PRINCIPLES – STRESS TESTING

Recommendation to Banks
Principles

• Stress testing should form an integral part of overall governance and risk culture of the bank.
• It should be actionable and feed into the decision making process at appropriate management level, including strategic business decisions of the Board or Senior Management.
• Effective supervision requires involvement of Board and Senior Management.
Principles

• A bank should operate a stress testing program that;
  – Promotes risk identification and control
  – Provides complementary risk perspective to other risk management tools
  – Improves capital and liquidity management – integral part of ICAAP (Pillar 2 Basel II)
  – Enhances internal & external communication
Principles

• The stress testing program should take account of views from across the organization and should cover a range of perspectives and techniques;
  • Identification of relevant stress events
  • Application of sound modelling approaches
  • Appropriate use of stress results
  • Opinions of all relevant experts should be taken into account, especially firm wide stress tests
Principles

‘A bank should have written policies and procedures governing the stress testing program. The operation of the program should be properly documented.’
Principles

• A bank should have a suitably robust infrastructure in place, which is flexible to accommodate different and possibly changing stress tests at an appropriate level of granularity. (Data of appropriate granularity and system flexibility is crucial to handle customised and changing stress tests)
Principles

• A bank should regularly maintain and update its stress testing framework. The effectiveness of the stress test program and the robustness of major individual components should assessed regularly and independently.
Principles

• **Stress Tests – Area for assessment;**
  • The effectiveness of the program in meeting its intended purposes
  • Documentation
  • Development work
  • System Implementation
  • Management oversight
  • Data Quality and
  • Assumptions used

  ‘The quantitative processes should include benchmarking with other stress tests within and outside the bank.’
Principles

• Stress Testing methodology and scenario analysis –

It should cover a range of risks and business areas, including at the firm wide level. A bank should be able to integrate effectively across the range of its stress testing activities to deliver a complete picture of firm-wide risk. – Focus should remain to identify, monitor and control risk concentrations and changes in market conditions.
Principles

• Stress tests impact is evaluated against one or more measures;
  • Asset values
  • Accounting profit or loss
  • Economic profit or loss
  • Regulatory capital or risk weighted assets
  • Economic capital requirements
  • Liquidity and Funding gaps
Principles

• Stress testing programs should cover a range of scenarios, including forward looking scenarios, and aim to take into account system wide interactions and feedback effects.

• E.g. of forward looking scenarios – changes in composition of portfolios, new information and emerging risk possibilities. Need to use judgement and knowledge of experts across the organization with varying time horizons?
Principles

- Stress tests should be geared towards the events capable of generating most damage whether through size of loss or through loss of reputation.
- Stress testing programs should also determine what scenarios could challenge the viability of the bank (reverse stress tests - breaching regulatory capital ratios, illiquidity or insolvency) and thereby uncover hidden risks and interactions among risks.
A bank stress tests should aim to take account of simultaneous pressures in funding and asset markets, and the impact of a reduction in market liquidity on exposure valuation.
Principles

• A bank should enhance its stress testing practices by considering important interrelationships between various factors;
  • Price shock for specific asset categories
  • The drying up of corresponding asset liquidity
  • The possibility of significant losses damaging the banks financial strength
  • Growth of liquidity needs as a consequence of liquidity commitments
  • Taking on board affected assets and
  • Diminished access to secured or unsecured funding markets.
Principles

• The effectiveness of risk mitigation techniques should be systematically challenged.

• The banks should focus on specific areas of risk mitigation and risk transfer – Stress tests should facilitate the development of risk mitigation or contingency plans across a range of stressed conditions.
The program should explicitly cover complex products such as securitized exposures e.g. consider underlying assets, their exposure to systematic market factors, relevant contractual arrangements and embedded triggers and impact of leverage..
Principles

The stress testing should cover pipeline risks and warehousing risks. A bank should include such exposures in its stress tests regardless of their probability of being securitized.
Principles

• A bank should enhance stress test methods to capture the effect of reputational risk.

• The bank should integrate risks arising from Off Balance sheet vehicles and other related entities in its stress testing program.
Principles

• A bank should enhance its stress testing approaches for highly leverage counterparties in considering its vulnerability to specific asset categories or market movements and in assessing potential wrong way risk related to risk mitigating techniques –
  • Large group exposures to leveraged counterparties including hedge funds, financial guarantors, derivative counterparties that are exposed to asset type and market movements.
  • In the case of severe market shocks, exposures to above may increase abruptly and potential cross correlation of the credit worthiness of such counterparties with risks of assets being hedged may emerge (e.g. wrong way risk).
Principles – Recommendation to Supervisors

1. Make regular and comprehensive assessments of banks stress testing programs
   - Active involvement of senior management
   - Ensure banks submit at regular intervals the results of firm-wide stress test programs
   - Evaluate how stress testing analysis impacts the banks decision making at different management levels
   - Evaluate the impact of stress tests at strategic decision making by board management.
Continued

• Verify that stress testing forms part of the:
  
  • Internal Capital Adequacy and Assessment Process (ICAAP)
  • Liquidity Risk Management Framework
  • Ensure banks devote sufficient resources and develop explicit procedures to undertake rigorous, forward looking stress testing
  • Supervisors should engage management in regular communications to discuss its view on major macroeconomic and financial market vulnerabilities – threats to banks operations and business model.
Supervisors

• Require management to take corrective action if material deficiencies in the stress testing program are identified or if the results of stress tests are not adequately taken into consideration in the decision making process
The range of the remedial action should be proportionate to the severity of the impact of the stress test, the overall risk management framework and to other limiting or risk mitigating policies:

- The review of limits
- The recourse of risk mitigation techniques
- The reduction of exposures to specific sectors, countries, regions or portfolios
- The revision of bank policies, such as those that relate to funding or capital adequacy, and
- The implementation of contingency plans
Supervisors

• They should assess and if necessary challenge the scope and severity of firm-wide scenarios. Supervisors may ask banks to use specific scenarios or to evaluate scenarios under which their viability is threatened – reverse stress testing scenarios –
  » Where impact of stress tests seem unrealistically low
  » Mitigating actions are unrealistic
  » Tests are consistent with risk appetite
Supervisors

• Under pillar 2 – examine a bank's stress testing results as part of a supervisory review of both the bank's ICAAP and its liquidity risk management.

• They should consider results of forwards-looking stress testing for assessing capital adequacy and liquidity.
Conclusion

Stress tests on a business line, on a bank and or a banking sector – be realistic?

Focus on exceptional but plausible events

Objective is to maintain the safety and soundness of the baking sector
Global Crisis

At the outset of the crisis, mortgage default shocks played a part in the deterioration of market prices of collateralized debt obligations (CDO’s). Simultaneously, these shocks revealed deficiencies in the models used to manage and price these products. The complexity and resulting lack of transparency led to uncertainty about the value of the underlying investments. Market participants then drastically scaled down their activity in the origination and distribution markets and liquidity disappeared.

The standstill in the securitization markets forced banks to warehouse loans that were intended to be sold in the secondary markets. Given the lack of ultimate ownerships of troubled investments, funding liquidity concerns were triggered within the banking sector as banks refused to provide sufficient funds to each other. This in turn led to hoarding of liquidity, exacerbating further the funding pressures within the banking sector.

The initial difficulties in subprime mortgages also fed through to a broader range of market instruments since the drying up of market and funding liquidity forced market participants to liquidate those positions which they could trade in order to scale back risk. An increase in risk aversion also led to a great flight to quality, an example of which was the high withdrawals by households from money market funds.