First Enterprise Risk Management Seminar

Institute of Actuaries of Australia

Beyond The Global Financial Crisis

How the Financial Services Industry Will Change

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Where to from here ?

- The future of global risk management post GFC

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G20 musings highlight the challenge ahead

- Intentions are shared but implementation options vary – lots of conflicting agendas and "elastic words".
- Executive pay rules similar to APRA's gaining ground globally
- Capital adequacy way forward agreed but details up for grabs
- Practical conflict between having fewer large banks & more capital for banks
- Divergent views on global accounting standards remain – which make seriously dilute the impact of proposed financial leverage rules
- 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 "To Do" list look like ?

- Banks and insurers deemed "too big to fail" will 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"**

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 their 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 was ineffective in GFC

USD Liquid Investment-Grade Corporate Bonds

Basis Points

%

900 9.00

Annual Yield (RHS)

600 6.00

300 3.00

Asset Swap Margin (LHS)

0 -

Nov 06 Feb 07 May 07 Aug 07 Nov 07 Feb 08 May 08 Aug 08 Nov 08 Feb 09 May 09 Aug 09

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

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

Formula-based

- Can be tailored by organisation type
- Consistent with existing Australian life insurance resilience reserving
- Easier to implement
- Formulae based on market levels
- People can see what's coming
- Government retains more control
- Would be implemented by APRA with government approval

Discretionary

- Implemented by an independent RBA in consultation with APRA
- Provides another tool to manage economy other than just monetary policy and fiscal policy
- Lines of authority/control are not obvious / clear – policy required
- Analogous to existing operation of monetary policy by RBA

How the formula based approach works

Current Life Insurance Resilience Reserves

	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					488	345	71%

Some insurance and banking basics

- Outcomes of risks from individual insurance policies or loans are unknown when underwritten
- However, when many similar risks are underwritten, expected results of total homogenous portfolio become more predictable
- Losses or claims are driven by:
  - *Frequency (or probability) of a loss or claim event occurring; and severity (or size) of a loss or claim if it occurs*
- Risks inherent in different classes of lending or insurance vary over a spectrum :

High frequency / low severity – outcomes relatively easy to predict reliably

Low frequency / high severity – outcomes are harder to predict reliably

These risk differences can be measured and quantified

Insurance liability & loan loss estimation

Exposure ⟶ Notification ⟶ Quantification ⟶ Settlement

Key measures of risk

- Best estimate of cash flows from claims frequency (probability of default) & severity (loss given default), based on experience of similar portfolios
- Use of suitable probability distributions based on experience (eg lognormal etc)
- Measures of uncertainty

Probability of Adequacy (PoA) (e.g. 50%, 75%, 90%, 99.5%)

Co-efficient of Variation (CoV) (=Standard Deviation / Mean) (e.g. 15%, 30%)

Best estimate and risk margin

Lognormal Distribution

(CoV = 0.3)

Mean

75th Percentile

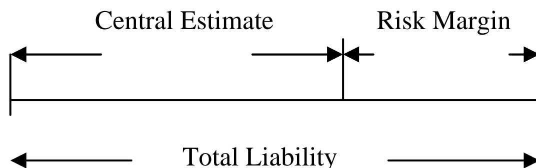
90th Percentile

Increasing Probability

4000 9000 14000 19000 24000 29000

Range of Outcomes

Central Estimate Risk Margin



Probability of Sufficiency (PoS) = the area under the curve to the left of the liability outcome selected.

Best estimate and risk margin – different risk level

Lognormal Distributions

Using an actuarial 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

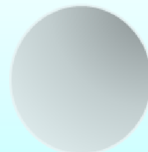
Wider application of this modeling and management process:

- 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

Remuneration and risk culture

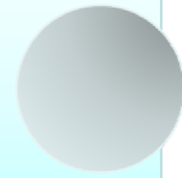
- Should not distort the proper evaluation of risks, especially where regulatory loopholes or prudential inadequacies open the door for underpricing
- IAA supports concept of increasing capital requirements for market participants with remuneration incentives focussed excessively on short term results

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



New accounting standards?

- IASB looking at new accounting standard for insurance that impacts measurement of insurance liabilities
- Reflects what Australian insurance industry has been doing since 2002
- Option to be applied to banks

Brings loss provisioning forward, avoids over-reporting of profits and strengthens reported earnings when losses incurred

Counter cyclical effect

Insurance Accounting Standard AASB1023

- All assets at market value, through Profit & Loss A/c
- 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

Transparency

- **Results tend to be volatile**
  - Discount rates will change with market movements
  - Prospective approach to unexpired risk speeds up recognition of both profits & losses, leading to more active management of the business
- **Disclosure and discipline via standards are vital**
  - Transparency of reporting means that trends in business outcomes are recognised at an earlier stage
  - Regulators of insurers usually require regular (& sometimes independent) professional actuarial sign-offs on liabilities
  - Size of risk margins can be quantified and disclosed
- **Hence "result smoothing" becomes very evident to users/analysts & regulators if attempted by management**
  - All disclosures are auditable and audited !
  - Internal and external reporting can be entirely consistent

Intervention will incur costs

Higher proportions of capital, liquid assets and long term liabilities

Increase bank / insurer costs

Increase the price of financial intermediation

Increase interest rates

Lower levels of investment in and ultimately stock of physical capital

Slower growth in output per person, but lower financing losses

Coverage of the new regime needs to be comprehensive

- Insurance companies
- Retail banks
- Investment banks
- Debenture issuers ?
- Managed Investment Schemes ?
- Superannuation Funds (especially with fund choice) ?

Implementation won’t be easy

- A true global reform process is almost impossible
- Influence of special interest groups in US politics may be paralysing
- Already views are emerging that the GFC was a one-off event
- Australia probably doesn’t need **fundamental** reform
- But there is considerable scope for improvement - we had our fair share of collapses so some changes within remit of ASIC/APRA are needed
- Transition will be less painful for Australia given we’re already some way there

A number of other issues also need to be considered

- Removal of conflicts within rating agencies must be introduced
- Skin in the game (i.e. minimum required capital) for issuers of securitised assets, debenture issuers (In Australia), credit default swap counterparties etc) will help reduce moral hazard
- The consequences of cheap currencies (ie China) for future asset bubbles must be managed
- Ballooning government debt, especially in USA and Europe, which will hobble economic recovery and growth for a considerable period

In conclusion

- We have a long way to go
- Capital management must be central to an effective regulatory response
- Better capital management can be achieved in a number of ways
- Improved risk management will necessarily impact future growth potential
- Other responses must also be considered including executive remuneration aligned to risks taken and longer term returns