



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

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Presentation to OECD Insurance and Pensions Committee  
June 2010

# 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 ?
- ▶ 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 IPPC have significant mutual interest

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

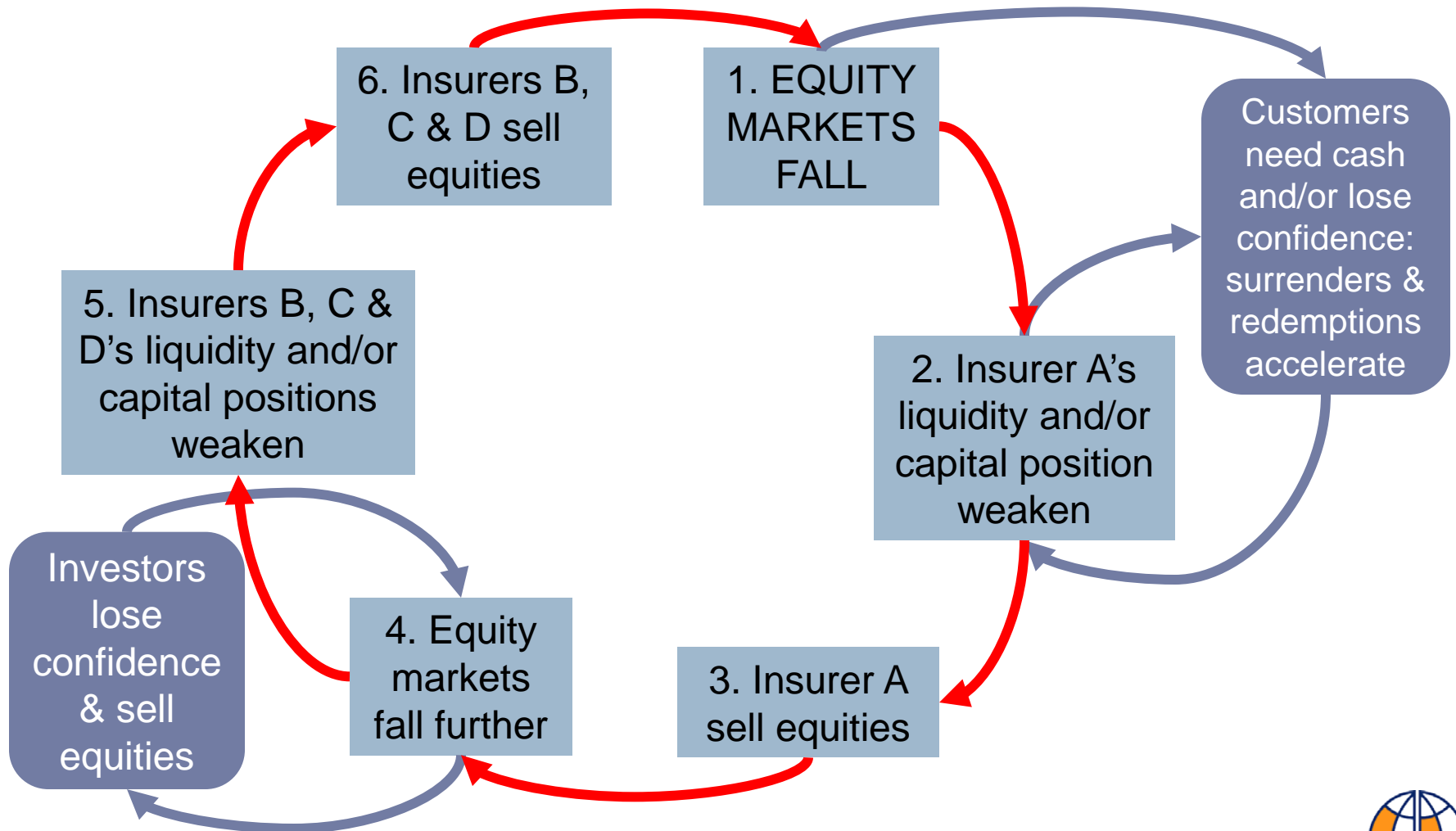
# What is systemic risk? (IMF/FSB/BIS)

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**

# 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?

## Systemic Risk Indicators

- ▶ 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

# 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

# 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

## 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