The regulatory horizon – Basel III

ERM Conference
29 March 2011

Markus Borner
Phillip Olivier
Agenda
This presentation will cover key aspects relating to Basel III including the impact for South African banks.

• How did we get here?
• The regulatory response & global implications
• The South African perspective
• Conclusions
How did we get here?
The reasons for the financial crisis are well documented. We provide only a brief summary to set the scene.

• The financial crisis – the benefit of hindsight:
  ▫ Macro imbalances
  ▫ Financial innovation
  ▫ The subprime bubble
  ▫ Increases in leverage
  ▫ Over-reliance on models
  ▫ Hard-wired procyclicality
How did we get here?
Looking back, the evolution of global macro imbalances are apparent...

Global current account balances.

Household debt as a percentage of GDP.

UK real interest rates.

Foreign ownership of US Treasury Bonds.

Source: Financial Services Authority, The Turner Review, March 2009
How did we get here?
Financial innovation led to unprecedented complexity in financial markets developing at an unsustainable pace.

Increasing complexity in securitised credit model.

Growth in outstanding credit default swaps.

Financial innovation led to unprecedented complexity in financial markets...

...At a pace that was clearly unsustainable

Source: Financial Services Authority, The Turner Review, March 2009
How did we get here?
Subprime mortgage bubble - abnormal house prices in new millennium.

Progression in house prices and underlying drivers since early 1900’s.

How did we get here?

Increases in bank and household leverage exposed the economy to substantial risk.

SA banks less than 15 times leveraged.

Source: Financial Services Authority, The Turner Review, March 2009
How did we get here?
Complexity in financial instruments was combined with an over-reliance on models with poorly understood limitations.

Deficiencies in VAR-based estimates of risk - Procyclicality.

Observation 1
Low volatility, low apparent risk. Encourages risk taking.

Observation 2
High volatility after a fall in confidence – liquidity dries up, exacerbating increase in volatility.

Year
1 2 3 4 5

Note: The diagram illustrates the relationship between volatility and confidence over a 5-year period.
How did we get here?
The extent of inter-connectedness of various market variables was poorly understood.

- Procyclical market interactions:
  - Ratings
  - Triggers
  - Margins
  - Haircuts

### Impact of financial crisis on haircuts and margins.

<table>
<thead>
<tr>
<th></th>
<th>Typical haircut or initial margin</th>
<th>In per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>April 2007</td>
<td>August 2008</td>
</tr>
<tr>
<td>US Treasuries</td>
<td>0.25</td>
<td>3</td>
</tr>
<tr>
<td>Investment grade bonds</td>
<td>0–3</td>
<td>8–12</td>
</tr>
<tr>
<td>High-yield bonds</td>
<td>10–15</td>
<td>25–40</td>
</tr>
<tr>
<td>Investment grade corporate CDS</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Senior leveraged loans</td>
<td>10–12</td>
<td>15–20</td>
</tr>
<tr>
<td>Mezzanine leveraged loans</td>
<td>18–25</td>
<td>35+</td>
</tr>
<tr>
<td>ABS CDOs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>2–4</td>
<td>95&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>AA</td>
<td>4–7</td>
<td>95&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>A</td>
<td>8–15</td>
<td>95&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>BBB</td>
<td>10–20</td>
<td>95&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Equity</td>
<td>50</td>
<td>100&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>AAA CLO</td>
<td>4</td>
<td>10–20</td>
</tr>
<tr>
<td>Prime MBS</td>
<td>2–4</td>
<td>10–20</td>
</tr>
<tr>
<td>ABS</td>
<td>3–5</td>
<td>50–60</td>
</tr>
</tbody>
</table>

<sup>1</sup> – Theoretical haircuts as CDO's are no longer accepted as collateral.

Source: Financial Services Authority, The Turner Review, March 2009
The regulatory response and global implications

Following the financial crisis, Basel Committee on Banking Supervision (BCBS) moved quickly to outline its proposed changes. The G20 endorsed the Basel III proposals in November 2010.

### Basel III – how do the components fit together?

<table>
<thead>
<tr>
<th>Capital reform</th>
<th>Liquidity standards</th>
<th>Systemic risk and interconnectedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Quality, consistency and transparency of capital.</td>
<td>• Increased short-term resilience by ensuring banks hold sufficient high quality liquid assets (Liquidity Coverage Ratio).</td>
<td>• Incentives for banks to use central counterparties for OTC derivatives.</td>
</tr>
<tr>
<td>• Enhancing risk coverage.</td>
<td>• Increased long-term resilience by ensuring banks fund their activities with more stable sources of funding (Net Stable Funding Ratio).</td>
<td>• Higher capital for trading and derivative activities.</td>
</tr>
<tr>
<td>• Controlling leverage.</td>
<td></td>
<td>• Higher capital for inter-financial sector exposures.</td>
</tr>
<tr>
<td>• Reducing procyclicality and promoting countercyclical buffers.</td>
<td></td>
<td>• Capital surcharge for systemic banks.</td>
</tr>
</tbody>
</table>

### Overarching objectives:

- To strengthen global capital and liquidity regulations with the goal of promoting a more resilient banking sector.
- To improve the banking sector’s ability to absorb shocks arising from financial and economic stress.
The regulatory response and global implications
The recommendations can be grouped into four broad categories.

1. Increased quality and quantity of capital.
2. Reduced leverage through introduction of a backstop leverage ratio.
3. Reduced liquidity risk.
4. Strengthened risk capture and coverage.
The regulatory response and global implications

Basel III requires increased capital which needs to be of a higher quality.

- **Tier 3 Capital (Market Risk only)**
  - Lower Tier 2 Capital
  - Upper Tier 2 Capital
  - Hybrid Tier 1 Capital
  - Perpetual Preference Shares

- **Tier 2 Capital**
  - Additional Going Concern Tier 1 Capital

- **“Core” Tier 1 Capital**

- **Current SA Minimum Capital requirement**
  - Tier 3 Capital (Market Risk only)
  - Lower Tier 2 Capital
  - Upper Tier 2 Capital
  - Hybrid Tier 1 Capital
  - Non redeemable Non cumulative Preference Shares

- **Proposed BIS Capital Composition**
  - Max 100% of Primary
  - Min 50% of Primary
  - Max 15% of Primary
  - Min 75% of Primary

- **Basel II Current BIS Minimum Capital Composition**
  - Max 50% of T1
  - Not more than T1
  - Min 4% of RWA
  - Max 50% of T1

- **Current SA Minimum Capital**
  - Min 75% of T1
  - Max 25% of T1
  - 7% of RWA. Must be “predominant” amount of Tier 1 Capital

- **Pillar 1 and 2 @ 9.5%**
  - Secondary and tertiary 2.5%

- **“Core” Tier 1 Capital**

- **Min 75% of Primary**

- **Primary min 7%**

Member of the BARCLAYS Group.
The regulatory response and global implications

Procyclicality buffers – make-up unclear and subject to national discretion.

- Potentially no restrictions on components
- Capital buffer is required
- No dividend payments
- Set up new capital buffer
- Limited dividend payments

Business cycle

Capital ratio

Procyclicality buffer (0% - 2.5%)
Capital conservation buffer (2.5%)
Minimum ratio (4.5%)
The regulatory response and global implications
Leverage ratio introduced to prevent excessive leverage in the financial system.

- Non risk sensitive backstop measure to reduce the risk of a build-up of excessive leverage in individual banks and in the financial system as a whole.

- Limits system wide financial instability by limiting aggregate positions.

- Leverage limit set at 3%:
  - Total assets should not be more than 33 times bank capital.
  - Including on and off-balance sheet assets.

Note that leverage of global banks has decreased significantly since the crisis.
The regulatory response and global implications

The regulatory response to the crisis has seen a rebalancing towards the importance of liquidity risk management.

<table>
<thead>
<tr>
<th>Liquidity measure</th>
<th>Purpose</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Liquidity coverage ratio (LCR)</td>
<td>To increase the short-term resilience of banks by ensuring banks hold sufficient high quality liquid assets to survive a liquidity stress for a period of 30 days.</td>
<td>• Stock of high quality liquid assets Net cash outflows over a 30 day period &gt; 100%</td>
</tr>
<tr>
<td></td>
<td>• “Does the bank hold enough liquid assets and are these of good enough quality?”</td>
<td>• Highly prescriptive / formulaic approach – factor based.</td>
</tr>
<tr>
<td>• Net Stable Funding Ratio (NSFR)</td>
<td>To increase long-term resilience of banks by ensuring they fund their activities with more stable sources of funding.</td>
<td>• Available stable funding Required Stable funding &gt; 100%.</td>
</tr>
<tr>
<td></td>
<td>• “Does bank hold sufficient levels of stable funding?”</td>
<td>• 12-month period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Highly prescriptive / formulaic approach – factor based.</td>
</tr>
</tbody>
</table>
The regulatory response and global implications

Various further measures were produced to strengthen risk capture, notably counterparty risk in the trading book.

- Calibration of counterparty credit risk modelling to stressed periods.
- Increased correlation assumptions for financial institutions to reflect experience of recent crisis.
- New capital charges for credit valuation adjustment and wrong-way risk.
- Encouragement of the use of Central Counterparties for standardised derivatives, intended to reduce the systemic risk arising from OTC derivatives. Reduces gross exposures through multilateral netting.
- Improved counterparty risk management standards in the area of collateral management and stress testing.

Use of stressed VAR assumptions.

SA daily OTC derivatives turnover, USD bn (April 2010).

Source: Bank for International Settlements, Triennial OTC derivatives statistics, November 2010
The regulatory response and global implications

The revised rules will have an impact on individual banks and on the global financial system.

• Potential impact on individual banks:
  ▫ Crowding out of weaker players.
  ▫ Pressure on profitability and ROE.
  ▫ Increased customer pricing.
  ▫ Increased dividend volatility.
  ▫ Change in demand from short-term to long-term funding.
  ▫ Potential reorganisation of legal entities.
  ▫ Different capital instruments being used, e.g. CoCo’s.
  ▫ Increased focus on active balance sheet management.
  ▫ Redesign of business models and portfolio focus.

• Potential impact on financial system:
  ▫ Reduced systemic risk.
  ▫ Lower credit extension.
  ▫ Lower economic growth.

Change in real lending rate to private sector borrowers

Net new Core Tier 1 capital issuance required 2010 - 2015


Source: Bank for International Settlements, Results of the Comprehensive Quantitative Impact Study, December 2010
The regulatory response and global implications

Reform also affects compensation approaches. Proposals align remuneration with long-term prudent risk-taking.

- **Compensation pool**
  - Fixed
  - Variable
    - Non-deferred
    - Deferred
      - Mix
        - Risk horizon and profile
      - Triggers and claw back rate
        - Ex post risk adjustment
  - Performance measure
    - Expected risk outcomes
      - Risk-adjusted performance measures
  - Ex ante risk adjustment
    - Substantial portion variable
    - Substantial portion deferred
    - Substantial portion in equity
      - Normal
      - Asymmetrical
      - Equity
      - Other
        - %
The regulatory response and global implications

Substantial uncertainty remains at a global level.

• Identifying, defining and treatment of Systemically Important Financial Institutions (SIFIs).

• Agreeing a framework for forward-looking provisioning to limit the build-up of credit growth through under-pricing of future risk.

• Eligibility of non-common equity Tier 1 and Tier 2 instruments.

• Developing the counter-cyclical buffer concept for individual firms.

• Potentially revising the Net Stable Funding Ratio in light of criticism of its design and potential financial impact.

There is a substantial risk that Basel III will be implemented in different ways in different jurisdictions and that international regulatory arbitrage will continue to disrupt the stability of the financial system.
The regulatory response and global implications

Implementation period lengthened with monitoring period for leverage ratio and observation periods for liquidity ratios.

**Basel III implementation timeline**

- **Dec 2010**: BCBS issued final international rules text to improve quantity & quality of bank capital and discourage excess leverage
- **Dec '10**: BCBS to issue final liquidity management requirements
- **Jan '11** – **Dec '12**: Supervisory monitoring period
- **Jan '11** – **Dec '12**: Observation period for LCR
- **Jan '12 to Dec '14**: Observation period for LCR
- **Jan '12**: Increase in minimum Core Tier 1 ratio from 2.0% to 3.5% and Tier 1 ratio from 4.0% to 4.5%
- **Jan '13**: Phase out non qualifying capital instruments over 10 yrs
- **Jan '13**: Phase-in of minimum Core Tier 1 (4.5%) and Tier 1 (6.0%) capital ratios
- **Jan '13 to Jan '15**: Phase-in of minimum Core Tier 1 (4.5%) and Tier 1 (6.0%) capital ratios
- **Jan '14 to Jan '18**: Phase-in of 2.5% Capital Conservation Buffer increasing both minimum Core Tier 1 and Total Capital ratios
- **Jan '14 to Jan '18**: Phase-in of deductions from Core Tier 1
- **Jan '15**: Disclosure starts
- **Jan '15**: LCR introduced as a minimum standard
- **Jan '16 to Jan '19**: Phase-in of 2.5% Capital Conservation Buffer increasing both minimum Core Tier 1 and Total Capital ratios
- **Jan '17**: NSFR introduced as a minimum standard
- **Jan '18**: NSFR introduced as a minimum standard
- **Jan '18**: Migration to Pillar I
- **Jan '18**: NSFR introduced as a minimum standard
- **Jan '19**: NSFR introduced as a minimum standard
The South African perspective

SA banking sector was less severely affected. Lower leverage (SA banks less than 15 times leveraged) and lower exposure to “toxic” assets.

Global view...

... SA view

Source: Financial Services Authority, The Turner Review, March 2009
The South African perspective

SA house prices less severely impacted than UK and US in nominal terms. Real terms show a different picture.

Decrease from peak to '09 (nominal)*

<table>
<thead>
<tr>
<th>Country</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSA</td>
<td>0.3%</td>
</tr>
<tr>
<td>Ireland</td>
<td>21.9%</td>
</tr>
<tr>
<td>Aus</td>
<td>n/a</td>
</tr>
<tr>
<td>UK</td>
<td>8.9%</td>
</tr>
<tr>
<td>USA</td>
<td>6.9%</td>
</tr>
</tbody>
</table>

*Decrease is shown as percentage of peak-price.

Decrease from peak to '09 (real)*

<table>
<thead>
<tr>
<th>Country</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSA</td>
<td>12.7%</td>
</tr>
<tr>
<td>Ireland</td>
<td>23.4%</td>
</tr>
<tr>
<td>Aus</td>
<td>n/a</td>
</tr>
<tr>
<td>UK</td>
<td>12.6%</td>
</tr>
<tr>
<td>USA</td>
<td>11.0%</td>
</tr>
</tbody>
</table>

*Decrease is shown as percentage of peak-price.
The South African perspective

Capital ratios – SA Banks are well capitalised...

...and well above future regulatory requirements

<table>
<thead>
<tr>
<th></th>
<th>Dec 08</th>
<th>Dec 09</th>
<th>Dec 10</th>
<th>Dec 12</th>
<th>Dec 13</th>
<th>Dec 14</th>
<th>Dec 15</th>
<th>Dec 16</th>
<th>Dec 17</th>
<th>Dec 18</th>
<th>Dec 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core-Tier 1</td>
<td>13.3</td>
<td>15.0</td>
<td>15.3</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
<td>8.6</td>
<td>9.3</td>
<td>9.9</td>
<td>10.5</td>
</tr>
<tr>
<td>Tier II</td>
<td>9.8</td>
<td>10.9</td>
<td>11.6</td>
<td>4.0</td>
<td>3.5</td>
<td>2.5</td>
<td>2.0</td>
<td>1.5</td>
<td>1.3</td>
<td>1.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Conservation Buffer</td>
<td>1.1</td>
<td>1.1</td>
<td>9.75</td>
<td>1.0</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Non-core Tier 1</td>
<td>2.0</td>
<td>1.0</td>
<td>5.25</td>
<td>2.0</td>
<td>1.5</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Tier II</td>
<td>0.6</td>
<td>1.3</td>
<td>1.9</td>
<td>0.6</td>
<td>0.6</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

SA "big-4" banks (Basel II)

Minimum BIS international requirement under Basel III (excluding procyclicality buffer)

Note: Excludes procyclicality buffer (0%-2.5%)
The South African perspective

However, liquidity is a different story... the structure of the South African funding market means that liquidity and long-term funding is in short supply.

Market dominated by a small number of large players.

Savings reach banks through wholesale (institutional) market.

SA NOT a great savings nation compared to rest of world...

...and SA savings on a downward trend.
The South African perspective
...however, these features do not necessarily make SA banks more risky.

• SA has a small number of large banking groups with well established brands and extensive branch networks.

• Sophisticated broader financial services industry.

• SA banks are not overly reliant on offshore funding sources, which may be less sticky in times of stress. Less than 10% of bank funding is from the foreign sector.

• SA banks have a small portion of funding (c.1-2%) which arise from structured products (securitisations).

• Well run from a liquidity risk management perspective.

• Limited exposure to “toxic” assets.

• Potential further relaxation of exchange control restrictions in future is not viewed as a great risk for South African banks, because the Rand is not a reserve currency.
The South African perspective

Substantial steps have already been taken to improve the liquidity position of the SA banking sector.

SA banks have extended their funding tenor.

SA banks have significantly increased their liquid asset holdings.

Source: BA900 Returns

Source: BA310 Returns
**The South African perspective**

Key challenges exist for SA banks on both the LCR and the NSFR. National discretion means that uncertainty remains.

**Challenges – LCR**

- Formulaic / prescriptive nature.
- Lack of adequate supply of high quality liquid assets, partly due to size of market & the ratings of issuers.
- Estimated shortfall of hundreds of billions of Rands of liquid asset holdings by SA banks.
- Not drafted for developing economies – e.g. Insured deposit schemes.

**Challenges – NSFR**

- Fundamental issues: turning banks into insurers?
- Availability of stable funding.
- Regulatory constraints (e.g. average duration restriction applicable to money market funds of 91 days).
- NSFR may be revised before being introduced in 2018.
The South African perspective

The Basel Committee on Banking Supervision left certain important aspects open to national discretion. Uncertainty therefore remains regarding SA impact.

<table>
<thead>
<tr>
<th>National Discretion - Capital</th>
<th>National Discretion - Liquidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• South Africa’s minimum regulatory ratios.</td>
<td>• Whether South Africa will qualify as a country with “insufficient liquid assets”.</td>
</tr>
<tr>
<td>• Percentages and implementation dates for the counter-cyclical and capital conservation buffers.</td>
<td>• Treatment of statutory liquid assets.</td>
</tr>
<tr>
<td>• Clarity regarding the eligibility of non-common Tier 1 and Tier 2 instruments.</td>
<td>• Treatment of uncommitted facilities.</td>
</tr>
<tr>
<td></td>
<td>• The run-off factors to be applied to retail and wholesale balances.</td>
</tr>
</tbody>
</table>
The South African perspective

Local regulatory developments are also important – National Treasury published a document entitled “A safer financial sector to serve South Africa better” outlining far-reaching proposals for financial services in SA.

- Twin-peaks approach to regulation, characterised by separate prudential and market conduct regulators.
- Adoption of a system-wide approach to financial stability and regulation.
- Bolstering the supervision of individual institutions.
- Ensuring better coordination and information sharing.
- Extended scope to cover presently unregulated financial activities that have the potential to create systemic risks.

- New market conduct regulator for banking services in the Financial Services Board.
- A stronger approach taken towards market conduct regulation.
- Treating Customers Fairly initiative.
- Increased consumer education.
- Proposals for safeguarding pensioners.

- Developing the role of Co-operative and Dedicated Banks
- Strengthening the Postbank.
- Introducing a micro insurance framework.
- Financial Sector Charter.

- Further measures to promote financial integrity.
- Due diligence on customers.
- Maintaining customer and transaction information in records that are accessible by supervisory and investigating authorities.
Conclusions

Basel III introduces further changes for bank regulation, which were proposed and agreed in record time. However, a substantial amount of work and great uncertainty remains.

• Basel III will have far reaching implications for banks globally.

• Key areas of uncertainty remain, such as the treatment of Systemically Important Financial Institutions (SIFIs).

• Certain jurisdictions will be severely affected by capital and leverage rules. SA is likely to be less affected by these rules as SA banks are already well capitalised.

• The liquidity rules are of greater concern for SA banks due to the structural funding challenges faced in the SA economy. The rules could lead to significant increases in carry cost of liquid assets and funding cost due to increased funding tenor.

• Work is being conducted through industry level working groups in conjunction with standard setters to address the structural funding challenges in SA.
Questions