Chapter 2: Promoting the soundness of the banking system: Overview of supervisory activities

2.1 Introduction

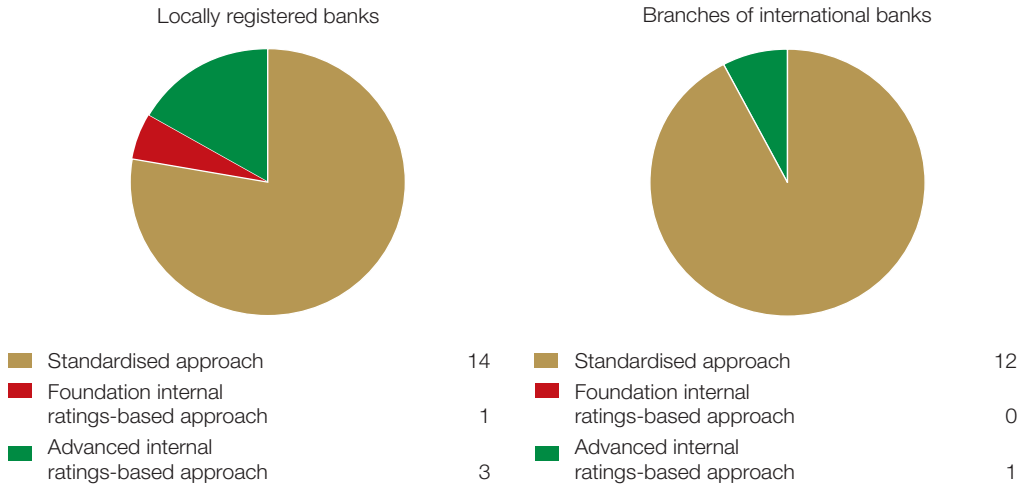
Risk oversight in terms of Basel II includes both compliance-based supervision of Pillar 1 risks[9] and Pillar 2 prudential supervision[10] of a bank's inherent sources of risk and its controls to manage them. This chapter reports on the supervisory activities of the Department, with specific focus on the key Pillar 1 risk areas being monitored, that is, credit risk, market risk and operational risk and the Department's ICAAP under Pillar 2. In addition, the developments in respect of Pillar 3 disclosure, stress testing and consolidated supervision are also discussed.

2.2 Credit risk

menu of approaches to determine the minimum required regulatory capital relating to credit risk

Under Pillar 1, banks in South Africa can choose from a menu of approaches to determine the minimum required regulatory capital relating to credit risk. As at 31 December 2009 South African banks implemented the following approaches:

Figure 2.1 Number of banks per credit risk approach (December 2009)



The Department continued to perform both compliance-based and prudential supervision of banks, and continued to review and monitor the impact of market conditions on South African banks' credit risk profiles and portfolios through a number of initiatives. The work carried out during 2009 covered the following:

- Quantitative analysis.
- Review of self-assessment templates submitted by banks.
- Focused reviews of standardised approach (SA) requirements for credit risk.
- Focused credit risk on-site reviews of IRB requirements.
- Processing of applications by banks to implement new or revised models and rating systems.
- Reassessment of eligible external credit assessment institutions.

9 Pillar 1 is a subsection of Basel II which sets out the minimum capital requirements to meet credit risk, market risk and operational risk that every bank should strive to meet.

10 Pillar 2 is a subsection of Basel II which sets out the requirements for supervisory review and for banks to assess their capital adequacy relative to their overall risk profile. Supervisors are required, under Pillar 2, to take appropriate actions in response to the assessments performed.

2.2.1 Quantitative analysis

focus on the quality of regulatory reporting

During 2009 the quantitative analysis of credit risk information focused on the quality of regulatory reporting, with specific emphasis on impaired and defaulted advances and specific impairments. Discrepancies and inconsistencies in banks' interpretation of the requirements contained in the Regulations relating to Banks were identified through trend analysis of key credit risk data submitted by banks and through peer-group analysis.

2.2.1.1 Credit risk survey

the Department undertook a survey on credit risk

The Department paid particular attention to the guidelines contained in principles 8 and 9 of the Core Principles which deal with (1) the alignment between a bank's credit risk management processes and capital and the bank's size and complexity and (2) problem assets, provisions and reserves. In order to discharge part of its duties as specified in these principles, the Department undertook a survey on credit risk during the latter half of 2009 which involved nine participating domestic banks.

The survey focused mainly on retail exposures of the banks and covered credit risk management in a wider sense. Participating banks were requested to furnish the Department with the following information in respect of the months ended December 2008 and June 2009:

- Detailed ageing analysis of gross exposures in arrears and accompanying specific impairments held for asset classes and products specified.
- Haircuts, recovery periods and loss experience in respect of collateral held.
- Methodologies underpinning banks' portfolio and specific impairments.
- Detailed loan-to-value analysis of banks' residential mortgage portfolios.

banks were still experiencing stress in the retail portfolios

The work carried out entailed mainly trend and peer-group analysis, and benchmarking against international best practice. Generally, the survey confirmed that banks were still experiencing stress in the retail portfolios, particularly in residential mortgages (also refer to section 4 – Credit risk). The results of the survey also revealed certain key issues that formed the basis of in-depth working sessions with selected banks to enhance the quality of credit risk data reporting and to clarify issues of an interpretive nature. In certain instances industry issues were identified that required further investigation to enable the Department to provide bank-specific and/or industry-wide guidance. Furthermore, the results of the credit risk survey highlighted certain issues that may require amendments to the Regulations relating to Banks.

2.2.1.2 Cyclicality of capital

While stable levels of bank capital are preferred, the level of capital should also be commensurate with the inherent risk of a bank's business, specifically its associated credit risk. In support of the Department's mission to apply international regulatory and supervisory standards, further work was done during 2009 as a follow-up to preliminary findings of the SIGV in respect of the impact of cyclicality on banks that adopted the advanced approaches for measuring capital requirements in respect of credit risk. This was done in order to assess the impact of a downturn on banks' capital relative to the level of credit risk exposure and to ensure that the Department's supervisory actions did not exacerbate the situation. This will remain a focus point going forward and the Department will continue to monitor any further guidance issued by the Basel Committee in this regard.

2.2.2 Review of self-assessment templates submitted by banks

self-assessment templates to assess compliance with the minimum IRB requirements

Each bank that adopted one of the IRB approaches to calculate its exposure to credit risk (the IRB banks) is required to complete self-assessment templates to assess its compliance with the minimum IRB requirements as prescribed in the Regulations relating to Banks. As at December 2009 four domestic banks and one branch of an international bank adopted and implemented one of the IRB approaches.

The Department received the 2009 submission of the self-assessment templates (based on 2008 data) from all the IRB banks which were assessed and reviewed to identify gaps and exceptions. The definition of a 'gap' or an 'exception' as reported in the 2008 *Annual Report* (pages 23 and 24) remained unchanged. In instances where exceptions were noted, banks were required to provide project plans and target dates for compliance with the Regulations relating to Banks.

2.2.2.1 Identified gaps

The following gaps were identified:

- In some instances banks did not provide any information on the progress made to address the exceptions identified in the 2008 self-assessment.
- Similar to the 2008 submission, there was one instance where the required audit status of the work performed by the internal audit function was not provided.

2.2.2.2 Identified exceptions

The following common exceptions were identified:

capital-adequacy stress-testing processes still require improvement

- Sound capital-adequacy stress-testing processes still require improvement in some of the banks.
- Most banks still lack sufficient data history required to estimate internal risk parameters.
- The required annual review (rerating) of assigned borrower and facility ratings was not conducted by some of the banks.

2.2.3 Focused reviews of standardised approach requirements for credit risk

The main thrust of the work undertaken by the Department's Review Team during 2009 was to conduct reviews focusing on the implementation of the SA by banks. This entailed the review of the computation of regulatory capital in respect of credit and counterparty exposures, which, as reported in the 2008 *Annual Report*, was commenced with during 2008.

reviews also included an evaluation of the eligibility of the credit risk mitigation instruments

The reviews were risk-based and assessed the degree of compliance by each bank with the requirements of the Regulations relating to Banks, more specifically, the reviews assessed the correctness of the risk weights applied in the calculation of minimum required capital and reserve funds relating to credit risk, and the reasonableness of the credit risk classifications used. Where banks had availed themselves of credit risk mitigation, the reviews also included an evaluation of the eligibility of the credit risk mitigation instruments, the methodology employed and compliance with the credit risk

mitigation policy. Each bank was reviewed against the same criteria, but the methodology adopted for the reviews was adapted to the materiality of the bank.

The banks reviewed were found to have been diligent in their implementation of the SA and were generally compliant with the requirements of the Regulations relating to Banks as they applied to the SA. Typical findings included the following:

- Using either incorrect external credit assessments or incorrect rating scales to determine the appropriate risk weight.
- Assigning the incorrect CCF to off-balance-sheet exposures.
- Credit policies not incorporating the criteria for risk mitigation set out in the Regulations relating to Banks.
- Intangible assets not being deducted from capital and reserves.

The findings of the reviews were brought to the attention of the senior management of the banks concerned and their concurrence with, and a commitment to, rectifying the identified issues were obtained. The rectification of the issues is followed up in the normal course of the supervisory review and assessment process of the Department.

2.2.4 Focused credit risk on-site reviews of internal ratings-based requirements

The Department had significant interaction with banks during 2009 by means of focused on-site reviews that spanned selected retail and wholesale portfolios. When the results of the reviews undertaken during the approval process in 2007 were compared with reviews undertaken during 2009, it became evident that significant progress had been made by those banks that had adopted the IRB approaches to embed the rating and risk estimation systems and processes throughout the organisations. Internal ratings and default and loss estimates continued to be produced which, in most cases, formed an integral part of the banks' credit approval processes, risk management processes and internal capital allocation processes.

risk-based approach in selecting portfolios

The Department continued to follow a risk-based approach in selecting portfolios to be reviewed while the process for scoping on-site reviews remained unchanged from 2008. Emphasis was placed on progress made in addressing weaknesses identified during the 2008 focused on-site reviews and, in some instances, certain issues remained unresolved, and proved to be a challenge. For these banks the frequency of interaction was significantly increased to ensure that recurring issues received appropriate senior management attention and the relevant banks were required to present plans for resolution of identified issues to the Department.

2.2.4.1 Key findings

- *Governance of model validation:* During on-site reviews the Department stressed the importance of proper model governance processes, with emphasis placed on the composition and functioning of the designated committees appointed by the boards of directors to approve all material aspects of banks' rating and risk estimation processes. In this regard the enhancement of effective challenge was specifically highlighted. Furthermore, the importance of the internal audit function in the model governance processes was emphasised, specifically the timing of process audits performed on material models. The Department encouraged banks to complete

these process audits prior to model-related submissions being made to the designated committees.

some banks failed to complete the prescribed annual validation of models

- *Annual validation of models*: Owing to resource constraints, some banks failed to complete the prescribed annual validation of models. Most of these banks have, however, appointed additional resources to strengthen the existing capacity for validation. In most instances the Department found that the documentation standards and quality relating to processes surrounding validation required attention and improvement.

- *Ongoing monitoring of credit models*: Banks remained focused on improving and enhancing their management information relating to the ongoing monitoring of the performance of credit models. The Department regards this ongoing monitoring as a vital component of validation, but advised banks to guard against the possibility that the required independent validations are neglected. The importance of appropriate tests being performed as part of the monitoring process was also stressed during the on-site reviews.

banks to remain focused on data management and to improve data quality continually

- *Data quality*: The Department expects banks to remain focused on data management and to improve data quality continually.

- *Reasonableness of credit conversion factors applied*: In certain instances zero per cent CCFs were applied to uncommitted corporate facilities and it is the Department's view that, in practice, borrowers tend to utilise more of the credit lines close to the point of default. Applying a zero per cent CCF to an unutilised corporate facility complies with the letter of the Regulations relating to Banks, but does not necessarily reflect the underlying risk of additional drawdown of these credit facilities. Consequently, banks were requested to reassess the application of zero per cent CCFs to unutilised corporate facilities to determine the reasonableness thereof.

2.2.5 Processing of applications by banks to implement new or revised models and rating systems

Most of the IRB banks shifted their focus and efforts to reviewing existing rating and risk estimation systems in order to ensure the effective identification, measurement and monitoring of the risks to which their businesses are exposed. These reviews, in most instances, resulted in significant model and rating system changes.

material internal model changes or developments subject to a formal approval process

As reported in the 2008 *Annual Report*, the original approvals granted to the banks for the use of IRB approaches to calculate the minimum regulatory capital requirement for credit risk relate only to those internal models and rating systems included in the original applications submitted by banks. Any material internal model changes or developments (based on the banks' communication policy with the Department) that fall outside the scope of the original approvals granted by the Department are subject to a formal approval process prior to implementation thereof by banks.

As regards material changes in 2009 to model methodologies, material redevelopments or recalibrations which resulted in an increase in regulatory capital requirements, the Department agreed that banks could continue with the model implementation, provided that the changes had been subjected to the formal governance processes of those banks.

In these circumstances material model changes still need to be communicated to the Department, accompanied by relevant documentation such as model build

documentation and independent validation results. The notification has to contain an executive summary that includes certain prerequisite information and the chief executive officer of the bank concerned needs to certify that the increase in regulatory capital due to the planned model changes is, to the best of his or her knowledge, reflective of the underlying credit risk within the applicable portfolio. The Department, however, reserves the right to call for any further information and, if deemed necessary, might decide to initiate a formal review process.

During 2009 the Department received applications in which material changes to model methodologies, material redevelopments or recalibrations led to a decrease in the regulatory capital requirement. Some of these applications were approved subject to the following conditions:

- For a prescribed period the bank is required to maintain a prescribed percentage of the reduction in the minimum required capital and reserve funds for the specific model as additional capital in terms of regulation 38(4) of the Regulations relating to Banks under Pillar 2b.
- Upon termination of the prescribed period the bank is required to provide an updated calculation of the capital impact and a validation report that includes back-testing results, which is considered by the Department in determining whether the add-on should be maintained or removed.

2.2.6 Reassessment of eligible external credit assessment institutions

a significant level of reliance is placed on ratings issued by eligible institutions

Under Basel II a significant level of reliance is placed on ratings issued by eligible institutions, which includes ECAIs and export credit agencies, in the calculation of minimum required capital and reserve funds relating to credit risk and securitisation exposures of banks. Consequently, it has become increasingly important for the Department to ensure that such eligible institutions continue to comply with the criteria outlined in the Regulations relating to Banks in order to assure that the ratings used by banks in determining capital requirements are reliable.

In October 2009 the Department held meetings with the existing approved eligible institutions in South Africa, namely, Fitch Ratings (Fitch), Moody's Investors Service (Moody's) and S&P, requiring each of these ECAIs to demonstrate that it continues to comply with the minimum requirements for eligible institutions as set out in regulation 51 of the Regulations relating to Banks. In addition to information required in terms of regulation 51, the Department also requested the ECAIs to expand on the following areas:

- Rating methodologies for structured products.
- Significant changes in any eligibility requirement since the ECAI had been approved.
- The back-testing results for rating methodologies.

The Department found that the respective ECAIs improved their corporate governance structures and also improved their rating methodologies for structured products and that they still met the minimum requirements for eligible institutions as prescribed in regulation 51 of the Regulations relating to Banks.

the Department affirmed Fitch, Moody's and S&P as eligible institutions

Based on the findings above, the Department affirmed Fitch, Moody's and S&P as eligible institutions. The outcome of the Department's decisions was formally communicated to the respective ECAIs in December 2009.

2.3 Market risk

2.3.1 Introduction

Aftershocks of the financial crisis played out around the world and in South Africa on financial markets where trading slowed correspondingly. Levels of market risk in South African banks followed the attenuation in secondary market activity on the back of fundamental decline in economic activity in debt, equity, foreign exchange and commodities.

2.3.2 Market risk regulatory reporting methods

The Regulations relating to Banks include two alternative reporting methods for market risk, namely the internal models-based approach (IMA), and a standardised approach. Under approved circumstances, banks are also permitted to apply a combination of standardised and models-based reporting. At present five of the twenty-six banks exposed to market risk have permission to report according to the IMA.

2.3.3 Market risk reviews

Market risk reviews conducted in 2009 by the Department concentrated on banks with approval to use the IMA for regulatory reporting, while a review of the trading activities on one bank was also conducted. No new applications for using the IMA were received or processed.

reviews focus on changes in the sources of risk facing banks

In 2009 an annual review of the trading activities of IMA banks was supplemented by additional quarterly reviews. These reviews focus on changes in the sources of risk facing banks and their reaction in the form of changes in strategy, products, systems, structure, risk limits and capital. Recent performance of trading income generation and effectiveness of risk controls are also examined. The reviews complement the data already received by the Department in the form of regulatory returns and other prudential requirements of IMA banks such as monthly back-testing and stress-testing results. A total of 16 on-site meetings in the form of IMA annual reviews, quarterly reviews and treasury assessments were conducted.

2.3.3.1 Key findings

Key findings included the following:

Operational issues that resulted in poor performance of the VaR model became evident at some banks during the period and the multiplication factor used to prescribe the amount of capital a bank is required to hold was raised for those banks. A dramatic attenuation in market volatilities and consolidation among trading banks' counterparties, led to a general downscaling of trading activity, resulting in many banks struggling to achieve earnings targets from trading activities. Apart from the effects of the economic recession, announcements by international regulatory bodies on proposed new and changed regulations drove most of the retraction of banks and their counterparties from trading appetite.

Banks' exposures to equities that are generally held for investment purposes are included in the banking book for accounting purposes. From a regulatory perspective they receive capital treatment that is independent of the market risk charge and is more punitive, with the risk weighting ranging between 100 and 400 per cent. Fourteen banks

reported exposures of this nature in the course of 2009. Capital charges under these regulations contributed to approximately 5,2 per cent of banks' total capital requirements. For supervisory purposes, equity risk is overseen alongside market risk. Capital held for market risk made up approximately 2,3 per cent of the total capital requirement for the banking sector during the year.

capital held for market risk made up approximately 2,3 per cent of the total capital requirement

2.3.4 Thematic reviews of liquidity risk management and asset and liability management practices

Liquidity problems that brought an end to otherwise solvent and active banks in the US and UK in 2008 led the Department to pay closer attention to the management of liquidity risk and interest rate risk in banks. Liquidity risk management formed the basis of the Department's annual meeting with the boards of directors of banks during 2009. The Department required banks' senior management to assess their bank's compliance with principles for liquidity risk management as set out in the Basel Committee's paper Principles for Sound Liquidity Risk Management and Supervision. In addition, the Department initiated a thematic review of the asset and liability management (ALM) process at banks, examining the durability of liquidity risk management in the current turbulent financial climate and in the future under increasingly stressed circumstances.

the Department initiated a thematic review of the asset and liability management at banks

Under the ALM theme, both liquidity risk and interest rate risk were reviewed. A questionnaire was used to establish the fundamental drivers, controls and governance of ALM at each bank in an off-site assessment. Performance, trends and the structural nature of these risks were examined on the basis of regulatory return data received by the Department. An overall picture of the ALM at banks could then be ascertained. A decision was made, based on the basis of a bank's size, its systemic relevance or apparent weakness in its ALM, to follow up the off-site analysis with an on-site review. Findings were communicated with banks' management and included a need for the further strengthening of liquidity management practices and increased frequency of oversight over liquidity risk indicators. In a few remote instances the concept 'liquidity risk' was not well understood by the banks concerned. Further work in this area will continue in 2010.

Generally, banks in South Africa afford liquidity risk the degree of attention it requires under normal circumstances. However, banks' reaction to idiosyncratic liquidity shortages could benefit from enhanced planning for funding shortages in stressed markets. The structure of the South African financial sector has inherent anomalies that dictate the dominant mechanisms for intermediation and, consequently, funding between institutions involved in the financial sector. The challenge for banks is to develop alternative funding avenues under stressed circumstances and to lengthen the term of their liability structure.

banks' reaction to idiosyncratic liquidity shortages could benefit from enhanced planning for funding shortages in stressed markets

2.4 Operational risk

2.4.1 Introduction

Operational risk is inherent in all business activities. Similar to big natural and man-made disasters, most people largely ignore operational risk until it happens. Operational risk has to be minimised, whereas credit and market risk is normally optimised as it contributes to banking income by virtue of a risk–reward relationship. The scope of operational risk is broad as is the base of operational risk management. Operational risk

management is a reflection of how a bank's management manages the business, and management weakness itself is a significant component of operational risk. The banking system is subject to the full ambit of operational risk which, by definition, is the risk of loss resulting from failed or inadequate processes, people, systems and external events.

the Department recognises the principle of proportionality

The Department promotes sound operational risk management practices at banks and banking groups since it, in turn, contributes significantly to enhancing the soundness of the banking system. In line with the Department's supervisory review and assessment programme, 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 within a bank or banking group. According to the Department's principles, each 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.

The work completed during 2009 can be summarised in the following three categories:

- Focused operational risk reviews.
- Processing of new applications.
- Feedback regarding the 2008 loss data collection exercise (LDCE).

2.4.2 Focused operational risk reviews

A number of focused operational risk reviews were carried out during 2009. The purpose of the reviews was, among other things, firstly to determine whether risk management policies and procedures banks had in place to identify, assess, monitor and control or mitigate operational risk were effective. Secondly, to determine whether those banks that were using one of the four approaches for calculating operational risk capital, namely the AMA, the standardised approach (TSA), the alternative standardised approach (ASA) or the basic indicator approach (BIA), are meeting the qualifying criteria, and qualitative and quantitative standards.

The reviews were carried out in line with the risk-based supervisory approach and principle of proportionality and typically focused on

- an update of changes in the business environment (with specific reference to internal and external fraud, pressure on processes, exposure to business continuity risk, outsourcing risk as a result of service providers, operational risk related to credit and market risk) and the bank's response to it from an operational risk perspective;
- a detailed review of the management information reports or "dashboards" used for operational risk management on a group consolidated, bank, major subsidiary and material business unit level; and
- for AMA banks, a detailed review of the scenario approval, governance process and specific scenarios used by the bank in the AMA.

2.4.2.1 Key findings

The main findings from the reviews are as follows:

- *Changes in the business environment*: Some banks were encouraged to monitor information technology (IT) system capacity (e.g., pressure on systems due to increased debt collecting), capacity and readiness to handle new processes (e.g., the National Credit Act) and IT-based distribution and service channels (e.g., Internet and mobile

telephone banking) more closely. The Department stated in its 2008 *Annual Report* that IT was an area that required more attention. This statement was echoed during the period under review. IT governance was also one of the important new issues incorporated into the *Report on Governance for South Africa – 2009* (the King III Code).

monitor the financial status of key suppliers

- *Key supplier watchlists*: The Department recommended that certain banks compile a key supplier watch list (similar to a credit watch list) and monitor the financial status of key suppliers. Banks were referred to the Basel Committee's 2008 LDCE report, Table S4, Panel G: Common scenario descriptions by business line and event type: execution, delivery and process management. One of the most common and severe scenarios in this category was the failure of suppliers or vendors.

- *Boundary issues*: With reference to boundary issues, certain banks were requested to confirm that
  - credit risk losses were excluded from the operational risk capital requirement and that they continued to be treated as credit risk for the purpose of calculating minimum regulatory capital;
  - operational risk/market risk boundary events were included in the scope of operational risk for regulatory capital calculation;
  - material operational risk-related credit risk losses were being flagged separately within the internal operational risk database (for internal loss data collection and risk management purposes); and
  - appropriate actions were taken to detect and rectify or to prevent all operational risk-related deficiencies that could, or had, exacerbated material credit risk losses.

continuously improve the qualitative characteristics of the operational risk management reports

- *Operational risk management information*: Banks were encouraged to continuously improve the qualitative characteristics (i.e., reliability, relevance, comparability and understandability) of operational risk management reports on a consolidated, subsidiary and business unit level. Qualitative characteristics are those attributes that make the information provided in operational risk management reports useful. If comprehensive, useful information does not exist, management may not be aware of the true operational risk condition of their bank and key governance players may be misled. The following are the requisite qualitative characteristics of operational risk information:[11]

requisite qualitative characteristics of operational risk information

  - *Relevance*: Information must be relevant because it influences the economic decisions of users by helping them to evaluate past, present and future events or to confirm or correct past assessments. The relevance of information is determined by its nature and material quality. Information overload, however, can force players to sift through a plethora of information for relevant details, making interpretation difficult.

  - *Reliability*: Information should be free from material errors and bias. The key aspects of reliability are faithful representation, priority of substance over form, neutrality, prudence and completeness.

  - *Comparability*: Information should be presented consistently over time and be congruous with related information and other entities or business units to enable users to make comparisons.

11 Based on the IASB's framework for the preparation and presentation of financial statements.

– *Understandability*: Information should be easily comprehended by users with reasonable knowledge of business, banking, economics, accounting and risk management, as well as the willingness to study the information diligently.

AMA banks to assess current practice in addressing scenario biases

- *Scenarios*: The Department requested the governance committees of AMA banks to assess current practice in addressing scenario biases. Scenario biases, when addressed in the scenario development process, typically include over-confidence, motivational, availability, partition, dependence and anchoring.

Furthermore, the Department requested the AMA banks' internal audit departments to include in their audit programmes for 2009/10 an audit of the design and operating effectiveness of scenario policies and procedures. The Department required that these audits include the documentation of the scenario elicitation process, the completeness of the scenario results and the transparency of the underlying processes used.

For the limited number of cases where the Department was not satisfied with the level, status, sophistication or practical application 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.

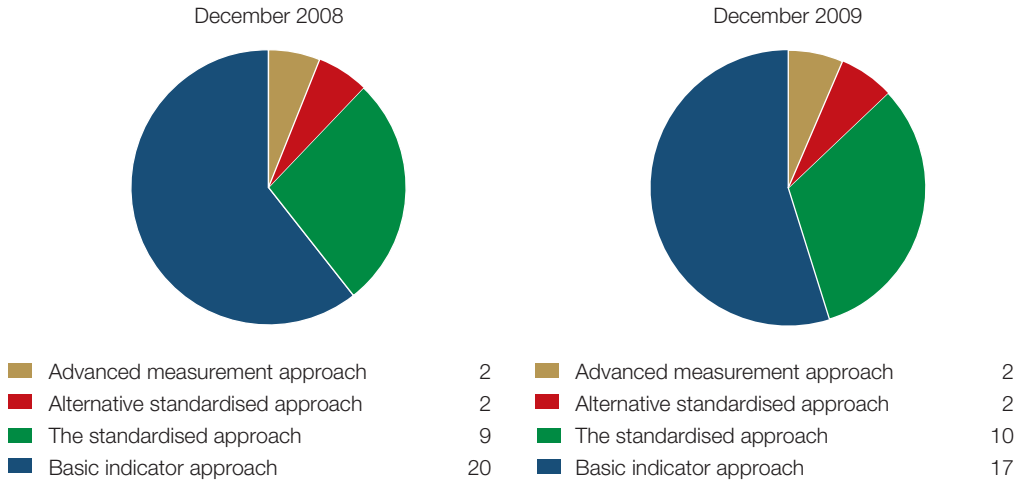
2.4.3 Processing of new applications

The Department received one application from a bank to adopt a more appropriate and sophisticated approach to calculate its operational risk exposure and regulatory capital. The application was in respect of TSA. The application and approval processes were similar to those followed in the previous years.[12] The applicant bank was granted approval to adopt the mentioned approach.

2.4.3.1 Status of banks per operational risk approach

The number of banks that were using the respective approaches for operational risk as at the end of 2009 was as follows:

Figure 2.2 Number of banks per operational risk approach



12 Refer to the Bank Supervision Department 2007 *Annual Report*, pages 33 and 34.

2.4.4 Feedback on the 2008 loss data collection exercise

During 2009 the Department provided participating South African banks with a customised analysis comparing their data with industry data at both the international, and where possible, regional or national levels.

2.4.4.1 Results from the 2008 loss data collection exercise

- *Background*: The 2008 LDCE was conducted by SIGOR. It was the first international effort to collect information on all four data elements that are used in the AMA for operational risk in the Basel II framework. The results were discussed in two related papers, namely *Results from the 2008 Loss Data Collection Exercise for Operational Risk* and *Observed Range of Practice in Key Elements of Advanced Measurement Approaches*.[13] The former paper focuses on internal loss data, scenario analysis and operational risk capital, business environment and internal control factors (BEICFs), and external loss data. The AMA range of practice results are presented in the latter paper.

  first international effort to collect information on all four data elements that are used in the AMA

  The LDCE and observed range of practice (ROP) results provide a unique opportunity to assess operational risk data and practices across regions, thus furthering SIGOR's goal of promoting consistency in the implementation of the Basel II framework. The findings also present an opportunity for banking institutions to compare their operational risk management frameworks with those of other institutions and to identify potential areas for improvement.

  The 2008 LDCE consisted of three parts. The first part, Attachment A, comprised templates for submission of internal loss data and scenario analysis data along with a series of questions to provide information on the processes underlying these two data elements. The second part, Attachment B, requested information on exposure indicators and capital estimates. Exposure indicators included consolidated assets, gross income, Tier 1 capital and business line gross income. The final part, Attachment C, contained ROP questions regarding operational risk modelling, external loss data and BEICFs. Participating banks were asked to submit their LDCE information to their national supervisors.The data collection and analysis process for the 2008 LDCE was structured to preserve the confidentiality of the data submitted using procedures employed in previous Basel Committee exercises, including the 2002 LDCE and QIS-4.[14]

  LDCE consisted of three parts

- *Feedback to participating South African banking groups*: After the July 2009 publication of the two papers, the Department provided participating South African banks with a customised analysis comparing their data with industry data at both the international and, where possible, regional or national levels. The results were used to benchmark a banking institution's loss experience and to gain a better understanding of the completeness of its data. In addition, participating South African banks received 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.

  range of practice information used to benchmark their practices against industry practices

13 The papers are available at http://www.bis.org/publ/bcbs160.htm.

14 www.bis.org. See results from the 2008 LDCE for Operational Risk, Annex A for additional discussion of data security procedures used for the 2008 LDCE.

results provide regional and international comparisons of the frequency and severity of the banking industry's loss experience

- *Loss data collection exercise results*: The primary objective of the exercise was to further both supervisors and banking institutions' understanding of outstanding operational risk implementation issues, and to promote consistency in addressing these issues across jurisdictions. The exercise was open to banking organisations at the group-wide level that were using or implementing one of the Basel II approaches for calculating operational risk capital. Participation was voluntary and banking institutions could choose to participate in the full exercise or submit information only for certain sections. The results provide regional and international comparisons of the frequency and severity of the banking industry's loss experience; scenario analysis practices and estimates; internal loss data and scenario analysis normalised by certain exposure indicators; and operational risk capital levels and the impact of adjustments (e.g., expected loss offsets, correlation and the use of insurance) on AMA capital.

- *Overview of participants*: The LDCE Table 2.1 provides an overview of the number of participants.

Table 2.1: Geographic distribution of participating banks per capital approach

Geographic location	Total number of participants	Participants by capital approach	
		AMA	Non-AMA
Australia	11	5	6
Europe (including South Africa)	60	20	40
Japan	18	7	11
North America	23	10	13
Brazil/India	9	0	9
Total number of banks	121	42	79

five South African banking groups participated

Five South African banking groups participated, two of which were AMA banks and three non-AMA banks. The requirement for a stand-alone geographic breakdown was that a location (country at national level or a region) should have more than three participating banks per capital approach. This requirement would ensure the confidentiality of a bank's data. Since South Africa had only two AMA participants, it was neither possible to have a stand-alone South African geographical location nor to be grouped with the Brazil/India geographical location (since Brazil/India had no AMA participants). By agreement with national supervisors, South African banks were included in the European geographical breakdown.

121 institutions from 17 countries participated in the exercise

A total of 121 institutions from 17 countries participated in the exercise. For the purposes of the LDCE paper, an institution's operational risk approach was considered as either AMA or non-AMA. Of the 121 institutions, 42 were AMA banks and 79 non-AMA banks. Of the non-AMA banks, 51 use TSA and 20 use the BIA. The remaining 8 non-AMA banks were not classified by approach, since the BIA and TSA were not available approaches in the US. Participating institutions were placed into one of five regions: Australia, Europe, Japan, North America and Brazil/India. Europe was the largest region by number of countries and number of participants. This region consists of Belgium, France, Germany, Italy, Luxembourg, the Netherlands, Poland, Spain, Switzerland, and the UK. For the reasons mentioned above, South Africa was also included in the European region for the purposes of this paper. The North American region included Canada and the US. The composition of the remaining regions is reflected by their titles.

- *Main findings*: Some of the paper's main findings are discussed below.[15] Additional results for internal loss data, scenario analysis and capital benchmarking are as follows:

  results for internal loss data, scenario analysis and capital benchmarking

  – Overall, banks have made considerable progress in the collection and use of internal loss data since the previous international LDCE was conducted in 2002.

  – The frequency of internal losses of €20 000 or more varies significantly across regions when the data are scaled by various exposure indicators. For example, the typical (median) Japanese bank has a much lower frequency of losses compared with other regions, while typical banks from North America and Brazil/India have a higher frequency of losses. This variation in internal loss frequency may explain some of the regional differences in the combination of data elements in the ROP results.

  – Despite the regional variation in loss frequency noted above, there is some consistency in the severity distribution of operational losses across regions.

  – Most banks' scenario data extend the tail of the loss distribution beyond the point at which they have experienced internal losses. In many banks the number of scenarios greater than €10 million is approximately 20 times larger than the number of internal losses that are greater than this amount.

  – Although the number of large scenarios significantly exceeds the number of large internal losses, the frequency of large losses implied by scenarios and internal data is broadly consistent.

  – AMA banks have a higher frequency of internal losses greater than €100 000 than non-AMA banks, even when the data are scaled by exposure indicators. Some of the differences may be explained by the fact that AMA banks generally are larger, more complex banks with more mature loss data collection processes.

  – Operational risk capital for non-AMA banks is higher than for AMA banks, regardless of the exposure indicator used for scaling. For the typical AMA bank, the ratio of operational risk capital to gross income (10,8 per cent) is significantly below the BIA alpha (15 per cent) and also below the range of TSA betas (12–18 per cent). Furthermore, the amount of capital relative to the frequency of large losses is generally higher at non-AMA banks than at AMA banks.

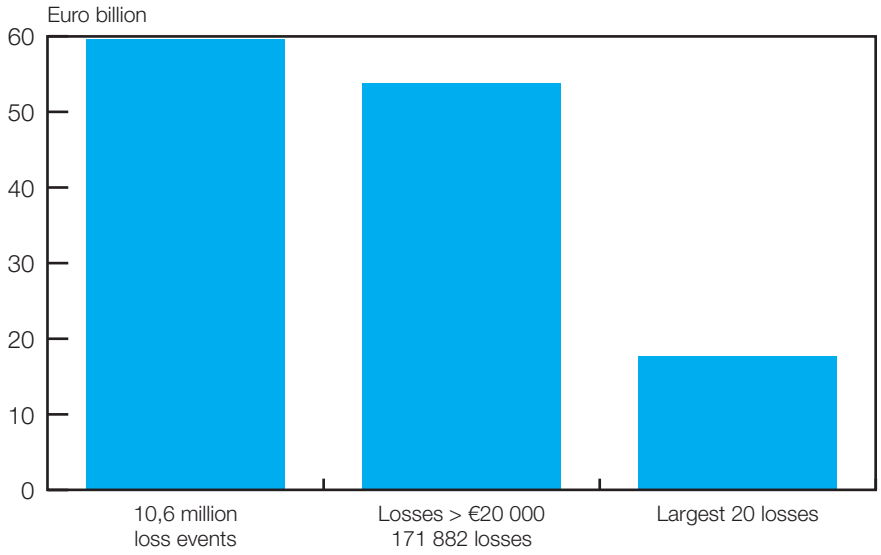
- *Internal loss data*: As most institutions provided data up to 31 December 2007 or 31 March 2008 in the 2008 LDCE, results do not reflect the impact of the recent turmoil in the financial markets. Participating institutions were asked to submit a minimum of three years of internal loss data that they viewed to be reasonably complete.

  As illustrated in Figure 2.3 on page 60, participating institutions submitted a total of 10,6 million internal losses with an overall loss amount of €59,6 billion. For losses of €20 000 or more, 171 882 losses were submitted totalling €53,7 billion. The 20 largest losses collected for this exercise totalled €17,6 billion and accounted for 29,5 per cent of the overall loss amount. The majority of losses of €20 000 or more was submitted by institutions in Europe and North America.

  20 largest losses collected for this exercise totalled €17,6 billion

15 As taken from the Basel Committee's 'Results from the 2008 LDCE for operational risk', July 2009, pages 1–2.

Figure 2.3 Internal loss data



Some other notable findings for internal loss data are as follows:

- The business line with the highest loss frequency and total loss amount was retail banking. This result is consistent with the results from the 2002 LDCE and reflects that retail banking continues to be a primary business line for most participants.

event types with the highest frequency of losses were execution, delivery and process management

- As anticipated, the Basel II operational risk event types[16] with the highest frequency of losses were execution, delivery and process management, followed by external fraud.
- The Basel II operational risk event type with the highest annual loss amount was clients, products and business practices. Consistent with the 2002 LDCE, there were a few losses reported for business disruption and system failures, and damage to physical assets.
- The total loss amount for the typical bank for losses of €20 000 or more was €155 555 per annum for each billion euros in consolidated assets. For the typical AMA bank, the loss amount was €196 655, which was higher than the loss amount of €116 838 for the typical non-AMA bank.
- Insurance recoveries were reported for a small proportion of losses, with the typical bank reporting insurance recoveries for 2,1 per cent of losses.

data enables national supervisors to compare scenarios across jurisdictions

- *Scenario data*: The collection of scenario data enables national supervisors to compare scenarios across jurisdictions, and to assess how scenarios relate to internal loss data. The main findings for scenario data include the following:
  - Of the 121 LDCE participants 65 submitted a total of 9,687 scenarios.
  - The median number of scenarios used in participating banks' operational risk frameworks was 115 scenarios. There was significant variation across banks and regions in both the number and size of scenarios used, reflecting different uses and levels of reliance on scenarios for quantification and risk management.

16 The seven Basel II operational risk event types are: (i) internal fraud; (ii) external fraud; (iii) employment practices and workplace safety; (iv) clients, products and business practices; (v) damage to physical assets; (vi) business disruption and system failures; and (vii) execution, delivery and process management.

  - The typical bank had the largest proportion of scenarios in the unallocated business line (36 per cent), which includes group-wide scenarios, and in retail banking (28 per cent). By event type, the typical bank had the highest proportion of scenarios related to execution, delivery and process management (29 per cent) and clients, products, and business practices (20 per cent).
  - Most banks' scenario data extends the tail of the loss distribution beyond the point at which they have experienced internal losses.

- *Capital estimates*:

  - The typical AMA bank has a ratio of operational risk capital relative to gross income that is lower than the 15 per cent alpha for the BIA and the range of betas (12–18 per cent) used in TSA.
  - For AMA banks,
    - use of insurance as a capital offset is limited with only a few banks calculating such an offset;
    - expected losses account for about 11 per cent of operational risk capital at the typical participating bank. The use of expected loss offsets is limited, with half of the participants taking no capital offset, and three quarters of participants taking an offset of less than 1 per cent of operational risk capital;
    - the modelling of dependence at the typical bank results in a modest (8,3 per cent) increase in operational risk capital relative to the assumption of full independence; and
    - the typical bank decreases operational risk capital by 22,4 per cent due to diversification effects across operational risk categories.

expected losses account for about 11 per cent of operational risk capital

2.4.4.2 Range of practice results

The Basel II framework envisions that, over time, the operational risk discipline will mature and converge towards a narrower band of effective risk management and risk measurement practices. Understanding the current range of observed operational risk management and measurement practices both within, and across, geographic regions contributes significantly to SIGOR's efforts to establish consistent supervisory expectations. Through the analysis of existing practices, SIGOR is better able to promote the maturation of operational risk practices and support supervisors in developing more consistent regulatory expectations. As such, the Range of Practice report provides supervisors with an opportunity to engage banks individually in discussions of their operational risk management and measurement practices relative to their peers in domestic and international markets.

- The Range of Practice report
  - frames the discussion of observed practice in the management and measurement of operational risk, and identifies both emerging effective practices and practices that are inconsistent with supervisory expectations;
  - highlights supervisory issues encountered in the supervisory reviews of operational risk, whether related to governance, data or modelling; and
  - provides a resource for both banks and national supervisors to use in their respective implementation processes and ongoing development or monitoring of AMA frameworks.

The diversity in operational risk practices is consistent with the evolutionary nature of operational risk management as an emerging risk management discipline. To encourage growth in the discipline, the Basel II framework intentionally provides banks with a significant degree of flexibility in developing operational risk management frameworks under the AMA. This flexibility, however, does not suggest that supervisors are prepared

diversity in operational risk practices is consistent with the evolutionary nature of operational risk management

to accept any practice or process that the banks adopt in implementing their AMA frameworks. On the contrary, supervisors are concerned with identifying and encouraging bank operational risk practices that achieve robust and effective operational risk management and measurement systems that are consistent with the objectives of soundness and a level playing field.

- *Overview of participants*: For reporting ROP results, SIGOR decided to use only the responses from banks that had been accredited to use an AMA framework and those that member supervisors deemed to be serious AMA candidates. Consequently, the results included in the report highlight reasonably well-established and mature practices.

Table 2.2 Geographic distribution of participating banks

Geographic location	Number of participating banks
Australia	5
Europe (including South Africa)[17]	20
Japan	7
North America	10
Total	**42**

wide and diverse range of practices in key governance, data and modelling processes

- *Conclusions and observations*: The Range of Practice report states that SIGOR has seen a maturation of practice in many areas of operational risk management and measurement. Another important observation SIGOR makes is that there continues to be a wide and diverse range of practices in key governance, data and modelling processes that raise numerous issues regarding the consistency and reliability of AMA capital estimates in the industry. These key issues are listed below. With respect to each, SIGOR believes that further enhancement and evolution of practice is appropriate. Towards this end, SIGOR will continue to engage the industry in discussion to facilitate convergence of practice, where appropriate, and will undertake policy initiatives to clarify supervisory expectations, when necessary. Key issues identified included the following:

  – *Internal governance*

    o *Scenario analysis*: The current range of practices identifies a lack of consistent controls to address scenario analysis bias. SIGOR encourages the industry to continue to develop and improve AMA governance standards for scenario analysis, and will formulate additional guidance if needed to assist the industry.

    o Maintaining the integrity of BEICFs: There is little use in internal or external audit reviewing the integrity of BEICFs. Supervisors expect more active internal or external audit involvement in the review of a bank's use of BEICFs as AMA frameworks continue to mature.

  – *Data*

    o *Legal event losses*: Loss amounts from legal events tend to be used for risk measurement purposes after the legal events have been entered into the loss database. There is, however, a broad range of practices for when the loss amounts from legal events are used as a direct input into the model that

17 As agreed to by national supervisors, the two South African AMA banks were included in the European geographical breakdown. The reason for this was discussed in section 2.4.4.1 of this report.

quantifies operational capital, which raises questions of transparency and industry consistency in how these operational risk exposures are quantified for capital purposes. SIGOR encourages less variation in how legal settlements are treated and recorded as operational risk loss events, given their considerable impact on regulatory capital modelling.

less variation in how legal settlements are treated and recorded as operational risk loss events

- o *Gross versus net internal loss amounts*: The absence of definitions in the Basel II text for 'gross loss' or 'recoveries' and varying loss data collection practices among AMA banks results in differences in the loss amounts recorded for similar events. This practice may lead to potentially large differences in banks' respective capital calculations. The range of practices is broad, particularly with regard to how AMA banks use 'net losses (gross loss net of non-insurance recoveries)' for risk quantification purposes. SIGOR believes a more consistent practice to the use of 'net losses' is needed.

- o *Data collection thresholds*: Data collection thresholds vary widely across institutions and types of activity. Some institutions prefer to apply high thresholds that avoid enlarging their databases with events that are judged to be immaterial, while others choose lower thresholds in order to obtain more information for risk management purposes. Banks should be aware of the impact that their choice of thresholds has on operational risk capital computations. SIGOR believes the differences in how internal loss data are used or restricted in AMA capital models are significant and that the range of practice should be narrowed.

data collection thresholds vary widely across institutions and types of activity

– *Modelling or quantification*

- o *Granularity*: The granularity of an AMA reflects the degree to which the framework separately models individual operational risk exposures. At present there is considerable diversity across banks in the choice of granularity of their models, which may be driven as much by the modeller's preferences as by actual differences in operational risk profiles. Under Basel II the number of operational risk categories employed in an AMA model should be sufficient to capture the major drivers of operational risk within the institution. Banks should test the relevance of their choice of classes in order to ensure the homogeneity of the classes and verify that other divisions would not have been better suited to their risk profile. SIGOR also believes it is desirable to progressively narrow the current range of practices in terms of how operational risk categories are used in modelling operational risk capital.

- o *Dependence or correlation*: There remains a wide range of practices applied by AMA banks in their approach to, and modelling of, dependence or correlation. Given the uncertainties in calculating correlations, supervisors encourage more robust methods for calculating meaningful dependence relationships among operational losses. In addition, when estimating capital, AMA institutions should demonstrate that their models do not underestimate the probability of joint extreme events and, given these uncertainties, should include a suitable margin of conservatism in the calculation of dependence.

- o *Distributional assumptions*: Nearly all banks model the severity and frequency distributions separately. While it is common for banks to use the Poisson distribution for estimating frequency, there is still a very wide range of practices in the choice of the severity distribution. SIGOR has identified principles in the

paper *Observed range of practice in key elements of advanced measurement approaches*.[18] that will help institutions choose distributions that are consistent with the underlying data. SIGOR believes banks should employ these or similar principles as part of their normal process to test the appropriateness of the choice of distributional assumptions.

- *Use of the four elements*: The combination and weighting of the four elements are a significant issue for many banks, given the many possible combination techniques. This is an area where the range of practices is particularly broad and can complicate comparisons among banks. While the industry has made progress in the use of BEICFs, many banks are still not using them in their measurement frameworks. Scenarios are widely used. However, their use in risk measurement methodologies varies considerably from bank to bank. SIGOR believes that further convergence of practice in these areas is desirable. In addition to having a credible, transparent, well-documented and verifiable approach for the weighting of the four elements in their measurement system, banks should understand the impact that every element has on their capital calculation and the role that the element has in the measurement framework.

internal validation of model inputs, methodology and outputs

- *Validation*: Given the multiple measurement frameworks and the "model risk" inherent in the estimation of operational risk exposures, SIGOR believes banks should perform additional activities in order to ensure the soundness of the capital measurement process. These activities may include internal validation of model inputs, methodology and outputs by reviewers with suitable expertise; more internal (or external) audit involvement; sensitivity and uncertainty analysis of capital (testing the accuracy of the capital estimate); and back-testing and benchmarking comparisons.

2.4.5 Conclusion

Although the Department is generally satisfied with the management of operational risk from a sectoral perspective, there is room for improvement. Banks are again encouraged to monitor the progression of operational risk towards the act of managing risk rather than merely 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. Improvements in operational risk will depend on the voice of operational risk managers being heard more clearly and their warnings acted upon. A constant challenge for management is to validate that sufficient assurance can be placed on the design and operating effectiveness of the operational risk framework, policies, procedures and internal controls to identify, assess, monitor and control or mitigate operational risk to which the entity is exposed.

2.5 Pillar 2: Internal capital-adequacy assessment process

2.5.1 Introduction

the adequacy of a bank's capital needs to be assessed by both the bank and the Department

In terms of the Banks Act, 1990, banks and banking groups 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. To put into practice the aforementioned, the adequacy of a bank's and banking group's capital needs to be assessed by both the bank and the Department.

18 The paper is available at http://www.bis.org/publ/bcbs160.htm.

In terms of the Banks Act, 1990 and the Regulations relating to Banks,
- banks and banking groups are required to perform an ICAAP; and
- the Department is required to carry out a supervisory review and evaluation process (SREP).

2.5.2 Focus areas during 2009

As stated in the 2008 *Annual Report*, the focus of the ICAAP reviews for 2008 was on the five largest banks. The Department concluded in the report that future work would focus on the following:

- Thematic review of the larger banks in 2009.
- A review and discussion of the smaller banks' ICAAPs during 2009.

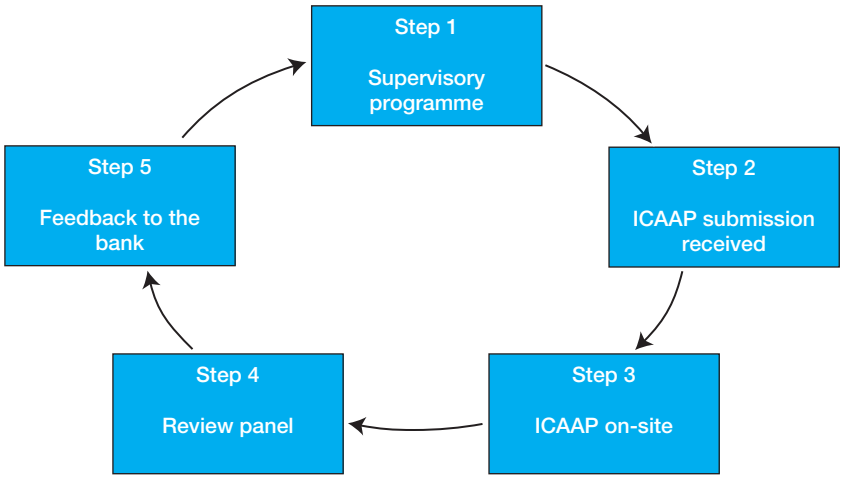
Pillar 2 stress testing would be a focus area for the thematic reviews in 2009

Consequently, it was decided that Pillar 2 stress testing would be a focus area for the thematic reviews in 2009. Large banks that made use of the advanced approaches for credit and market risk were targeted for the thematic review which is covered in more detail in section 2.7.4 of this report. In respect of the smaller banks' ICAAPs, the majority of these were visited and assessed. The Department intends to complete the process in 2010.

2.5.3 Process for the assessment of an internal capital-adequacy assessment processes

The ICAAP review process followed for the smaller banks was similar to the one followed for the five largest banks in 2008. In the Department a typical ICAAP process consists of the following steps:

Figure 2.4 Process for the assessment of an ICAAP



Step 1: The supervisory programme is communicated to the bank together with an ICAAP submission and on-site dates.

Step 2: The Department receives the ICAAP submission on the due date. Desktop analysis of the submission is done. Communication takes place between the Department and the bank to clarify specific areas (i.e., where areas of

uncertainty exist with regard to the submission or more clarity is requested). The information received is compared with the information gathered from the SREP cycle (as discussed in the Department's 2007 *Annual Report,* page 28–30).

Step 3: The results of the desktop analysis and ICAAP submission are discussed with the bank. The bank and the Department challenge each other on their findings to ensure that a structured dialogue takes place. A conclusion is reached on the way forward. More detailed reviews may be requested on specific areas.

Step 4: The conclusion is presented to the Department's review panel for consideration. The review panel decides on the conclusion to be presented to the bank.

Step 5: The conclusion is presented to the bank and the bank is afforded an opportunity to comment.

a structured dialogue on the following areas of the ICAAP is very useful

Of paramount importance in the above-mentioned process is Step 3 which culminates in the Department's detailed interaction with the bank. It is therefore important that the aspects covered in Step 3 are highlighted. The Department has found that a structured dialogue on, among other things, the following areas of the ICAAP is very useful:

- *An executive summary of the bank's ICAAP focusing on the*
  - main findings of the ICAAP;
  - main business activities;
  - financial performance;
  - material risk exposures; and
  - breakdown of the regulatory capital requirement versus the internal bank capital requirement.

- *Corporate governance*: The review, challenge and approval process of the ICAAP, together with an overview of the corporate governance philosophy and environment of the bank.

- *Statement of risk appetite*: The statement of the bank broken down into its quantitative and qualitative elements, including a discussion of how the statement of risk appetite is filtered into the risk and business units of the bank.

- *Material risk exposures*: In respect of the risk areas, a discussion is held with the bank as to the manner in which it identifies and outlines its material risk exposures. The following subsets of risk are covered, that is, management, monitoring, measurement, mitigation as well as methodologies relating to the following main categories as per the Basel II text:

  - Pillar 1 risks covered (i.e., credit, market and operational risk).
  - Pillar 1 risks not fully covered (i.e., residual and operational risk).
  - Pillar 2 risks not covered (i.e., interest rate risk in the banking book and liquidity, concentration, strategic, reputational and pension fund deficit risk).

- *Capital planning*: The bank's "baseline" capital plan over the medium to long term (normally three to five years), together with assumptions used such as retention ratio, dividend cover policy and sustainable asset growth rate.

- *Stress and scenario testing*: Stress and scenario tests undertaken and the rationale for their choices, such as the methodology and assumptions used in each scenario tested, and how the institution would manage its business and capital so as to ensure that minimum regulatory requirements are met at all times and, where

mitigating actions are relied on, to provide the results of the stress tests on both a gross and net controls and credible manageable action basis. It is also important that banks are able to demonstrate the manner in which the stress and scenario testing relates to the "baseline" capital plan in terms of minimum required capital, risk-weighted assets and liquidity risk.

- *The use test*: This is the extent to which the ICAAP is used by the bank in the allocation of capital, pricing of products and performance measurement such as risk-adjusted return on capital, bonus payments and strategy determination.

2.5.4 Interim conclusions reached stemming from the reviews performed in 2009

Although some outstanding work remains in respect of the review of the smaller banks, the Department is in a position to comment on the main preliminary conclusions reached thus far, which are as follows:

- The ICAAPs of the smaller banks need to be commensurate with the nature and extent of the business activities of the bank. It was found that in the majority of the cases, the smaller banks used the Pillar 1 regulatory definition of required and qualifying capital for their internal capital purposes. The Department indicated to these banks that (without the need to invest in expensive technology) adjustments to the banks' required capital could be more reflective of the banks' actual capital and risk position (i.e., regulatory minimum required capital does not necessarily mean adequate capital).

- Pillar 2 risks were generally not adequately capitalised. The reasons were mostly a lack of sophisticated models to estimate the capital requirements (e.g., models used to determine capital requirements for interest rate risk in the banking book, credit concentration risk and business risk), as well as common international standards for estimating the capital requirements for these risk areas. In some cases the lack of an internationally acceptable definition of some of the risk areas (such as business risk) also existed. In this regard, two risk areas should be highlighted, namely interest rate risk in the banking book and credit concentration risk, which were of specific relevance to the smaller banks in the system.

  Pillar 2 risks were generally not adequately capitalised

  – Interest rate risk in the banking book for some of the smaller banks was substantial because of the large amount of capital invested in the institution, which is non-rate-sensitive (this results in a natural interest rate risk mismatch). The risk is furthermore exacerbated by the impact of a sudden rate drop on variable rate assets, coupled with low-interest deposits, resulting in a significant margin squeeze.

  – Owing to the size of the smaller banks' balance sheets, concentration risk is also substantial. To mitigate this risk in most of the cases the Department applied a large-exposure capital requirement for exposures that were in excess of 25 per cent of the bank's net qualifying capital and reserves. This requirement was in addition to the minimum required capital as estimated by the Department in its Pillar 2b capital add-on.

- Capital planning, and stress and scenario testing could be enhanced significantly. In its communication with smaller banks, the Department stated that stress and scenario testing for smaller banks did not necessarily have to adopt sophisticated macroeconomic models, but simple stresses could be performed, such as a standardised adverse parallel-rate shock for interest rate risk, a name credit concentration risk shock or a shock in the loan-to-value ratios of the advances portfolio of these smaller banks.

- Owing to the conservative nature of these banks, liquidity risk appeared to be covered adequately as substantial amounts of excess cash were normally kept on the balance sheets.

2.6 Developments in respect of Pillar 3 disclosure

2.6.1 Key activities during 2009

With regard to Pillar 3 disclosure, the Department determined and performed an analysis of the level of disclosure by banks in South Africa. Banks that were found not to be disclosing appropriately and where the frequency of disclosure was not in accordance with the provisions of regulation 43 of the Regulations relating to Banks were identified and formally informed by the Department of their non-compliance and/or of those areas where deficiencies were identified. Emphasis was placed on small and medium banks in terms of the analysis of the disclosures.

Most of the South African branches of foreign institutions requested that they be exempted in terms of regulation 43 (3) of the Regulations relating to Banks. In this regard a proposal relating to the disclosure requirements of branches of foreign institutions was submitted to the Policy Committee of the Department. It was agreed that branches of international banks would be subject to disclosure requirements, but that these requirements would be less onerous than those of local banks. The process of drafting a revised policy document and a directive to be issued to banks will be finalised during 2010.

a Pillar 3 in-house disclosure template was created

A template was developed in order to analyse banks' Pillar 3 disclosures. The purpose of the disclosure template is to benchmark the Pillar 3 disclosure requirements of banks against the requirements of the Regulations relating to Banks and best practice applied by the industry. This benchmarking process will be a focus area in 2010.

Internal training was provided to the Department's staff to enhance their knowledge and understanding of Pillar 3 disclosure.

2.6.2 Overview of the guidance or recommendations issued by international standard-setting bodies

In its press release dated 13 July 2009, the Basel Committee announced enhancements to the Basel II capital framework. In respect of Pillar 3 these enhancements entailed the following six areas:

- Securitisation exposures in the trading book.
- Sponsorship of off-balance-sheet vehicles.
- The internal assessment approach (IAA) for securitisations and other asset-backed commercial paper liquidity facilities.
- Resecuritisation exposures.
- Valuation with regard to securitisation exposures.
- Pipeline and warehousing risks with regard to securitisation exposures.

These disclosures are intended to complement the other two pillars of the Basel II framework by allowing market participants to assess the capital adequacy of a bank

through key pieces of information on the scope of application, capital, risk exposure and risk assessment process.

proposed enhanced disclosure requirements will help to avoid market uncertainties about the strength of banks' balance sheets

The Basel Committee's proposal includes certain disclosure requirements that are not solely related to the understanding of Pillar 1 capital requirements (e.g., disclosures concerning a bank's sponsorship of off-balance-sheet vehicles). These are intended to help market participants better understand a bank's overall risk profile. The Basel Committee is of the view that these proposed enhanced disclosure requirements will help to avoid a recurrence of market uncertainties about the strength of banks' balance sheets related to their securitisation activities.

additional disclosure requirements for raising the transparency of the capital base

Subsequent to the aforementioned press release the Basel Committee issued a consultative document in December 2009 entitled *Strengthening the Resilience of the Banking Sector*. This document proposed, among other things, additional disclosure requirements for raising the transparency of the capital base. To this end, the Basel Committee was of the view that the disclosure provided by banks about their regulatory capital bases was frequently deficient. The Basel Committee is of the view that often there is insufficient detail on the components of capital, making an accurate assessment of its quality or a meaningful comparison between banks difficult. Furthermore, reconciliation with the reported accounts is often absent. Disclosures that may, among other things, be required in respect of the capital base are as follows:

- A full reconciliation of all regulatory capital elements back to the balance sheet in the audited financial statements.
- Separate disclosure of all regulatory adjustments.
- A description of all limits and minimums, identifying the positive and negative elements of capital to which the limits and minimums apply.
- A description of the main features of capital instruments issued.
- Banks that disclose ratios involving components of regulatory capital (e.g., "Equity Tier 1", "Core Tier 1" or "Tangible Common Equity" ratios) should include a comprehensive explanation of how these ratios are calculated.

In respect of ECAIs, it is proposed that an ECAI should disclose its code of conduct; its compensation arrangements with assessed entities; its assessment methodologies, including the definition of default, the time horizon and the meaning of each rating; the actual default rates experienced in each assessment category; and the transitions of the assessments, for example, the likelihood of AA ratings becoming A ratings over time.

detailed requirements for the computation of the leverage ratio are proposed

Certain detailed requirements for the computation of the leverage ratio are also proposed. The Basel Committee is of the view that the transparency and disclosure of the leverage ratio will be important in gaining credibility and market acceptance. Stronger disclosure requirements on a bank's or banking group's provisioning policies are also proposed.

2.6.3 The Department's response to guidance or recommendations made

In keeping with the Department's objectives to maintain its legislative and regulatory framework up to date and relevant, these recommendations will be considered in future amendments to the aforementioned framework.

2.7 Stress testing

2.7.1 Introduction

stress testing is a key tool used by the regulator

Stress testing, as defined by the BIS[19] is a risk management technique that is used to evaluate the potential effects of a specific event and/or movement in a set of financial variables on an institution's financial condition. As capital resources fall and as regulatory capital requirements are likely to rise in times of stress, stress testing is a key tool used by the regulator in understanding the appropriate level of regulatory capital to ensure that banks remain solvent during difficult times. From a supervisory perspective, it is of paramount importance that the Department objectively establishes that South African banks are capitalised adequately. In this regard, the capital buffer, as confirmed in the stress-testing approach, forms a major element.

It is necessary for banks and other financial institutions to hold substantial capital buffers to protect themselves against large unexpected losses. Shareholders, investors and depositors need to be confident that banks will not become distressed, whatever the future state of the economy. Stress testing is an important input to the capital-adequacy process and decisions concerning the adequacy of capital buffer requirements.[20]

2.7.2 International stress-testing developments

one of the problems of the global financial market crisis was inadequate stress testing

The Basel Committee document titled the *Principles for Sound Stress Testing Practices and Supervision*, published in May 2009 was an outflow of the examination of the stress-testing practices of large internationally active banks. The document reveals, among other things, that one of the problems of the global financial market crisis was inadequate stress testing. It states: "The depth and duration of the financial crisis has led many banks and supervisory authorities to question whether stress-testing practices were sufficient prior to the crisis and whether they were adequate to cope with rapidly changing circumstances."[21] A direct link to the buffer (as per the individual capital requirement framework of the Department) is also established. In this regard it states: "Stress testing alerts bank management to adverse unexpected outcomes related to a variety of risks and provides an indication of how much capital might be needed to absorb losses should large shocks occur."[22]

The principles relate to the sound governance, design and implementation of stress-testing programmes at banks, and highlight weaknesses in such programmes, particularly the financial crisis and the expectations for the role and responsibilities of supervisors when evaluating banks' stress-testing practices.

stress testing is a key tool in countering procyclicality

As mentioned previously in this report, the Basel Committee also published a consultative document in December 2009 entitled *Strengthening the Resilience of the Banking Sector*,[23] with a view to strengthening the global capital framework. Stress testing is covered as part of the requirements for counterparty credit risk (especially paragraphs 171 to 173) and is a key tool in countering procyclicality.

The failure of stress testing to prevent the economic crisis was reviewed during 2009 in order to better understand its shortcomings and to prevent future occurrences. The BIS

19 http://www.bis.org/publ/cgfs24.pdf.

20 Commonly referred to as 'Pillar 2 stress testing'.

21 https://www.bis.org/publ/bcbs155.pdf?noframes=1 – page 1.

22 https://www.bis.org/publ/bcbs155.pdf?noframes=1 – page 1.

23 http://www.bis.org/publ/bcbs164.htm.

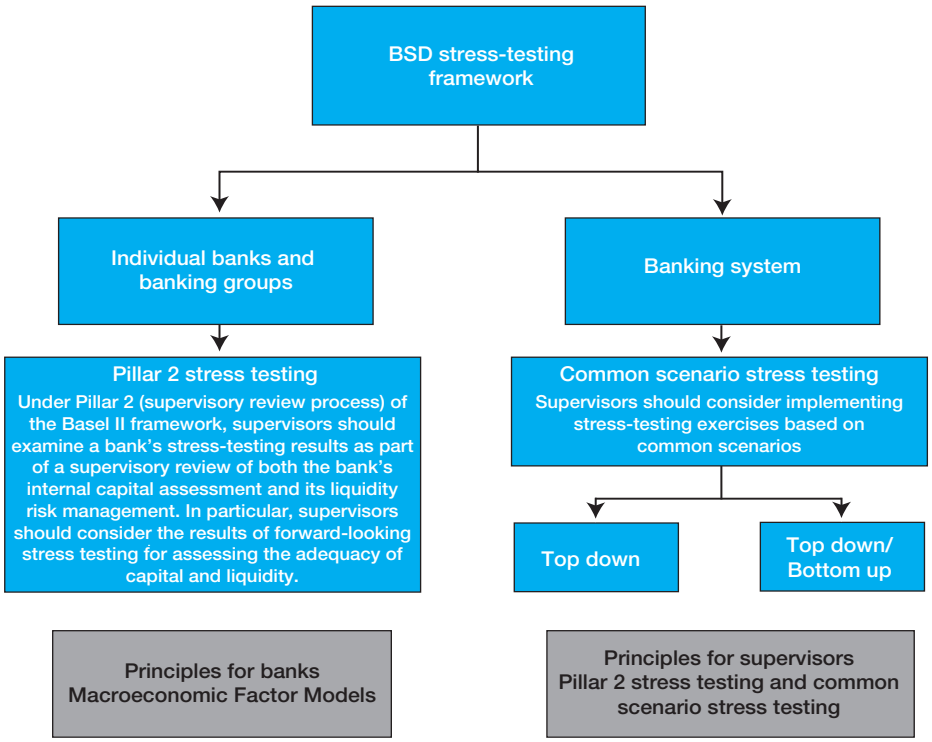
published such a review in its December 2009 quarterly review.[24] Furthermore, in December 2009 the Financial Services Authority (FSA) UK published its final rules on stress testing in Policy Statement 20/09 which includes the requirement for firms, regulated by the FSA, to perform reverse stress testing.[25]

The year under review was also marked by several common global scenario stress-testing[26] exercises. Most notable among these was the Supervisory Capital Assessment Program (SCAP),[27] conducted among the 19 largest US bank holding companies and the CEBS EU-wide stress-testing exercise, based on a sample of 22 major European banks. The principal difference between these two exercises was that the SCAP focused on the capital adequacy of the individual bank holding companies, including publishing the individual results,[28] whereas the CEBS exercise focused on the aggregate information, with no objective to assess individual banks recapitalisation needs.[29]

2.7.3 Overall stress-testing framework

The overall stress-testing framework of the Department consists of the following major elements as set out in Figure 2.5.

Figure 2.5



24 http://www.bis.org/publ/qtrpdf/r_qt0912.htm. Macro stress tests and crises: what can we learn? by Rodrigo Alfaro and Mathias Drehmann.

25 http://www.fsa.gov.uk/pubs/policy/ps09_20.pdf.

26 A common scenario stress-testing exercise is when the supervisor (or another body) prescribes the same stress testing scenario to banks in their jurisdiction. Such an exercise is part of the expectations of supervisors introduced in the principles for sound stress-testing practices and supervision, specifically principle 20.

27 http://www.federalreserve.gov/newsevents/press/bcreg/20090506a.htm.

28 http://www.federalreserve.gov/newsevents/press/bcreg/20090507a.htm.

29 http://www.c-ebs.org/News--Communications/Latest-news/CEBS-press-release-on-the-results-of-the-EU-wide-s.aspx.

Pillar 2 stress testing informs the Department whether the capital buffers of the individual banks are sufficient

The stress-testing framework consists primarily of two main work streams. In the first work stream the focus of stress testing is on banks. This process forms part of the Pillar 2 ICAAP assessment. The risk focus is on the entire spectrum of risk covered in, among other things, the economic capital framework of the bank. The outcome of the Pillar 2 stress testing informs the Department whether the capital buffers of the individual banks are sufficient (i.e., a conclusion on the capital buffer requirement). The thematic review undertaken with the four largest banks in South Africa during 2009 focused on Pillar 2 stress testing.

The second work stream deals with common scenario stress testing. Two areas are investigated, namely a top-down rudimentary approach, where regulatory data are used to perform stress testing based on a common scenario, and a top-down and bottom-up approach that makes use of the banks' macroeconomic factor models to generate the stress-testing results based on the common scenario. It is important to note that with regard to the top-down and bottom-up approach, the Department utilises the information obtained from the first work stream in order to construct a common scenario and top-down and bottom-up stress-testing methodology. Interaction also takes place with the industry and the Research Department of the Bank on the construction of a severe common scenario to be used. Banks are then required to apply the aforementioned scenario in their macroeconomic factor models and to report the results, in a specified format, to the Department.

2.7.4 Thematic stress-testing reviews undertaken in 2009

As mentioned above, as a result of the ICAAP reviews undertaken in 2008 and conclusions reached subsequent to the reviews, stress testing was identified as an area that would require further development by the majority of the IRB banks. The Department also anticipated that the work performed on Pillar 2 stress testing would be invaluable for the common scenario stress testing to be conducted in 2010.

2.7.4.1 Pillar 2 stress testing

Pillar 2 stress testing forms part of the ICAAP assessment process

Pillar 2 stress testing forms part of the ICAAP assessment process and is ideally undertaken on a quarterly basis by banks. The risk focus of Pillar 2 stress testing is on the full spectrum of risk covered, among other things, in the economic capital framework of the banks. The outcome of the Pillar 2 stress testing focuses on the capital adequacy of the individual banks and whether their capital buffers are sufficient, given a severe stress scenario.

Only the banks that had adopted the advanced approaches for credit and market risk and that had implemented fairly sophisticated economic capital models were reviewed.

The foundation of the Department's Pillar 2 stress-testing review objectives was obtained from the Basel Committee document titled *Principles for sound stress testing practices and supervision*, published in May 2009. From the 2008 ICAAP reviews, the Department identified that most of the banks using the advanced approaches had implemented macroeconomic factor stress-testing models. The review therefore combined the elements of a macroeconomic factor model with the aforementioned Basel Committee document.

In line with the aforementioned, the main elements of the review included the following:

- The manner in which the stress-testing framework fitted into the overall governance structure of the bank, including the board-approved stress-testing framework and

policy document, independent review of the stress-testing framework and the extent to which the board and senior management understand the execution of stress testing within the organisation.
- Whether the bank's stress-testing methodology is commensurate with the nature and complexity of the extent of the bank's business activities.
- The development and selection of severe scenarios by the bank relative to the risk appetite and tolerance levels of the bank, including the use of reverse stress testing and historical versus forward looking (hypothetical) stress testing.
- The translation of the macroeconomic scenarios into macroeconomic drivers, and the appropriateness of the macroeconomic drivers for the scenario selected.
- The process through which the macroeconomic drivers were regressed into key risk drivers and the validation of the regression models used.
- Details of the stress-testing calculations per risk type, including a detailed discussion of stress-testing calculations performed for credit risk, market risk, operational risk, equity risk in the banking book, interest rate risk in the banking book, business risk and other risk areas not listed, and the aggregation of the stress-testing calculations for the bank.
- The results of the stress testing on the asset values, accounting profit and loss, economic profit and loss, regulatory capital or risk-weighted assets, economic capital requirements and liquidity and funding gaps.
- The use of the stress-testing results in the strategic decision-making process, evaluation of new products, determination of hot spots, evaluation of risk appetite and risk tolerance, and pre-emptive actions taken.

Based on the aforementioned information obtained, a benchmarking exercise was conducted that compared the information received with the aforementioned Basel Committee document.

2.7.4.2 Findings

The macroeconomic factor stress-testing models of the banks are in development and significant progress has been made since 2008. Key findings included the following:

macroeconomic factor stress-testing models of the banks are in development

- Stress testing is widely used as part of the risk management, and strategic and capital planning processes of banks.
- Stress testing of business risk was inconsistently performed by banks (in terms of the approaches used and the results of stress testing performed).
- The justification of the selection and quantification of scenarios varied greatly between banks.
- The ability to perform ad hoc stress testing varied between banks and risk types.
- The processes implemented by banks to ensure the independent review of stress-testing frameworks and methodologies are still at their infancy stage.
- Changes to the liquidity profile of banks due to macroeconomic conditions were generally not considered and the consideration of the relationship between asset and funding liquidity was limited.
- The granularity at which stress testing is performed varied greatly. Banks that performed stress testing at a very granular level had difficulty with the regularity at which stress testing was performed, the period in which the stress testing could be performed and extending the time horizon for the stress-testing scenarios. However, these banks received the benefit of having the stress-testing information at a very granular level.
- Reverse stress testing was found to be rudimentary and generally of a quantitative nature only. Identification of points where a bank became unviable, before breaching the regulatory minimum, had proven to be a challenge for most banks.

- For credit risk, the processes applied by banks to stress LGD and EAD estimates were less developed than those applied to stress PD estimates.
- The stressing of correlations between risk types was found to be limited.

2.7.4.3 Consequences

findings will be used to further align stress-testing practices with international best practice

A substantial amount of information was obtained to improve the Department's approach to common scenario stress testing to be carried out in 2010. The findings of the thematic reviews have been communicated to the individual banks and progress made by the banks in addressing these issues will be followed up in the course of 2010. Furthermore, the findings will be used to further align stress-testing practices with international best practice.

2.8 Developments in consolidated supervision

Lehman Brothers was one of the first banks to fail in September 2008, followed by a series of cascading defaults of major international banks, which sparked the beginning of the global financial market crisis and the resultant worldwide economic recession. This, in turn, led to a strong focus on improvements required in global regulatory and supervisory practices.

There has since been ongoing analysis and discussions between market practitioners and academics of the possible causes of the crisis and the revisions required in terms of prudential supervision frameworks, problem bank resolutions and strategies to avoid future systemic challenges.

The global financial crisis has demonstrated that critical deficiencies are still prevalent in risk management systems. Areas in need of critical enhancements include identifying and assessing key risks within and across borders, stress testing and macroprudential analysis to determine the impact on the financial system; monitoring; developing co-ordination protocols; reviewing regulatory frameworks; and adopting appropriate risk management frameworks and international accounting standards.

renewed focus on consolidated supervision

Some role-players regard inadequate consolidated supervision and regulation of large, highly leveraged and substantially interconnected financial companies as a key factor that contributed to the international financial market crisis. The sudden collapse of large investment banks and insurance companies was among the most destabilising events during the crisis. It has been alleged that these companies were ineffectively supervised and regulated on a consolidated basis and, as a consequence, did not have sufficient capital or liquidity buffers to withstand the deterioration in financial conditions that occurred in 2008. These events have renewed the focus on consolidated supervision, particularly with regard to systemically important large internationally diversified financial groups.

Other aspects that were identified that had also impacted on consolidated supervision included the following:

- *Non-bank financial institutions*: The regulatory system was not structured for an environment in which an increasingly large amount of credit intermediation was occurring in non-bank financial institutions. As a consequence, less attention was paid to the systemic implications of the actions of increasingly important financial institutions, including securities firms, insurance conglomerates and monopolies. Both banking and non-banking financial institutions play an important role in credit intermediation, but are subject to differing degrees of regulation and supervision by

different regulatory authorities. Certain systemically important activities are therefore conducted outside the regulatory ambit.

The global financial crisis has clearly demonstrated that risks to the financial system can arise not only from banks, but also from other financial entities. In future all systemically important financial institutions will be subjected to a more robust regime of consolidated supervision from the ultimate parent company downwards.

complexity and interconnectivity within large institutions are areas of focus for the Basel Committee

- *Group structure*: Complexity and interconnectivity within large institutions are areas of focus for the Basel Committee. Often the complexity of group structures is motivated by tax or regulatory factors, rather than a clear business purpose. The CBRG of the Basel Committee is working on recommendations aimed at simplifying such complex structures.

- *Home host relationships*: The growing complexity of financial systems across the globe negatively impacts on the ability of regulators to monitor and assess risk exposure effectively across large diversified financial groups. This also complicates the identification of areas where there are regulatory gaps. This problem is exacerbated during times of distress. It is therefore critical that information-sharing agreements between home- and host-country supervisors are well designed and effectively implemented. During the crisis it also became evident that instances occurred where regulators were required to make decisions about systemically important entities not supervised by them. The lack of information from these entities also complicated the decision-making process.

crisis demonstrated that issues around cross-border liquidity support are difficult

- *Capital and liquidity rules*: Changes to the capital and liquidity rules that will impact on banks and banking groups on a solo and consolidated basis can be expected during 2010 and thereafter. Regulators are calling for significantly stronger capital standards that will improve both the quality and quantity of capital. Cyclical standards may be considered that will require entities and groups to build larger capital buffers in good times, and allow them to be drawn down during periods of stress. The crisis demonstrated that issues around cross-border liquidity support are difficult. Liquidity pressures may arise in unexpected places; time for co-ordination is short and the failure in one jurisdiction will likely spread quickly to other jurisdictions.

  The crisis also highlighted weaknesses in group and cross-border liquidity management. In response, in December 2009 the Basel Committee issued for consultation a package of proposals to strengthen global capital and liquidity regulations with a view to promoting a more resilient banking sector. In terms of the proposals, the Basel Committee developed two internationally consistent regulatory standards for liquidity risk supervision as a cornerstone of a global framework to strengthen liquidity risk management and supervision. In addition to meeting these standards, banks will also be expected to adhere to all the principles set out in the September 2008 Basel Committee paper titled *Principles for Sound Liquidity Risk Management and Supervision*.

establish and harmonise appropriate solvency regimes throughout the world

- *Cross-border issues*: The pending or actual failure of a large internationally active financial entity inevitably complicates the already challenging process of resolution. Mismatches in the amount and maturities of assets and liabilities held by entities in the various countries in which they operate can lead to host regulators taking special action to protect the interests of depositors and creditors in their own jurisdictions. Different insolvency regimes apply to separately incorporated subsidiaries across the world that are substantially inconsistent with one another. Insolvency regimes in different countries therefore do not cater for the special characteristics of large

international entities. It is proposed that role-players consider the implementation of an international treaty that would establish and harmonise appropriate solvency regimes throughout the world.

Internationally active banks and other financial entities operate across national borders and legal jurisdictions with complex structures. They manage their businesses in an integrated manner with little regard for the corporate and national boundaries. This happens while the legal, supervisory and insolvency rules remain nationally based.

The above-mentioned gaps in supervision existed for years; their consequences were not obvious until the crisis, which revealed critical deficiencies in the toolkits available to regulators to deal with non-bank institutions in distress. Regulators are, however, developing and implementing new regulations and policy guidance that take on the broad lessons of the crisis. A regulatory structure that provides for comprehensive and consistent oversight of all elements of the financial system is required. This includes effective consolidated oversight of all the largest and interconnected financial institutions, and oversight of the payment and settlement systems.

actions to further improve the supervision of banking groups

During the year under review the Department proactively took the following actions to further improve the supervision of banking groups:

- Regular supervisory meetings between the Department and the Financial Services Board were instituted for the three largest significant systemic banking and insurance groups. The purpose of the supervisory meetings was to enhance information sharing, identify issues of mutual relevance and to work together towards greater consistency of approach, where appropriate.
- The Department has made a policy decision to allow only the acquisition or establishment of cross-border banking operations (inwards and outwards) in instances where a memorandum of understanding (MoU) with the cross-border banking supervisor had been concluded. MoUs are entered into with local and foreign supervisors. This is a more formalised approach to share information and to protect the confidentiality of such information.
- The Department is also planning to host a supervisory college in 2010 with those African supervisors in whose countries South African banking groups have a presence.
- The establishment or acquisition of cross-border operations by South African banking groups requires the prior approval of the Registrar of Banks in terms of the Banks Act, 1990. In view of the market turmoil in 2009, the Department requested banking groups to rather focus their energy on the challenges facing their existing local and foreign operations as opposed to pursuing new strategic international expansions.
- In order to improve the supervision of banking groups on a consolidated basis, the Department recommended to one of the large banking groups to undergo a restructure, which restructuring would enable the Department to supervise the entire conglomerate, which was not previously the case. It is expected that the said restructure will be concluded in the course of 2010.

2.8.1 Supervisory colleges

establishment of supervisory colleges and crisis management within larger groups

International developments subsequent to the financial market crisis have renewed the focus on various key areas such as the development of a macroprudential approach to supervision; the enhancement of adherence to international supervisory and regulatory standards; and the establishment of supervisory colleges and crisis management within larger groups. In this regard, as outlined above, regular supervisory meetings between the Department and the Financial Services Board were instituted during 2009 in respect of the three largest systemically relevant South African banking and insurance groups.

Supervisory meetings between the Financial Services Board and the Department were scheduled and held in September and October 2009 to discuss the following financial conglomerate groups:

- Standard Bank Group Limited/Liberty Holdings Limited.
- FirstRand Limited/Momentum Group Limited.
- Old Mutual Limited/Nedbank Group Limited.

The agenda of the meetings covered various quantitative and qualitative issues such as corporate governance, management structures, risk management, compliance, control environment and regulatory concerns, group structures, and systemic and contagion risk. Both supervisors emphasised that all three banking and insurance groups discussed during the supervisory meetings were of material systemic importance in the South African banking sector, insurance sector and in the economy as a whole.

The supervisory meetings facilitated a platform to
- discuss material issues of mutual relevance;
- communicate emerging issues and developments of a material and potentially adverse nature;
- establish and maintain contact between the two offices; and
- establish a climate of co-operation and trust.

Valuable information was shared during the supervisory meetings. The Financial Services Board and the Department obtained a better understanding of the respective institutions' supervisory frameworks, as well as the risks that banking groups and insurance groups are facing. It was agreed that at future supervisory meetings there would also be interaction on the combined banking and insurance businesses of Absa Group Limited, Investec Group Limited and African Bank Investments Limited. The decision to include these three groups was based on the materiality of their banking and insurance businesses.