Financial stability, systemic risk & macroprudential supervision: an actuarial perspective

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Agenda

- Introduction
- IAA activity on financial stability and systemic risk
- Systemic risk and insurance – Are we asking the right questions ?
- Lessons learned ?
- Behavioural issues ?
- Counter-cyclical capital adequacy requirements ?
- Accounting Standards ?
- Solvency II & Diversification allowances ?
- Transparency & Disclosure ?
- IAA thoughts on the way forward

Introducing the International Actuarial Association (IAA)

- Paul Thornton, President, IAA
- The IAA represents the global actuarial profession, experienced in measuring and managing risk
- IAA has 85 member associations in 75 countries
- Relevant IAA committees and taskforces include:
  - Insurance Regulation & its Solvency sub-committee
  - Enterprise and Financial Risk
  - Insurance Accounting
  - former Global Financial Crisis Task Force - active in 2009

IAA and IAIS have significant mutual interest

- IAA has been an active participant in recent Solvency and Actuarial Issues Subcommittee meetings
- IAA has contributed relevant publications including:
  - A Global Framework for Insurer Solvency Assessment
  - Measurement of (Insurance) Liabilities: Current Estimates and Risk Margins
  - (forthcoming - early 2010 release) Stochastic Modeling – Theory and Reality from an Actuarial Perspective
- IAIS is an Institutional Member of the IAA; IAA is an Observer member of the IAIS
- Both IAA and IAIS have been considering potential reforms, improvements and solutions applicable to insurance and/or across the financial services sector.

What is systemic risk? (IMF/FSB/BIS)

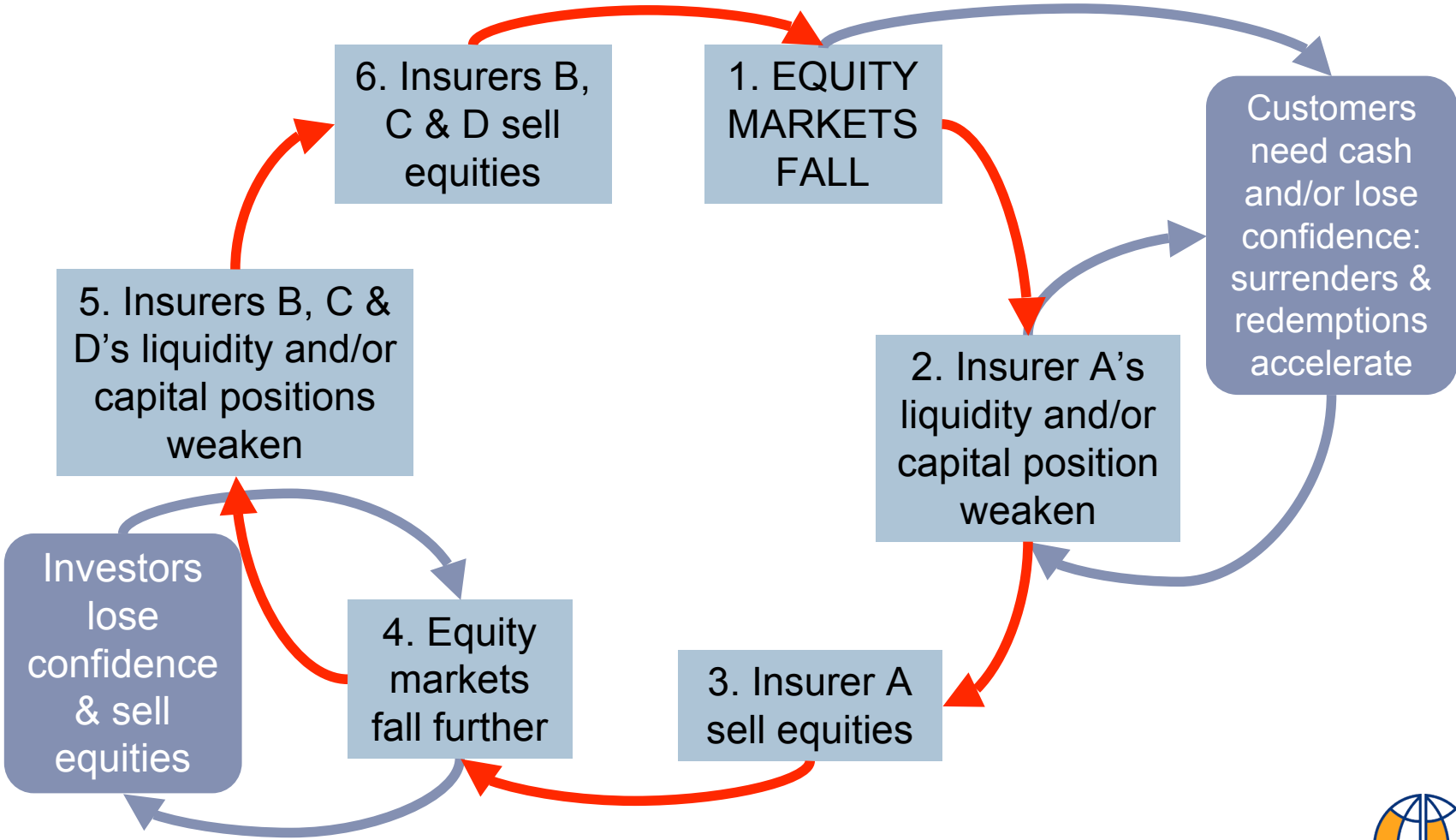
The risk of disruption of financial services that is

(i) caused by impairment of all or parts of the financial system, and

(ii) has the potential for serious negative consequences for the real economy

- Relevant factors in systemic risk assessment:
  - Size
  - Lack of substitutability
  - Interconnectedness
- Features may include:
  - Transmission of risk between financial institutions seeking to improve their own position
  - “Feedback” loops

Systemic risk feedback cycles: falling equities example



Other examples of systemic risk in insurance

- Failure of a major reinsurer impacting reinsured companies
- Failure of non-regulated entities within an insurance group (e.g. AIG) causing external distress
- Lloyds “Spiral” of early 1990’s
- Insurers issuing maturity and/or minimum investment return guarantees which create asset liability mismatches

Some causes of systemic risk in insurance

- Excessive focus on individual insurers' positions rather than on the system as a whole
- Lack of firms' (and their regulators) thinking systemically
  - "What if everyone else is doing the same as I am - will we be trampled by the herd?"
- "As long as the music is playing, you've got to get up and dance. We're still dancing…"
- "You can only be as good as your dumbest competitor"

Some related issues

- Counterparty risk and contagion effects of insurer failure
  - Especially if insurer is providing reinsurance or other guarantees, or has CDS exposure or non-regulated activities in a group
- Liquidity risk / forced sale of portfolio assets
- Non-regulated entities within an insurance group
- Regulatory regimes for multinational groups and respective roles of local and group regulators
- Regulatory arbitrage
- Asset valuation in illiquid markets
- Behavioural risk

Behavioural risk - a CRO's dilemma

- CRO is convinced there is a market bubble about to burst
- What actions can the CRO take to protect the firm ?
  - **Ask firm to exit or reduce activity in the exposed business** But why will management want to give up the firm's profitable market share in a business when competitors are still entering, and probably lose the most talented and expensively-recruited top-performing staff ?
  - **Implement hedging strategy using derivatives -** but if the CRO recognises the problem "too early" (say in 2005 for CDOs) this will result in such large losses that the CRO would probably be dismissed
- Conclusion: Need to consider the **behavioural foundations** of systemic risk – e.g. profit motive, herding, the effects of success & panic sell-offs

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
- Identify regulators to manage systemic risk
- Wider use of comprehensive risk management concepts in banks and non-regulated sector
- Improved use of ERM & risk governance

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

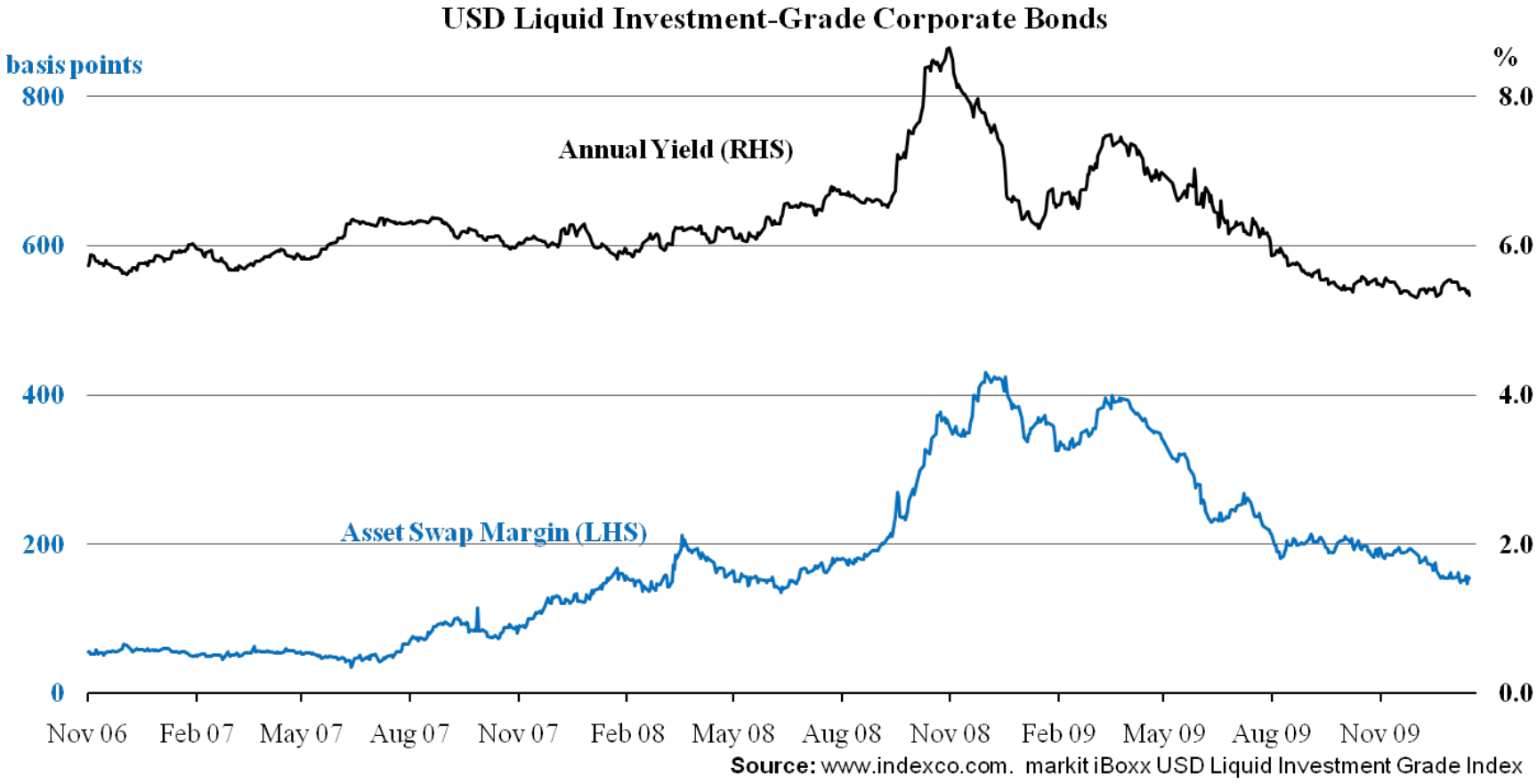
Major contributor to current crisis was absence of risk-sensitive capital charges for sub-prime lending and CDOs

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

Lessons learned point to some answers

- Over-reliance on monetary policy to control retail price inflation and economic activity
- Risks inherent in asset market bubbles were largely ignored until it was too late
- Expanding credit spreads during the crisis largely neutered effectiveness of lower official interest rates in much of developed world
- Pro-cyclical capital requirements (often caused by inadequate risk models and/or poor risk measures) made the crisis worse
- In some cases there was no capital required at all where it should have been
- **New counter-cyclical tools are needed that adjust capital adequacy requirements for banks and other financial institutions**

US monetary policy: Increasing credit risk margins vs official interest rate reductions



Source: www.indexco.com. markit iBoxx USD Liquid Investment Grade Index

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 provisioning and capital requirements for market participants - not just interest rates - when early warnings of market bubbles emerge
  - “Shock-absorbers” could provide the capacity to allow transparent draw down of reserves during periods of subsequent market stress rather than having to enforce tougher capital requirements

Counter-cyclical capital adequacy?

- Can this be done at all?
- Who should be responsible for managing it?
- What tools should be used?
- What costs will be imposed and will they be worth it to avoid the busts?
- What financial institutions should be covered in the regime?
- How should we implement it?
- Do we need another inquiry before we do this?
- Will this be enough and what other measures are needed?

Seeing asset market "bubbles" in real time?

- Conventionally this was regarded as a fallacy, but in March 2000 we saw
  - *Valuing Wall Street* - Andrew Smithers & Stephen Wright, and
  - *Irrational Exuberance* - Prof. Robert Shiller
    - Both then said "Stockmarkets are over-valued"(and were proved right)
  - *Wall Street Re-Valued* - Andrew Smithers - March 2009
    - Demonstrates that "q"and "CAPE"can measure over/under valuation of equity markets as a whole
    - Asserts that central banks can and should adjust policy when they consider asset markets to be over valued

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

Most already available & used – more holistic approach

Dynamic capital adequacy is one way forward and can take various forms

Formula-based

- Can be tailored for insurer types (and for banks and other market participants by relevant regulators)
- Consistent with existing life insurance resilience reserving in some jurisdictions
- Easier to implement
- Formulae based on market levels
- People can see what's coming
- Government retains more control
- Could be implemented by national prudential supervisors with government approval

Discretionary

- Implemented by an independent authority (e.g. a central bank) in consultation with prudential regulator(s)
- Provides another tool to manage economy other than just monetary policy and fiscal policy
- Lines of authority/control are not obvious / clear – policy will be required
- Analogous to existing operation of monetary policy by central banks

How a formula based approach could work

Current Life Insurance Resilience Reserves	
Class	Prescribed Yield Change
Equities	+/-0.5% + (0.4 x Yield)
Property	+/-2.5%
Interest Bearing	+1.3% + (0.25 x Swap rate) - 0.2% + (0.25 x Swap rate)
Indexed Bonds	+/-1.0%

How the formula based approach works: equities example

	Dividend $	Current Yield	Current Value	Adjusted Yield	Adjusted Value	Capital Required	Capital as a % of Value
Now	100	4.0%	2,500	6.1%	1,639	861	34%
Later	100	3.0%	3,333	4.7%	2,128	1,206	36%
Change			**833**			**345**	**41%**

Discretionary vs formula based - related issues

- In good times, insurers have been over-optimistic about the costs of providing financial guarantees ("disaster myopia")
- North America: introduction of capital requirements for variable annuities caused re-pricing
  - Insurers: "but the premiums are too low to support cost of hedging"
  - Did market have a stronger view of the level of the risk?
- Timing - What if market bubble bursts just as guarantees are due to mature, or just after guarantees are issued?
- Are such market risks insurable?
  - Claims are not independent

If counter-cyclical capital requirement existed - would regulators also suffer "disaster myopia" in the good times?

- Formula-driven approach would address this
- Need to test resilience to extreme scenarios

Wider Use of Risk Management Concepts

At a “micro” or individual regulated entity level

- 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
  - mandatory reporting of “Probability of Sufficiency” of provisions

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

IASB / FASB: December 2009 progress towards agreement on Accounting Standards

- Tentatively decided that current assessment of the insurer's obligation should use:
  - the unbiased, probability-weighted average of future cash flows expected to arise as the insurer fulfils the obligation;
  - the time value of money;
  - a risk adjustment for the effects of uncertainty about the amount and timing of future cash flows; and
  - an amount that eliminates any gain at inception of the contract [“residual margin”]
- The boards also tentatively decided that:
  - the risk adjustment should measure the insurer's view of the uncertainty associated with the future cash flows
  - the measurement of an insurance liability should not be updated for changes in the risk of non-performance by the insurer
- IASB / FASB proposals for initial expenses now appear to be moving towards a “solvency” view

Insurance Accounting Standard AASB1023 in Australia since 1 Jan 2005

- All assets at market value, through Profit & Loss A/c
- Full prospective assessment required for liabilities based on prospective expected loss (unearned premium used as a proxy for pre-claim liabilities)
- Discount insurance liabilities at risk–free interest rates
- Risk margins mandatory for insurance liabilities
- Mandatory disclosure of central (best) estimates of insurance liabilities as well as liabilities with risk margins
- Mandatory disclosure of Probability of Sufficiency (PoS) of insurance liabilities with risk margins
- Mandatory disclosure of sensitivity of insurance liabilities to key assumptions e.g. inflation, claims severity, claim frequency

Mandatory disclosures - a vital component

Further insurance challenges in EU

- Solvency II development has improved insurers' capacity to cope

BUT

- Solvency II based on one year VaR (99.5%) risk measure
- This relates capital required to (recent) historic volatility, 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 in 2008-09)*
- Economic Capital will generally increase as volatility rises
- **Considerable care will need to be exercised when approving "Internal Models"**

* See Andrew Haldane (BoE) "Why Banks Failed the Stress Test" Paper - 13 Feb 2009

Diversification Allowances

- A point of difference with the banking industry
- Material impact on Economic Capital outcomes
- Considerable debate about :
  - Methods of calculation
  - Dependencies / Correlation between various risks
  - Level within a group where calculation is applied
  - Disclosure of assumptions and impacts
  - Interaction with capital fungibility and group capital
- Difficulties separating individual company stress events from impacts on company of systemic stress events

G20 context highlights the challenge ahead

- Intentions are shared but varying implementation options
- Capital adequacy way forward generally accepted, but details not yet agreed
- Views on global accounting standards are becoming less divergent
- Government guarantees for banks need coordinated winding down globally
- Fragile global economy suggests decisions and implementation timeframes will not be imminent - especially for the “Framework for Strong, Sustainable & Balanced Growth”
- Dangers inherent in reform fatigue as crisis fades

What does the wider "To Do" list look like?

- Banks and insurers deemed "too big to fail" need to accept tougher new capital adequacy rules that increase the cost to them of risky behaviour
- Originators of securities will also need to keep more "skin in the game", retaining a minimum stake in securitised assets and/or off balance sheet vehicles
- Accounting standards must adapt to allow banks to set aside loan provisions based upon expected losses when loans are written rather than waiting until bad debts are actually realised
- Bonus payments need to reflect the risks taken to earn profits (and the capital employed to do so) and long term rather than short term performance
- Global financial imbalances must be resolved –currencies must be allowed to float while major developed economies work through their debt de-leveraging
- **None of this will be easy** - the "devil" really will be in the "detail"

In Conclusion

- Systemic risk remains prevalent
- Dynamic (formula driven?) capital adequacy regime required
  - to avoid under-pricing of risk
  - to mitigate behavioural risk
- Meaningful disclosure and use of standards will be key to achieving increased stability, reliability, consistency and comparability