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Dealing with Predictable Irrationality – Actuarial Ideas to Strengthen Global Financial Risk Management

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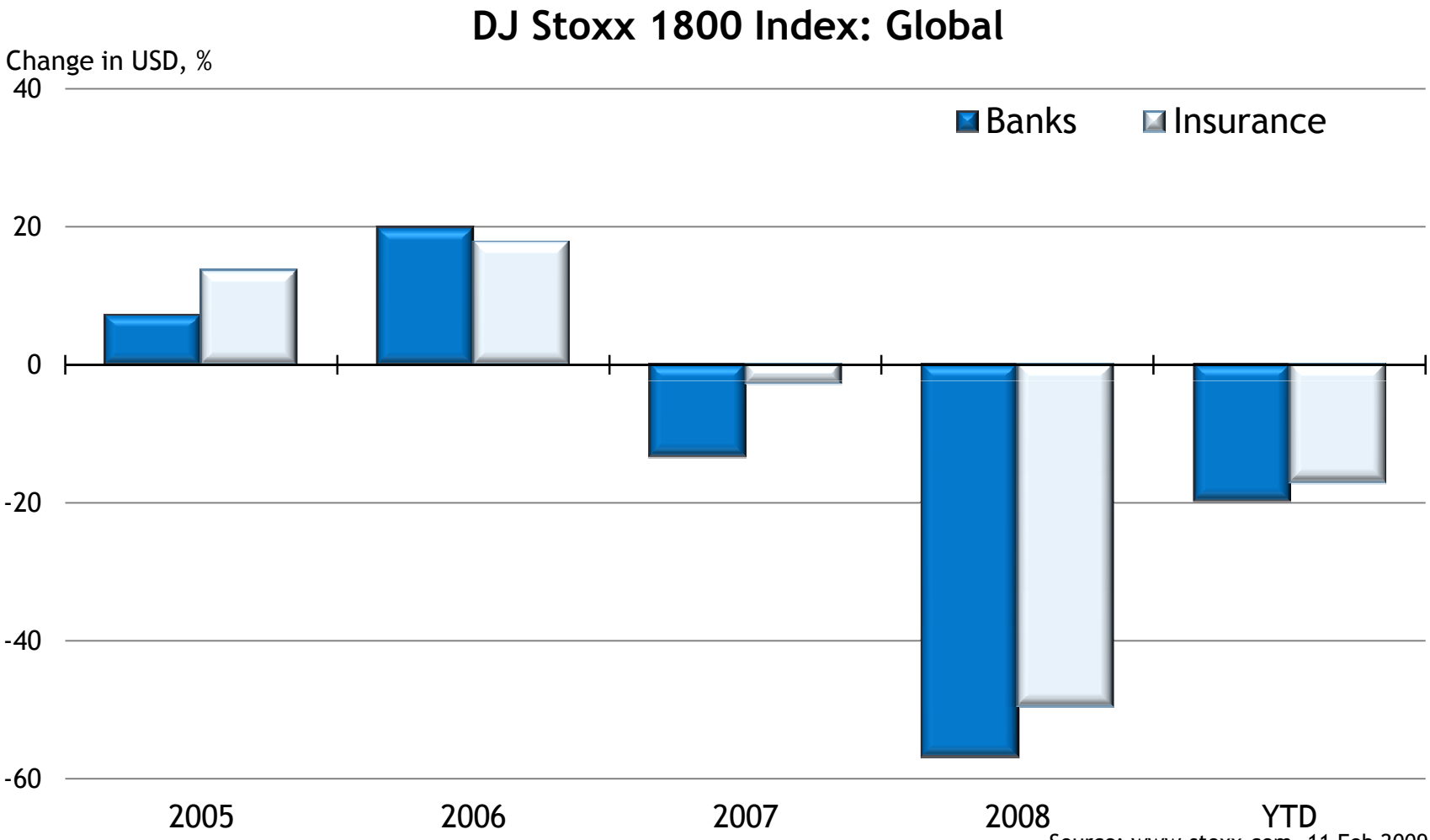
Market Value of Banks and Insurers



Source: www.stoxx.com, 11 Feb 2009

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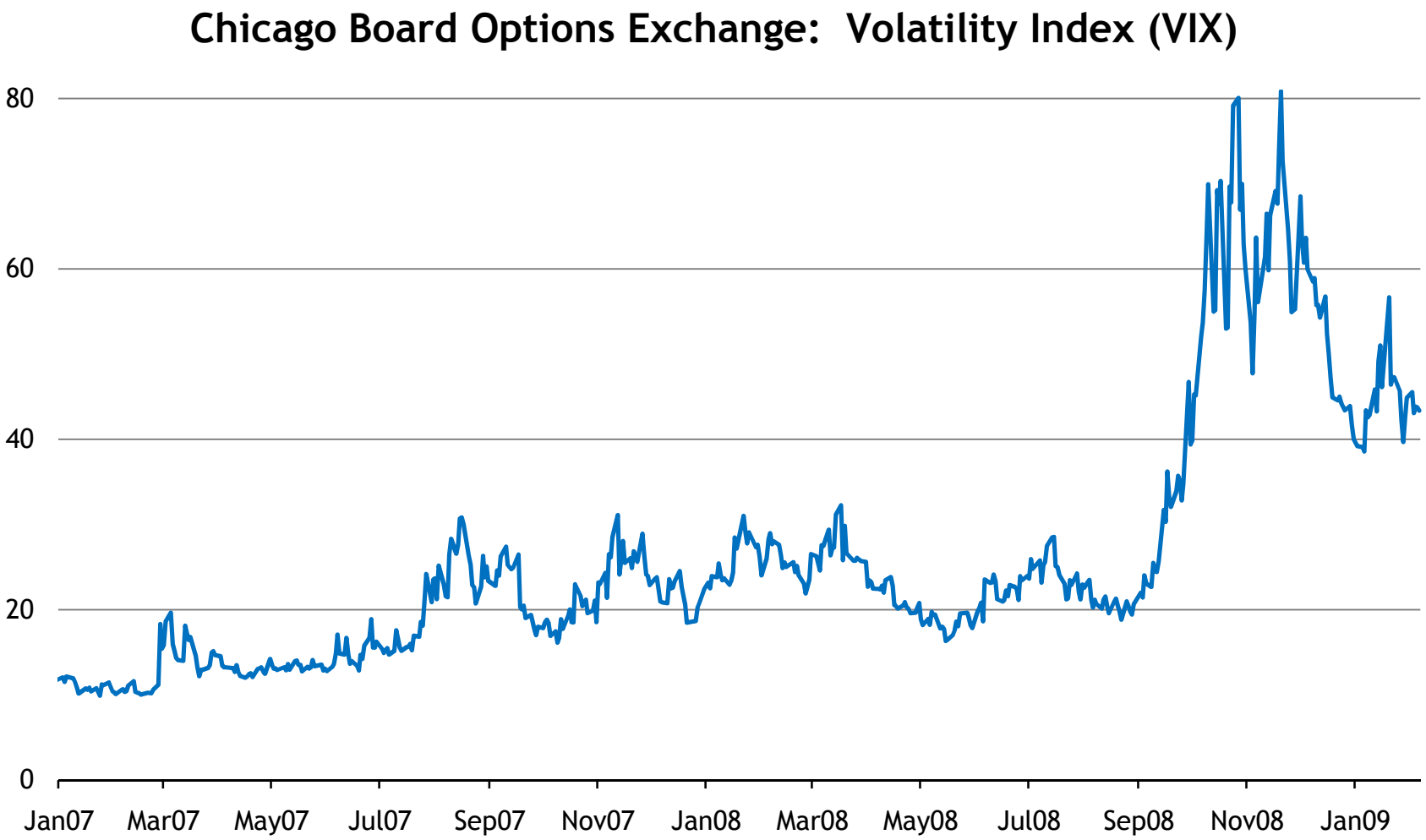
Continuing Market Uncertainty



Source: cboe.com

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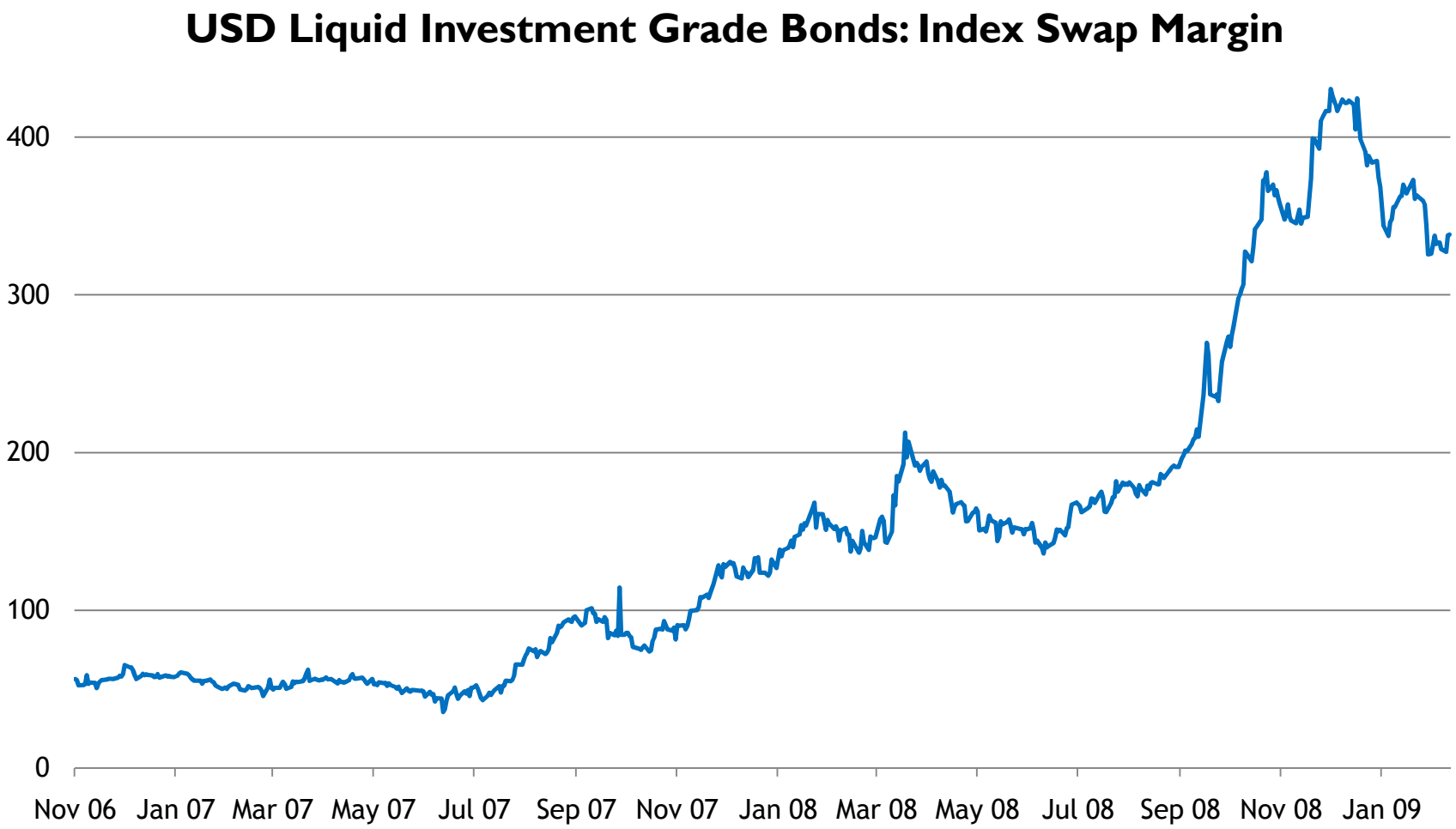
"Exploding" Credit Spreads



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Prevention of future financial crises

The G 20's common principles for reform:

- Strengthen transparency and accountability
- Enhance sound regulation
- Promote integrity in financial markets
- Reinforce international co-operation
- Reform international financial institutions

Actuaries believe additional measures are needed:

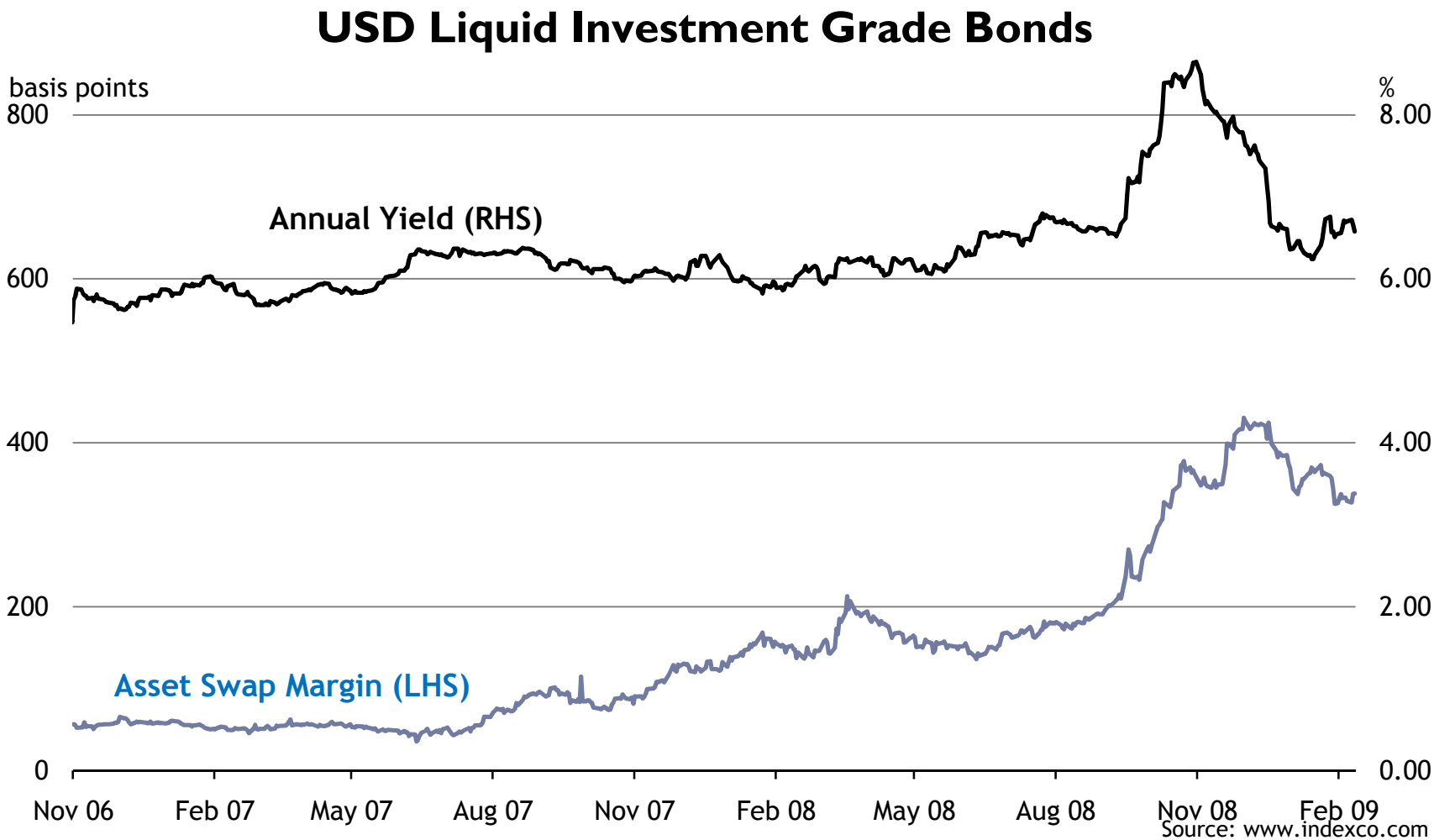
- Introduction of more counter-cyclical regulatory arrangements
- Creation of Country Chief Risk Supervisor role
- Wider use of comprehensive risk management concepts in banks and non-regulated sector
- Improved use of ERM & risk governance

1. Counter-cyclical regulatory arrangements

At a "macro" or systemic level

- Dynamic and counter-cyclical rather than pro-cyclical
- Transparent changes for capital requirements for banks, insurers and other market makers
- Don't rely just on monetary policy/interest rates - use early warnings when asset market "bubbles" emerge
- Provides "shock-absorbers" manage avoid higher capital requirements when asset markets are already weak

Increasing credit risk margins vs official interest rate reductions



Source: www.indexco.com

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2. Country Chief Risk Supervisor (CRS)

At a "macro" or systemic level

Country Chief Risk Supervisor role :

- Create risk appetite policy based on key risk indicators
- Monitor and publicly report macro risk indicators
- Facilitate risk identification, and reporting at national and international levels
- Providing a framework:
  - to better manage risks and
  - to fill gaps in current geographic and industry protocols

Systemic Risk Indicators

Examples

- Leverage in the economy – household debt/GDP
- Leverage in institutions – total assets/capital
- Money supply measures (especially growth of these)
- Volatility, turnover & bid spreads in major financial markets
- Credit spreads
- Growth in derivatives markets – particularly options
- Major changes (especially concentrations) in market sectors
- Real interest rates – actual or implied
- Equity dividend yields
- Commercial real estate yields or IRRs
- Residential property affordability – median price/AWE
- Commodity prices
- Corporate profit margins
- Bonus levels paid by financial firms

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Most already available – need more holistic approach

3. Wider Use of Risk Management Concepts

At a "micro" or individual regulated entity level

Wider use of comprehensive risk management concepts

- Use a "control cycle" approach to the measurement and management of risk for assets and liabilities
- Incorporate allowance for extreme event outliers
- Introduce financial condition and stress test reporting (beyond just accounting)
- Independent sign-off on liability and loan loss provisioning for regulatory purposes by qualified professionals subject to a formal codes of conduct and disciplinary processes

4. Risk Governance

Improved use of ERM & risk governance

- Improved risk governance processes to more consistently measure, apply, stress test and transparently report risk indicators

- Underlying concepts should be applied by all financial market participants – consistent with principles outlined in IAA paper on Enterprise Risk Management (ERM)

Lessons learned - The actuarial profession's perspective

1. Need for a dynamic risk sensitive framework to avoid under-pricing of risk
2. Risk modelling that addresses inadequate risk measures
3. Risk Culture and Remuneration Incentives
4. Valuation of Illiquid liabilities and the use of Risk Margins in accounting
5. Recognising that the objectives of risk (or prudential) reporting and general purpose financial reporting are different
6. Need for a "Control Cycle" approach such as used by the actuarial profession
7. Independence and role of the Risk Function in prudentially regulated entities
8. International prudential regulation needs to be less "silo" driven

Need for a dynamic risk sensitive framework

Stability of financial services requires principles-based, comprehensive and risk-sensitive regulatory framework

Approach must include tracking risk measures in unregulated financial sectors in order to manage emerging systemic risk

To avoid under-pricing of risk, actuaries favour regulatory approach that is dynamic and responsive across all sectors and national jurisdictions

Major contributor to current crisis was absence of risk-sensitive capital charges for sub-prime lending and CDOs

Traditional approaches failed to identify real risks and expose inadequate capital support, leading to their under-pricing

Risk Modeling and Inadequate Risk Measures

Risk management – more than just risk models

- Risk models must be embedded in appropriate risk governance and entity-wide risk culture
- Some models, are not sufficiently sensitive to extreme events or exposure to systemic risk

Clarity and transparency

- Must be clearly defined and communicated risk appetite
- Clear roles and responsibilities for risk management
- Modelling assumptions and results need to be transparent, understood, regularly debated

Improved risk measures

- Excessive focus on Value at Risk – measures a **minimum** amount of loss arising from a given low probability event, rather than the level of losses **expected** to arise from the event
- Better risk measures (e.g. Tail VaR) and use of "fat-tailed" non-normal distributions to avoid underestimating risks

Risk Culture and Remuneration Incentives

- Should not distort the proper evaluation of risks,
- Increase capital requirements for market participants with remuneration incentives focussed excessively on short term results

Remuneration Incentives &

- A poor risk culture will allow human behaviour and mis-aligned remuneration incentives to work against the timely reporting of risk-critical information
- Timely reporting of risk-critical information is crucial so that prompt corrective action can be taken

Risk Culture

Valuation of Illiquid Assets and Liabilities and the Use of Risk Margins

- Actuarial approach to valuing illiquid liabilities may be usefully applied to assets where trading has ceased to exist in current market conditions
- The IASB has recognised the merit of such actuarial techniques in their recent work on accounting for insurance
- Use of risk margins could be extended to accounting for non-traded banking assets and liabilities
- This could be used to improve the transparency, reliability and consistency of risk and performance reporting for financial institutions

Recognise a "Total Risk Balance Sheet" - Different to a financial reporting format

Application of a total balance sheet approach to measure:

- Amount of capital required to support the assets and liabilities of the business
- The actual capital available excluding all interests not truly at "arms length"

Focus of general purpose financial reporting is on:

- What actually happened in the past period rather than what could happen in future
- The assessment of a single number for reported profit, not recognising the various sensitivities in the values of both assets and liabilities

More effective assessment and communication of the consequences of uncertainty is needed

- For example, proper understanding of the value of some assets and liabilities can only be provided through the use of ranges of their potential future value.
- Consistent risk measures and sensitivity testing, which reflect the potential of those values to change in the future, should be utilized.

Need for a "Control Cycle" Approach

Current capital markets activity is based on daily procedures that can lose sight of the bigger picture:

- the longer term
- whole market risks
- shifts in fundamental risk parameters
- systemic risks and/or
- unexpected correlations between events, whether extreme or not

"Control Cycle" approach is used when managing long term risks that cannot be traded easily (due to the nature of many insurance and pension liabilities)

Actuaries actively use the concept of a "Control Cycle" for:

- Modeling of expected results
- Measurement of actual results
- An explanation of the differences between the expected and actual results, and
- Use of those findings to recalibrate and strengthen the model

Wider application of this modeling and management process:

- Will improve modeling of financial markets and capital requirements for financial market participants
- Will improve the capacity for action before a financial disaster
- Is more likely to succeed when placed under stress

Independence and Role of the Risk Function

Risk management must be viewed as integral to the operation of the business and not just as a cost or regulatory requirement

Strengthening risk management functions will result in growing professional responsibilities for actuaries, risk officers and their teams

Risk teams require:

- Freedom to take an objective view that may differ from management's - based on unrestricted access to the same information
- A culture of mutual understanding and respect between line management and the risk function across an entity
- Differing views on material matters must be reported to the board and be transparent to the prudential regulator
- Professional and disciplinary standards (already in place in the actuarial profession)

International Prudential Regulation needs to be less "silo" based

The current crisis has reinforced the necessity for :

- Internationally co-ordinated principles based risk sensitive regulation, and
- Integrated supervision of major international financial groups