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

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IAA

The International Actuarial Association (IAA), representing the global actuarial profession, sees many lessons being learned from the current crisis

Actuaries, experienced in measuring and managing risk, are suggesting potential reforms, improvements and solutions applicable across the financial services sector

Some Insurance Industry Issues .....

- Very low market interest rates will lead to low "risk-free" discount rates for liabilities and hence higher liability values
- When combined with low asset values, especially in jurisdictions where assets are marked to market, this will lead to significant pressure on emerging earnings, capital positions and solvency
- Life insurers with significant capital guarantees or minimum interest rate crediting obligations inherent in their product liabilities will come under intense pressure
- Embedded Values reported will drop
- Increasing surrenders & decreasing new business likely

Some Insurance Industry Lessons …..

- Valuing illiquid assets reliably on a market consistent basis has become challenging
- Further difficulties arise in disaggregating spreads to obtain a fair "risk-free" rate (separating risk-free from illiquidity & credit risk margins) so liabilities can be valued
- The insurance industry is less susceptible to contagion risk than banking industry as it is less inter-connected
- Most insurers handled market risk well due to tough experience from 2003 to 2005, but credit and illiquidity risk have caused some problems
- Strong holistic stress tests have worked well where they were rigorously applied (e.g. UK FSA ICA's)

Further Insurance Challenges in EU

- Solvency II development has improved capacity to cope

BUT,

- Solvency II based on one year VaR (99.5%) risk measure
- This relates capital required to (recent) historic volatility, potentially introducing pro-cyclicality - as periods of low risk will lead to low Economic Capital outcomes that will not be adequate when higher volatility emerges (as at present)
- Most companies have been forced to review assumptions about correlation between risks as global financial crisis has exposed correlations previously considered to be low
- Economic Capital will generally increase as volatility rises

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

Counter-cyclical regulatory arrangements

At a "macro" or systemic level

Prudential regulatory arrangements

- Should be more dynamic and counter-cyclical rather than pro-cyclical
- Allow for the transparent change of capital requirements for market participants - not just interest rates - when early warnings of market bubbles emerge
  - For example, capital "shock-absorbers" could provide the capacity to allow draw downs of such capital during periods of subsequent market stress rather than having to enforce tougher capital requirements

Country Chief Risk Supervisor (CRS) Role

At a "macro" or systemic level

Creation of a Country Chief Risk Supervisor role to minimise systemic financial risks by :

- Creating national risk appetite policy based on key risk indicators
- Monitoring and publicly reporting macro risk indicators
- Facilitating risk identification, communication with appropriate decision-makers, at national and international levels
- Providing a framework:
  - to better manage risks and
  - overcome the gaps in geographic and industry silos that critically weaken current risk management 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/offer 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

Most already available & used – more holistic approach

Comprehensive Risk Management Concepts

At a "micro" or individual regulated entity level

Wider use of comprehensive risk management concepts

- The risk management framework of any entity providing financial or insurance guarantees – including banks – should include key concepts of a "control cycle" approach to the measurement and management of risk for assets and liabilities, including:
  - incorporating allowance for extreme event outliers
  - specific financial condition reporting (beyond just accounting)
  - independent sign-off on liability and loan loss provisioning for regulatory purposes by professionals (such as actuaries) subject to a professional codes of conduct and disciplinary processes.

Risk Governance

Improved use of ERM & risk governance

- Improved risk governance processes being adopted by all financial market participants 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 and recent IAIS Standards).

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, although mathematically convenient, are not sufficiently sensitive to extreme events or changes in exposure to systemic risk, effectively invalidating their value in anticipating extreme events

Clarity and transparency

- Must be clearly defined and communicated risk appetite
- Clear roles and responsibilities for risk and corresponding limits on risk taking, use of stress and scenario testing.
- 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 (Tail Value at Risk) and use of "fat-tailed" non-normal distributions avoids systematically underestimating real risk exposures

Risk Culture and Remuneration Incentives

- Should not distort the proper evaluation of risks, especially where regulatory loopholes or prudential inadequacies open the door for underpricing

- IAA supports concept of increasing 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 management can take corrective action to respond to emerging risks before they become too onerous

Risk Culture

Objectives of risk reporting and general purpose financial reporting are different

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

The IAA believes that 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
- Risk managers should have professional and disciplinary standards (already required by the IAA for the actuarial profession)

International Prudential Regulation needs to be less "silo" driven

- The IAA believes the current crisis reinforces the case for internationally co-ordinated, principle-based and risk-sensitive regulation
- The basic principles of Enterprise Risk Management (ERM) remain valid

This crisis has reinforced the necessity for effective and integrated supervision of major international financial groups

- Holding companies of international financial services groups need to be supervised in a manner similar to other group entities
- Proper group supervision would lead to improved communication between group holding companies, their subsidiaries, and regional regulators

Conclusions

- Active change is required to restore the confidence of the public – policyholders and prospective pensioners – in the stability of financial security programmes:
  - Conscious counter-cyclicality supervised by an independent authority should be an objective for Pillar 1
    - We welcome thinking in this direction in de Laroisiere report
  - Stress-testing to destruction should be part of the supervisory review dialogue in Pillar 2
    - Managements should understand what scenarios, however implausible, are potentially fatal
  - Enterprise risk management should be regarded as a core business function like finance, and subject to similar rigour
    - Education requirements and standards of professionalism should be explicit and take into account the wider public interest