a banking group's capital-adequacy ratio.
- *Only majority-owned and controlled banking, securities and financial entities, regulated or unregulated, should be included in the calculation of group capital adequacy:* Basel II requires that only majority-owned entities be included in the calculation of group capital adequacy. Banking groups may have subsidiaries that are not wholly owned. Bank supervisors are, however, given the option to include less than wholly owned subsidiaries in the calculation of group capital adequacy and to consider the inclusion of minority interests in group qualifying capital. Accounting consolidation practices result in third-party partial ownership of such subsidiaries being recorded as a minority interest in the consolidated financial statements. The Department opted to include minority-controlled financial entities in the calculation of group capital adequacy on a pro rata consolidated basis.

Stress testing the South African banking system

banks' stress-testing approaches

The purpose of this section is to outline the key developments that took place in banks' stress-testing approaches, to share some key supervisory observations on these approaches, and to outline the resulting supervisory actions designed to improve stress testing of South African banks and the South African banking system.

This section contains the following subsections:

- What is stress testing and why do it
- Supervisory approaches to stress testing
- Banks' progress in establishing their stress-testing frameworks
- The Department's observations on banks' stress testing
- Supervisory actions

What is stress testing and why do it

Stress testing, as defined by the BIS[4] is a risk management technique that is used to evaluate the potential effects on an institution's financial condition of a specific event and/or movement in a set of financial variables. As capital resources fall and as regulatory capital requirements are likely to rise in times of stress, stress testing is a key tool in understanding the appropriate level of regulatory capital to ensure that banks remain solvent during difficult times.

Banks in South Africa are required to undertake a wide variety of stress tests, which fall broadly into two categories: (1) scenario tests and (2) sensitivity analyses. Sensitivity analysis, which is generally less complex to carry out, assesses the impact on an institution's financial condition of a move in one particular risk driver. The source of the shock is not identified, for example, assessing the impact of a sharp sudden shift in interest rates on an institution's balance sheet.

scenario analysis

Scenario tests, however, consider the impact of simultaneous moves in a number of risk drivers, emanating from a well-defined stress event or scenario. Such scenarios tend to focus on the external macroeconomic environment, and banks are required to define clearly the relationship between the external risk drivers, the risk drivers relevant to the bank and the impact on its balance sheet.

Understanding the potential effects of a range of stress events and scenarios is key to effective risk management in banks, to understand the risks of business strategies in the context of the banks' stated risk appetite, to strengthen risk management processes and, if necessary, to hold capital against certain types of risks.

The appropriate severity of such scenarios tends to be discussed in terms of exceptional, but plausible, events if a bank is to look beyond its current and most recent experience. Defining appropriate severity in broad terms ensures that a scenario must be appropriate for the risks the bank is facing. However, with such a broad definition, very different interpretations can arise.

To assist banks in conducting or executing meaningful stress testing, both in form and in substance, and in particular in relation to appropriate severity, the Department undertook significant work during 2007 and 2008 to help banks understand and develop their stress-testing frameworks.

Owing to the international financial market turmoil experienced in 2008, stress testing has become a focus area for many supervisors internationally, with a view to understanding the risks that can still materialise during the current crisis and minimising the potential for a similar crisis in the future.

Supervisory approaches to stress testing

core regulatory stress-testing requirements

The Regulations relating to Banks set out the core regulatory stress-testing requirements for banks. These include sensitivity and scenario analysis covering individual risk areas and whole-bank stress testing. Such stress tests are required under Pillar 1, which captures minimum regulatory capital requirements for the key risk areas, namely credit, market and operational risk, and under Pillar 2, which reviews whole bank risk in a SREP. Specific stress testing is required under Pillar 1 for advanced approaches to risk measurement of credit, market and operational risk. A more general requirement is made of all banks under Pillar 2 for holistic bank stress tests, as well as some individual risk area stress tests, such as interest rate risk in the banking book.

In terms of Pillar 1 IRB stress testing, regulation 23(11)(b)(ix) of the Regulations relating to Banks states:

> (ix) Stress testing
>
> As a minimum, a bank that adopted the IRB approach for the measurement of the bank's exposure to credit risk shall have in place a stress-testing process in respect of the bank's exposure to credit risk, which stress-testing process –
>
> - shall include an identification of possible events or future changes in economic conditions that may have an unfavourable effect on the bank's risk exposures and an assessment of the bank's ability to withstand such events or changes, which events or changes may include –
>   - – economic or industry downturns;
>   - – market-risk events;
>   - – liquidity constraints; and
>   - – mild recession scenarios
> - shall be meaningful, based on the environment in which the bank conducts business;
> - shall assess the effect of a recession on the bank's PD ratios, LGD ratios and EAD amounts;
> - shall make provision for an internal ratings migration in respect of at least some of the bank's exposure to credit risk; and
> - shall appropriately evaluate evidence of rating migration in respect of external ratings.

In terms of Pillar 2, Principle 3 of Basel II, a bank should operate above the minimum regulatory capital ratios and the regulator should have the ability to require banks to hold capital in excess of the minimum.

Regulation 39 of the Regulations relating Banks relates to corporate governance and contains a number of references such as

- regulation 39(6), which states that

  > [banks] shall, on a periodic basis, conduct relevant stress tests, particularly in respect of the bank's main risk exposures, in order to identify events or changes in market conditions that may have an adverse impact on the bank.

- regulation 39(8) which states that

  > [banks] shall have in place a routine and rigorous process or programme of stress testing the results of which stress-testing
  > - – shall periodically be reviewed by the senior management of the bank;
  > - – shall be used in the bank's internal assessment of capital adequacy;
  > - – shall be compared against the bank's measure of expected positive exposure and the related impact on the bank's capital adequacy;
  > - – shall be duly reflected in the bank's policies and counterparty limits set by management and the bank's board of directors.

The stress-testing requirements referred to in the Regulations relating to Banks are a core part of the effective supervision of banks and set out the minimum regulatory expectations of banks' approaches to stress testing. While the Regulations relating to Banks outline the requirements for appropriate stress testing, banks are required to undertake significant additional work to ensure that this is effectively carried out.

Banks' progress in establishing their stress-testing frameworks

stress testing is a necessity

Notwithstanding the references in the Regulations relating to Banks setting out the requirements for banks' stress testing, it has long been a supervisory requirement. Supervisors around the world have maintained that a robust programme of stress testing is a necessity for effective risk management. Moreover, the appropriate time during which to ensure that stress testing is effective is in benign times, such as those experienced in the mid-2000s. During such periods, banks should ensure that they pay due attention to stress testing and to constructing scenarios that are appropriately severe to look beyond the recent benign experience.

In South Africa banks were formally required to implement the stress testing of risks other than market risk, as set out in the Regulations relating to Banks, for the first time in January 2008. However, banks' stress-testing programmes were already being enhanced ahead of the implementation of Basel II. In this context the Department saw a wide range of approaches to stress testing undertaken by banks in South Africa during the period 2007 to 2008.

stress testing of credit risk

All banks applying for the advanced approaches to credit risk had to submit proposals for effective stress testing of credit risk under Pillar 1, including stresses on all credit parameters, PD, LGD and EAD to understand how these factors changed in times of stress. Particular attention was paid to the migration of obligors through PD groupings as the economic environment changed.

market and operational risk stress tests

All banks currently pursuing the advanced approach to market risk have to undertake a series of stress tests. However, as the advanced approach to market risk was already in place before 2008, most banks to whom this requirement was relevant had previously implemented such stress testing. In addition, all banks implementing the advanced approach to operational risk were required to undertake operational risk stress tests. In both cases banks' approaches to stress testing were well advanced, more so than for credit risk; assisted perhaps by the greater supervisory prescription in both these approaches.

All banks were also required to commence work on their stress testing in terms of Pillar 2, that is, whole-bank stress tests in the face of adverse macroeconomic scenarios.

sophisticated multifactor macroeconomic stress tests

In terms of Pillar 2 stress testing, banks in South Africa, generally, had already undertaken a significant amount of work and had relatively sophisticated multifactor macroeconomic stress tests. Scenarios are devised, often but not always, with input from economic research, business units and senior management. In constructing scenarios, the combination of adverse developments in several macroeconomic variables must be checked for internal consistency and that the specified values of the macroeconomic variables constitute a realistic mix. These scenarios are then mapped on banks' balance sheets and risk drivers to assess the impact. The conventional approach is to devise scenarios that imitate historical episodes of tail events or to generate scenarios with the aid of a macro-econometric model. However, as history rarely repeats itself exactly and in order to ensure that scenarios are appropriate for the risk exposure of an individual bank, banks were required to understand hypothetical scenarios that would impact their balance sheets.

The Department emphasised at an early stage the importance of an appropriate governance framework for stress testing. Board approval, senior management oversight and internal audit involvement are all key, and governance was a focus of all discussions with banks regarding their stress-testing frameworks.

The Department's observations on banks' stress testing

The Department made a number of general observations under both Pillar 1 credit risk stress testing and the broader Pillar 2 stress-testing frameworks.

general observations under Pillar 1 and Pillar 2

Pillar 1 stress testing

Banks' credit risk stress testing under Pillar 1 varied. In relation to the stress testing of individual parameters the following was noted:

Governance: A number of banks left Pillar 1 stress testing to a specific group of people. Banks were advised to ensure that they involved business units and economists, and that there was effective senior management challenge. This follows international practice in stress testing.

Probability of default: In addition to ensuring that PD estimates for each PD band reflect long-run data, there is a requirement that banks should consider rating migrations between bands as part of their stress testing. Although the stress testing performed by banks generally allowed for some level of implicit rating migration, certain banks had difficulty in translating this into practical stressed outcomes (e.g., what their portfolio would look like in terms of movements in their rating distributions) and further work was required.

Loss given default: In some instances banks did not include LGD stress tests, indicating that they were already using downturn estimates of LGD in their regulatory capital calculations. In other instances the methodology and assumptions applied indicated that the severity of the LGD stress was not aligned to that of a severe scenario. The Department's view was that downturn LGD estimates usually referred to the LGD in a regular downturn and, consequently, it remained necessary to stress LGD estimates for more severe scenarios. This was a requirement for all IRB banks and further work was necessary in some instances.

Exposure at default stress testing: EAD stress testing was the least developed of all parameter methodologies, with the exception of some basic growth assumptions. If a bank believes that EAD estimates are not affected by the cycle, clear evidence must be presented to prove this fact. In most instances additional work was required in this area of stress testing.

More generally, the granularity at which stress testing was conducted for Pillar 1 varied greatly between banks. The Department highlighted to banks that the goal of Pillar 1 stress testing was to use it as a diagnostic tool and, as such, greater granularity was preferred. One way to consider the appropriateness of granularity was for senior management to consider whether they understood what a Pillar 1 stress meant for individual business units and resulting business actions.

Integration between Pillar 1 and Pillar 2 stress testing

In some instances there were significant differences between the approaches to Pillar 1 and Pillar 2 stress testing. Although it is not a requirement to have the same methodology and approach to Pillar 1 and Pillar 2 stress testing, it is useful to understand the similarities and differences between, and be able to use, the two approaches as benchmarks. In such instances banks generally found it difficult to explain the differences adequately.

differences between Pillar 1 and Pillar 2 stress testing

Pillar 2 stress testing

Supervisory assessment of banks' stress tests focuses on the buffer requirement that banks keep in order to avoid breaching the minimum required regulatory capital ratios. Stress testing in the Pillar 2 context, therefore, forms an important part of the assessment of the minimum capital requirement of banks.

From a supervisory perspective, given the plausibility of economic scenarios, management actions, diversification, time span covered and appropriateness of the multi-factor models, the stress-testing results and the capital impact are considered. In instances where the minimum required capital and reserve funds may be breached, the Department may consider a capital add-on.

plausibility of economic scenarios

The plausibility of the economic scenarios, notably in relation to the appropriate severity of the shock, was a key area of debate between banks and the Department in relation to the following:

- The relevance of the economic scenarios to the bank
- The appropriateness of the severity
- The appropriate time span (see the time frame of the scenario considered on page 37)
- The fact that the extent to which diversification was considered varied significantly from full consideration to no consideration
- The fact that the time frame of the scenario considered, and its impact, varied widely: in some instances only instantaneous shocks were considered, while in others the full five-year scenario and resulting impact were carefully drawn out
- The fact that the associated buffer requirement was not always well articulated in relation to the stress-testing results: in some instances, a flat buffer requirement was articulated that appeared to bear no relation to the stress test or the banks' stated risk appetite.

Key observations

Scenario severity and consistency: The Regulations relating to Banks require banks to consider a scenario that can be regarded as at least a mild recession. However, in relatively benign times, a mild scenario alone is unlikely to be sufficient. The Department asked that banks also consider a severe, but plausible, scenario. In this context banks were required to undertake further work to ensure that a suitably severe scenario that was appropriate for their bank was considered, that is, a bank should consider what issues would severely impact its business from both a South African and international perspective.

consistency is key to effective scenario stress testing

Many scenarios were formulated such that individual components of the scenario were more severe than others (e.g., a much larger shock to gross domestic product than to interest rates). Consistency is key to effective scenario stress testing. Banks were encouraged to follow appropriate governance structures (e.g., involvement of business units, economic research and senior management sign off) to achieve this.

correlations change in stressed conditions

Correlation factors: The correlations between counterparties or assets are estimated in a variety of ways. However, in most cases the correlations reported by banks were made over a long period and were not adjusted to be appropriate for a stress scenario. Correlations change in stressed conditions and the Department pointed out to banks that it would not be acceptable to use long-term correlations under relatively benign economic conditions.

assumptions in respect of correlations

Diversification and concentration: The extent to which Pillar 2 stress testing incorporates diversification within risk types (intra-risk) and between risk types (inter-risk), such as credit and market risk, is an area of significant debate between banks and supervisors. Banks must be able to demonstrate how their assumptions in respect of correlations are valid in stressed situations. The importance of this debate became clear during 2007 and 2008, and will be an area of focus in 2009.

In this context supervisors expect a discussion of diversification benefits in times of stress to be tempered by an analysis of the types of concentration risk that can arise. Again, this relates to the types of concentration that may materialise in stress situations in relation to specific risk types (e.g., in credit risk or intra-risk concentration), but also how concentrations between risk type (inter-risk concentrations) may be amplified in stressed situations, for example, in relation to counterparties in market and credit risk.

Time span covered: Banks should be able to demonstrate how Pillar 2 stress testing plays out over a period commensurate with the ICAAP outlook, which is around three to five years. It may very well be that the worst outcome (biggest impact on the capital structure of the bank) might only occur in years 3 and 4. It is also important that this be considered from a capital planning or management perspective.

plausibility of management actions

Management actions: From a Pillar 2 perspective, it is imperative that management actions are considered when assessing the Pillar 2 stress test of a bank to understand its likely capital impact properly. Banks must be clear on what types of management actions are included in their stress-testing results and evidence the plausibility of such management actions in a period of stress. The Department drew banks' attention to the fact that further work had to be done in articulating the plausibility of management actions. In this regard, a conservative view of the plausibility of management actions without supporting evidence was taken by the Department.

Assumptions/Methodology: All stress-testing methodologies contain assumptions. Nonetheless, where third parties are instrumental in the development of stress-testing frameworks, it is imperative that banks are able to explain their assumptions and their impact on stress-testing results. Greater engagement and questioning from business units, economic research and senior management is one way of ensuring that a "black box" approach to stress testing is not adopted.

Supervisory actions

strengthen banks' own stress-testing practices

The supervisory observations outlined above were communicated to banks and significant debate was held on how to address key challenges. While the Department noted that the Regulations relating to Banks contained the key elements relevant to stress testing, and their practical implementation was the banks' own responsibility, supervisors worked with banks to help them better interpret the intent of the Regulations relating to Banks in a way that would strengthen banks' own stress-testing practices. Supervisory actions included the following:

- Bilateral discussions
- Multi-bank symposiums
- General guidance
- Development of the Department's own stress-testing expertise.

Ongoing debate with, and feedback to, individual banks was the primary communication channel to help banks strengthen their stress-testing frameworks. Such communication took place throughout 2007 and 2008, and will continue into 2009.

The Department also organised a symposium that brought together banks' risk specialists, economists and stress-testing personnel to debate cyclicality and stress scenarios in a South African context. The objective was to share ideas, at a holistic level, about the types of stresses that might be seen in the South African context and the methodological approaches adopted in stress testing.

Guidance

more detailed guidance note

In addition to the actions above, the Department developed a more detailed guidance note to assist banks in taking forward their Pillar 1 and Pillar 2 stress testing in particular in relation to four key areas:

1. Differences between Pillar 1 and Pillar 2 stress tests
2. The appropriate severity of stress scenarios
3. The use of reverse stress testing
4. The role of senior management.

To assist in understanding the difference between Pillar 1 and Pillar 2 stress testing, Guidance Note 9/2008 explained that the focus of Pillar 1 stress testing was on credit risk (notably migrations between grades) while Pillar 2 focused on the holistic view of all risks. Furthermore, stress-testing time horizons under Pillar 1 were usually shorter term while under Pillar 2 the time horizon was at least three to five years. Finally, the Guidance Note highlighted the role of management actions in Pillar 2 as opposed to in Pillar 1 where it was not considered.

To assist in understanding the appropriate severity of stress scenarios, the Guidance Note – without removing the obligation on banks to determine scenarios appropriately severe for their business – outlined the type of one in twenty-five-year scenarios that would be seen as a minimum severity appropriate for effective stress testing.

Included in the guidance note was the potential use of reverse stress testing in ensuring that banks understood the risks to their business in times of severe stress and in complementing the one in twenty-five-year stress scenarios in Pillar 2 stress tests.

The Guidance Note sets out the key role of engaging senior management along with the importance of involving a range of people from around the business in drawing up the scenario(s), including economic research and the business units.

Senior management and other engagement is key to ensuring that stress-testing scenarios are appropriately severe and that analysis of stress testing is meaningful to the banks' business, including setting appropriate capital buffers in line with the banks' stated risk appetite.

The Department's own stress testing

the Department continued to develop its own stress-testing expertise

In order to ensure effective challenges to banks' own stress testing and to gain an effective macro-oversight of the banking system, the Department continued to develop its own stress-testing expertise by working in conjunction with other departments in the Bank and with international organisations.

For example, during 2008 the Department participated in the FSAP/Article IV Consultation by the IMF and the World Bank.[5] A component of these reviews was an excercise in stress testing the South African banking sector.

The stress testing consisted of both sensitivity and scenario analysis. The analysis was approached from both a bottom-up (estimated by the participating banks) and a top-down approach, based on the supervisory returns.

The methodology was based on standard IMF stress-testing methodology, albeit further enhanced by the Department, and was undertaken by joint teams consisting of members from the IMF and the Department. The report concluded, based on data available at the end of January 2008, that the South African banking sector was fundamentally sound, but that there were increasing macro-financial risks.

The ongoing availability of the stress-testing methodology, and the continued access to IMF staff for technical guidance and scenario formulation enable the Department to gain a better understanding of the banking system and to challenge the banks' own stress testing.

In addition, the Department co-operated with a visiting research fellow to refine the in-house stress-testing capacity. The research fellow was from the Centre D'Etudes Prospectives et D'Informations Internationales, an independent French institute for research into international economics. The aim of the fellowship programme was to develop a credit risk stress-testing model for the South African banking sector.

The Department worked closely with the research fellow to develop the methodology and build on existing work to enhance the ability to undertake system-wide stress tests. The main findings of this exercise, based on data up until June 2008, were that the South African banking sector was resilient against economic shocks.

The Department spent significant resources researching and building capacity for stress testing, enhancing its ability to understand systemic weaknesses in the banking sector better, and to provide a stronger base from which to challenge the output of banks' own stress testing more effectively.

Market risk

Following the revision of the Regulations relating to Banks in line with Basel II, the treatment of market risk changed. Banks are only required to hold capital to cover their position risk arising from exposure to financial markets and the risk of idiosyncratic change in value of financial assets with exposure to individual companies.

Banks are exposed to market risk when they retain a small proportion of residual risk from executing trades on behalf of their clients, or through proprietary trading. In 2008 the number of banks in South Africa reporting market risk increased to twenty-six, up from eleven in 2007 as a consequence of the introduction of the revised Regulations relating to Banks. All banks with exposure to foreign currencies are required to hold capital for the market risk associated with exchange rate fluctuations, whereas previously foreign-exchange risk could be reported as a component of credit risk. Counterparty risk emanating from trading activities was previously also a part of market risk capital requirements, but is treated as a component of credit risk under the revised Regulations relating to Banks. Furthermore, market risk no longer includes elements aimed at addressing concentration risk and operational risk arising from trading activities.

The revised Regulations relating to Banks include only two alternative reporting methods for market risk, namely the internal models-based approach (IMA), and the standardised approach (TSA), whereas under previous regulations a simplified

two alternative reporting methods for market risk approach was also available to banks. Banks are also permitted to apply a combination of TSA and IMA reporting when required to do so or under circumstances approved by the Registrar. At present five of the twenty-six banks with market risk exposure have permission to report according to the IMA.

Banks with IMA approval are subjected to an annual review in order to maintain the right to use the modelled method for reporting. During 2008, the Department conducted evaluations and renewed its approval for all five banks that are currently permitted to use the IMA. In addition, IMA banks are subject to a quarterly appraisal of their compliance with the conditions of approval to use the IMA. During this process, a bank's back-testing performance, available to the Department via monthly submissions, is a key indicator of the validity of its market risk models to measure the capital required to cover potential losses. When back-testing data indicate that a bank's losses exceed modelled predictions above a tolerance level, the market risk capital requirement is increased by adjusting the value of a regulatory multiplication factor. Apart from examining back-testing, banks are also assessed against various qualitative factors stipulated in the Regulations relating to Banks. No adjustments were made to banks' capital multiplication factors during 2008 on the basis of back-testing performance. Some banks received adjusted multiplication factors following their annual assessment.

Extreme volatility in financial markets began in late 2007 and escalated in some sectors in 2008. Slumps in commodity prices, the rand exchange rate and South African equity markets resulted in banks' reducing their risk appetite; evident through a reducing sectoral market risk capital requirement in the latter half of the year. Despite market suppression, banks' trading book profitability saw both pronounced positive and negative impacts across the industry.

capital requirement for banks' exposure to equities

The revised Regulations relating to Banks also introduced a capital requirement for banks' exposure to equities that are generally held for investment purposes, and which are included in the banking book for accounting purposes. Fourteen banks reported exposures of this nature during the course of 2008. Capital charges under these regulations contributed to approximately 5,5 per cent of banks' total capital requirements. For supervisory purposes, equity risk is overseen alongside market risk.

Capital held for market risk made up about 2,6 per cent of the total capital requirement for the banking sector during 2008. The decrease from around 4 per cent in 2007 is attributable to the addition of operational risk and equity risk to the total capital requirement. Furthermore, capital held for concentration risk, operational risk and counterparty risk arising from trading activities is no longer regarded as being part of market risk.

Equity risk in the banking book

The revised Regulations relating to Banks also introduced a requirement that banks hold capital for their exposure to non-traded equities. These assets are usually held for investment purposes and are treated as banking-book entries for accounting purposes.

The Regulations relating to Banks require banks that report credit risk according to SA to report their equity risk according to a simplified framework, while banks with credit risk IRB approval may use a simple risk-weighted method, or they may seek approval to use a market risk value-at-risk (VaR) model method or a credit risk IRB method to report the risk.

Fourteen banks reported a capital requirement for equity exposures in their banking book in 2008. One bank received approval to report equity risk according to the credit risk IRB method, while three others used the simple risk-weighted method. The remaining ten banks report according to the simplified framework.

risk-based assessments

As part of its SREP, the Department conducted risk-based assessments in order to gain greater insight into the sources of risk and management controls of banks. During 2008, two banks were assessed on equity risk in their banking book. Each assessment encompassed an off-site evaluation of a documented submission by the bank elaborating the framework in use for identifying, measuring, monitoring, reporting and controlling the risks. This was followed by an on-site review to gain a first-hand perspective on the banks' operational conduct and risk management. Banks are primarily measured against compliance with the Regulations relating to Banks, but the tenets of the Core Principles developed and published by the Basel Committee are also used as a yardstick for basic minimum standards.

Notes

1 http://www.bis.org/press/p081202.htm.
2 http://www.bis.org/press/p081120.htm.
3 Bank Supervision Department, *Annual Report 2007* (Pretoria: South African Reserve Bank, 2007), 33, 34.
4 http://www.bis.org/publ/cgfs24.pdf.
5 The FSAP report can be found at http://www.imf.org/external/pubs/ft/scr/2008/cr08349.pdf and the Article IV report at http://www.imf.org/external/pubs/ft/scr/2008/cr08348.pdf.