

Biennial Convention 2009

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Institute of Actuaries of Australia



The implications of the Global Financial Crisis on our Region

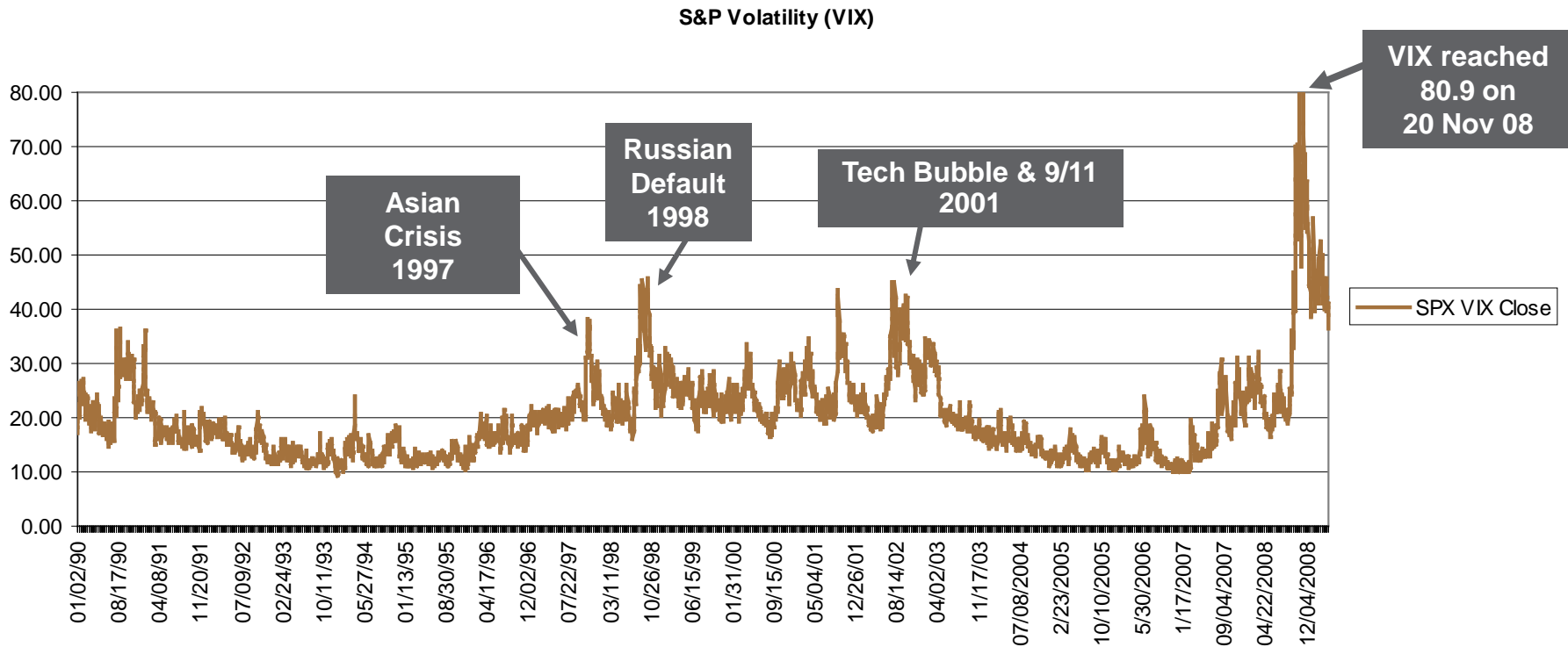
Dr. Don Russell: Chairman State Super

Our region and the crisis

- *Financial and economic implications for Australia*
- *Australia's strengths*

Australia can not escape the severity of this crisis

The “investor fear gauge” or VIX has fallen back but is historically very high



Source: CBOE Volatility Index – VIX Close as of Apr 9, 2009

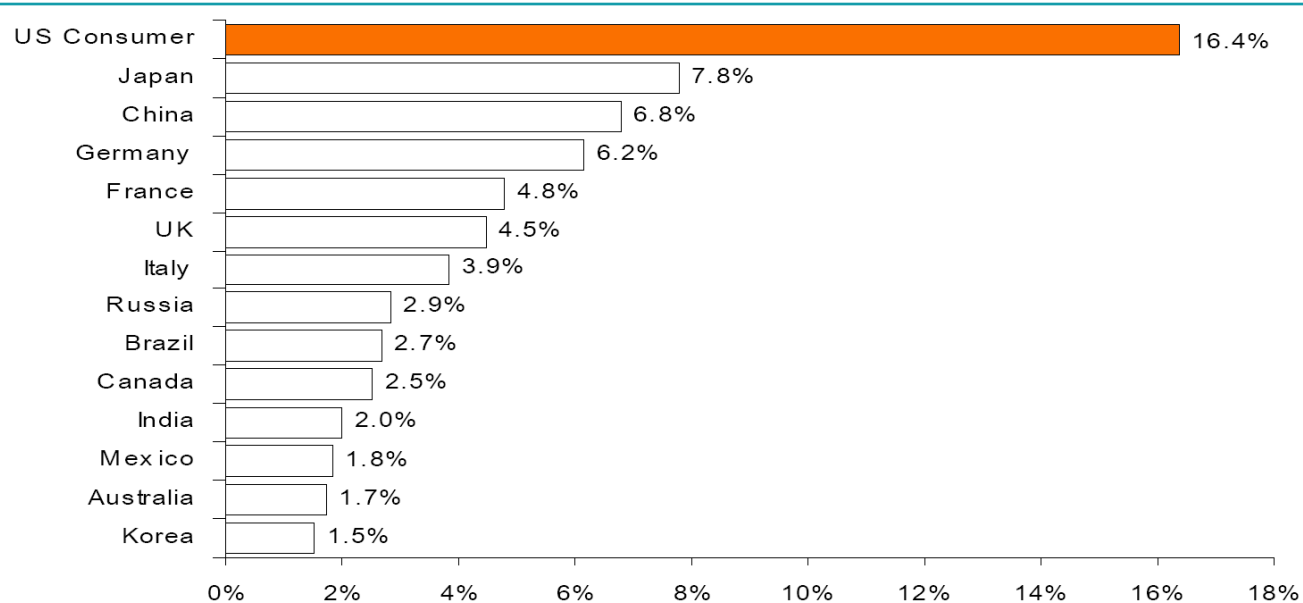
But are we filling in a pot hole or a chasm?

- Severe downturns can create their own dynamics
- Structural imbalances will take time to correct

The US consumer has a key role in any recovery

- Much recent world growth has been underwritten by the US consumer

The US consumer in perspective (percent share of global GDP: 2008)

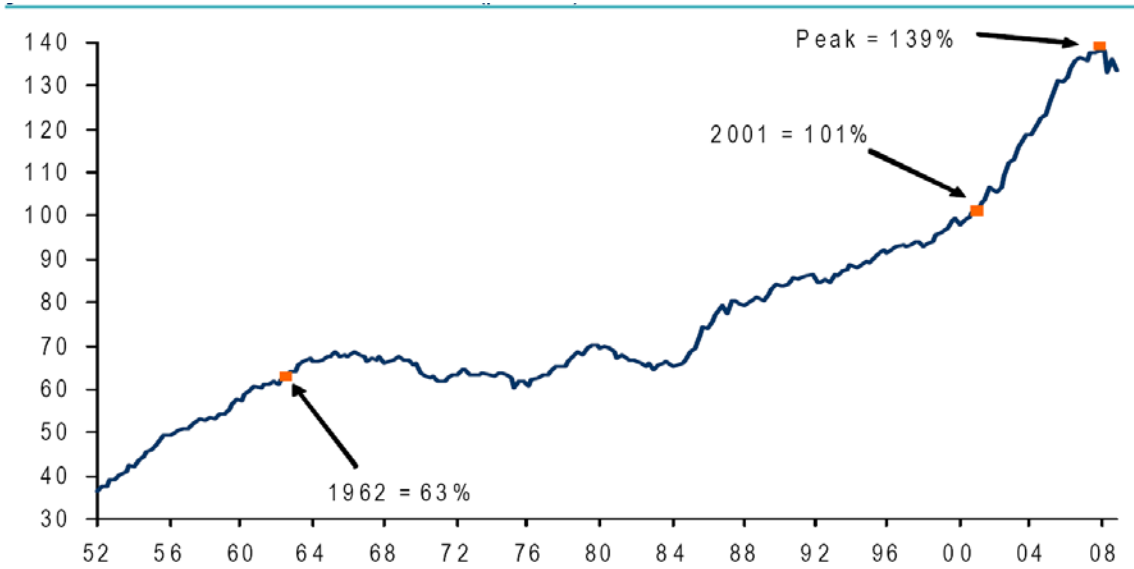


Source: Federal Reserve, Banc of America Securities – Merrill Lynch: Not your father's recession, 10 March 2009

The US consumer is in bad shape

- Household wealth fell by \$12.9tn or 20% in 2008

Household debt to income ratio (percent)



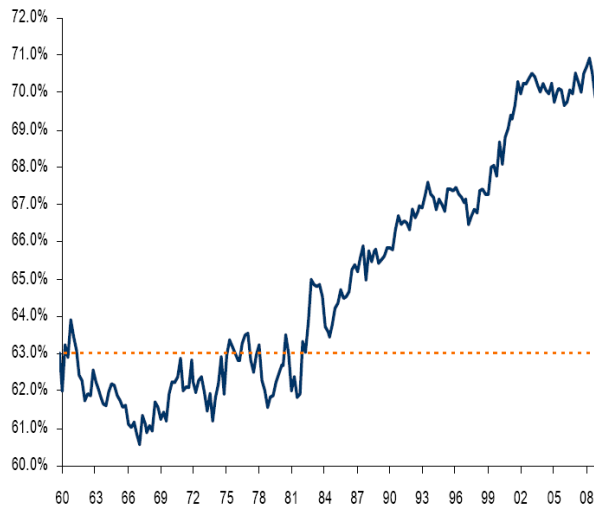
Source: Federal Reserve, Banc of America Securities – Merrill Lynch: Suspended Disbelief, 12 March 2009

US consumption is unlikely to rebound strongly

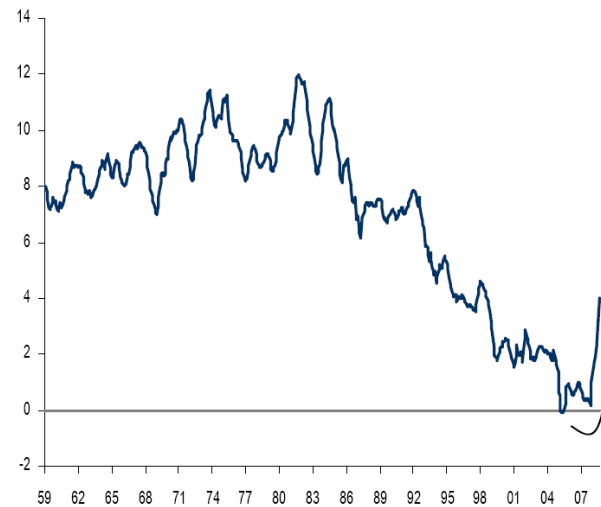
- A structural rebalancing is underway

US consumption and saving (percent)

US Consumer spending as a share of GDP



US Personal Savings Rate
(six-month moving average)



Source: Bureau of Economic Analysis, Banc of America Securities – Merrill Lynch: Not your father's recession, 10 March 2009

The market thinks it sees glimmers of light

- 2009 has worsened but forecast growth rebounds in 2010
- The market has a positive view about China
- But will growth recover in 2010?

Region	2001	2002	2003	2004	2005	2006	2007	2008	2009	Consensus	
										2009	2010
US	0.8	1.6	2.5	3.6	2.9	2.8	2.0	1.1	-2.2	-2.8	2.2
Japan	0.2	0.3	1.4	2.7	1.9	2.4	2.4	-0.6	-6.5	-5.8	0.8
Western Europe	2.0	1.2	1.2	2.2	1.9	3.0	2.7	0.7	-3.5	-2.5	0.3
Australia	2.1	4.3	3.0	3.8	2.8	2.8	4.0	2.1	-0.5	-0.3	2.0
Asia (ex Japan, ex Australia & NZ)	5.6	6.7	7.8	8.2	8.4	9.2	9.8	6.4	3.1	3.8*	6.1
Latin America	0.5	0.1	1.9	6.3	4.6	5.4	5.7	4.3	0.0	-0.7	2.8
Eastern Europe	2.9	4.1	5.7	7.0	5.7	6.9	6.6	5.6	0.3	-1.7	3.2
Advanced economies	1.4	1.6	1.9	3.0	2.5	3.0	2.6	0.8	-3.2	-2.9	1.3
Developing world	3.7	4.4	6.1	7.4	7.0	7.7	7.9	5.2	2.0		4.3
World	2.4	2.8	3.7	4.9	4.4	5.0	4.9	2.7	-0.9	-1.1	2.6

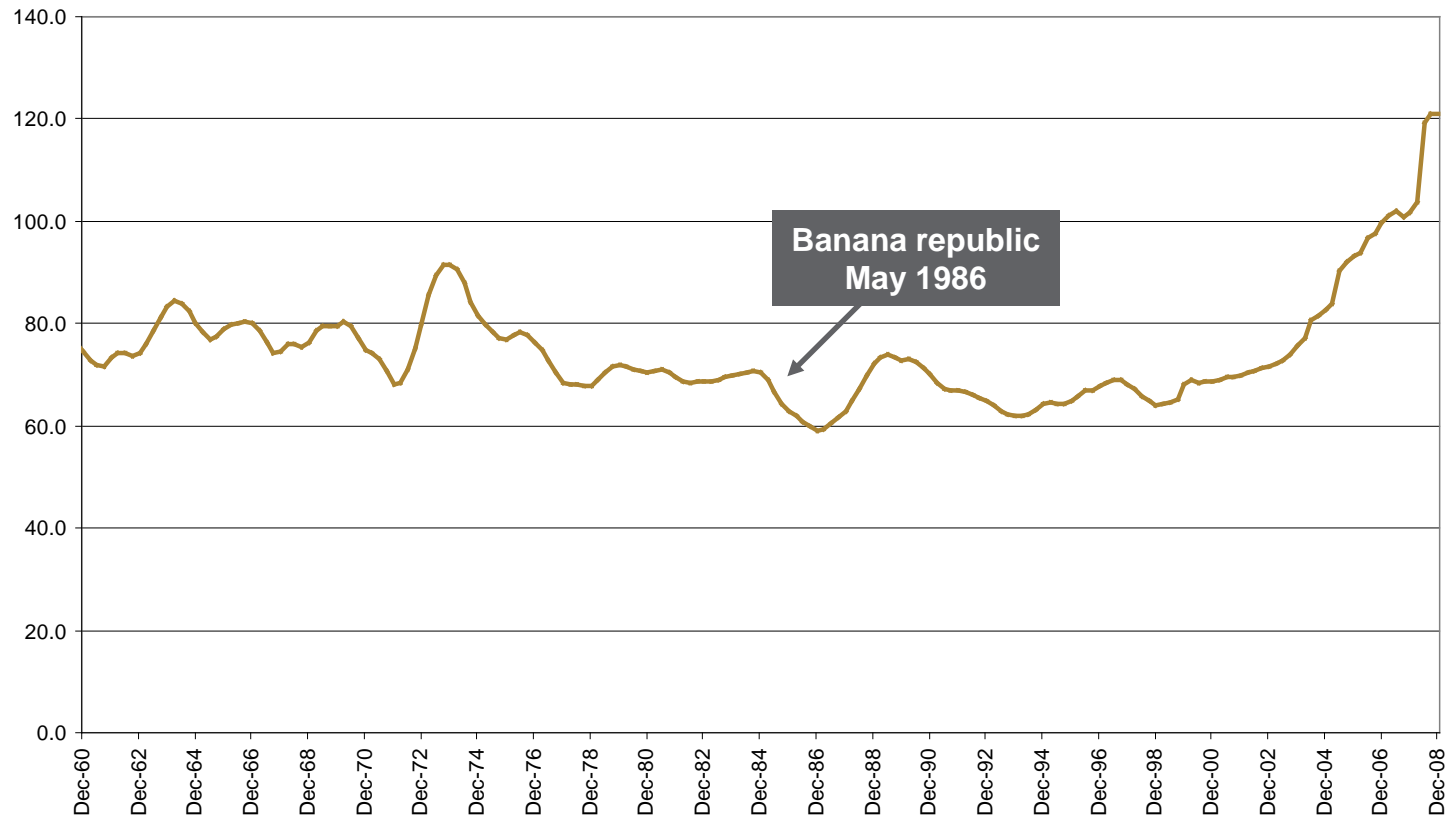
Source: UBS Forecast Data Base April 08, 2009, % YOY

* Asia ex Japan only

The terms of trade make Australia different

The banana republic decline (-17%) lasted just over 2 years; the recent surge (69%) ran for 6 years (9.1% pa in effect adding 2% of GDP each year)

Terms of trade index (trend)

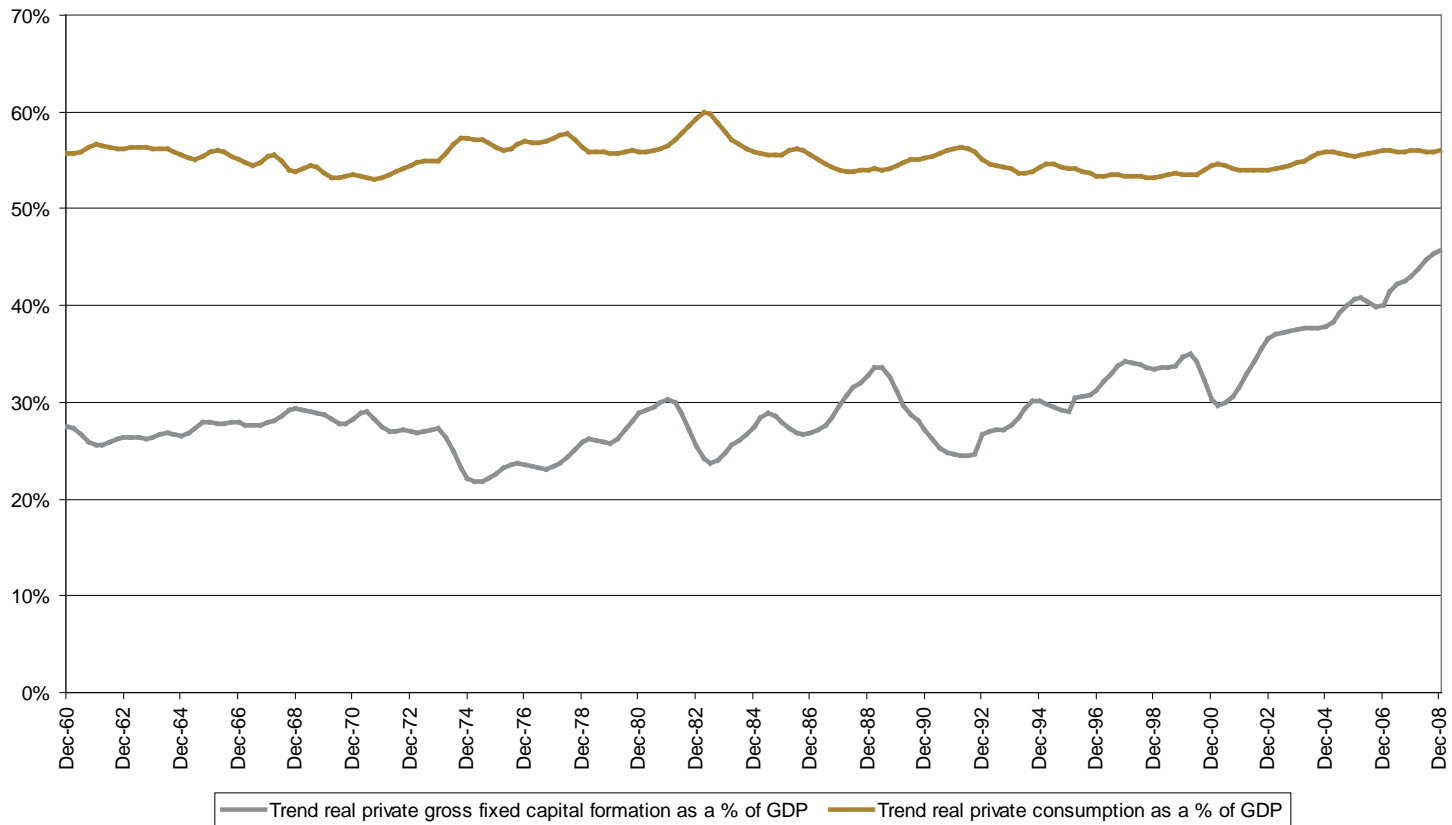


Source: BNY Mellon, ABS ANA 5206.0 Q4 2008

Private investment not consumption has risen

In Q4 08 private investment was equal to 45.7% of GDP

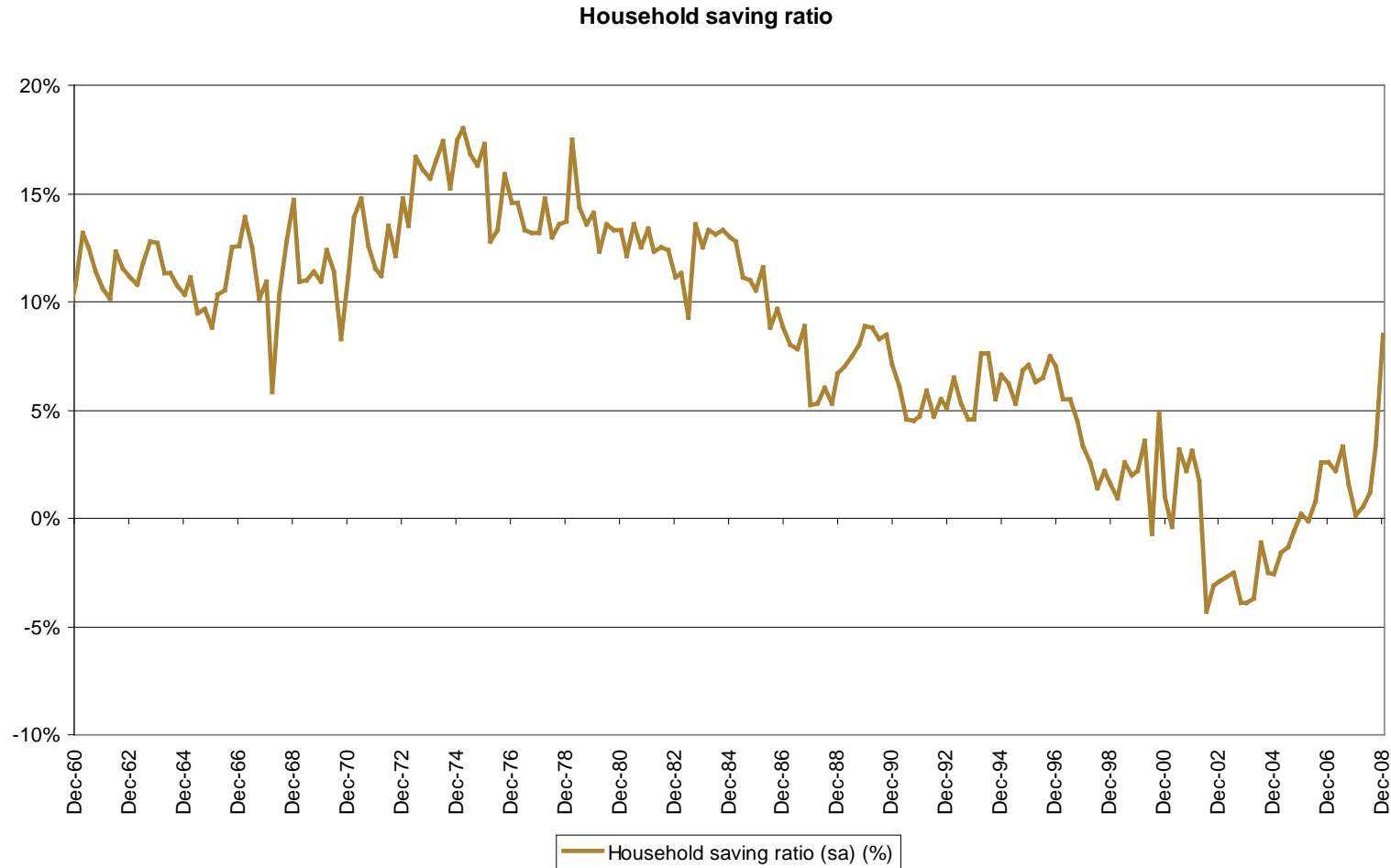
Private consumption & investment share of GDP



Source: BNY Mellon, ABS ANA 5206.0 Q4 2008

The household saving ratio has been rising

- In Q4 08 the household saving ratio rose to 8.5%



Source: BNY Mellon, ABS ANA key national accounts aggregates 5206.0: Q4 2008

Australia benefits from Asia's success

- In 2008 exports to China and India were 22.0% of the total (10.6% in 1998)
- Contract prices for bulk commodities will fall but remain historically high
- The market is positive about the outlook for China and commodity prices
- Total exports were up 37% (China 43%, India 49%) in the 12 mths to Feb09*

Source: BNY Mellon, ABS International Trade in Goods & Services, Merchandise Exports February 2009

** 12 months to February 2009 compared with the 12 months to February 2008*

But net foreign debt continues to rise

- In Q4 08 net foreign debt stood at \$678 bill; gross liabilities were \$1,242 bill

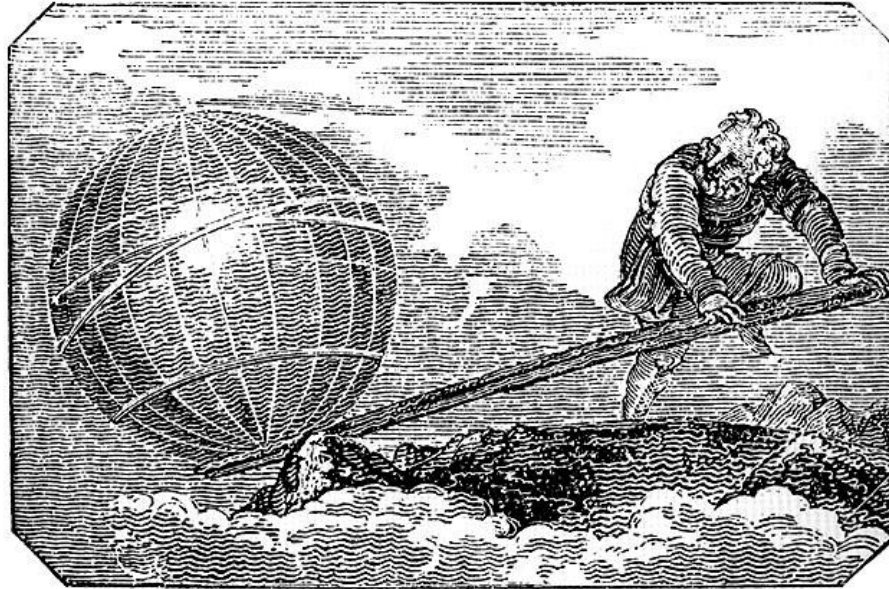
Our region and the crisis

- *Implications for the financial industry*
- *Dangers and warning signs*

Why did boom/bust get so out of control this time?

- Hard to believe the world has become more greedy or more short sighted
- The China/US current account and exchange rate imbalance has caused big problems
- In the past, lax monetary policy has not threatened the global banking system
- Additional factors have been at work

Leverage has made boom/bust more dangerous



Archimedes: “Give me a place to stand and I will move the earth.”

Archimedes was right and leverage shook the world

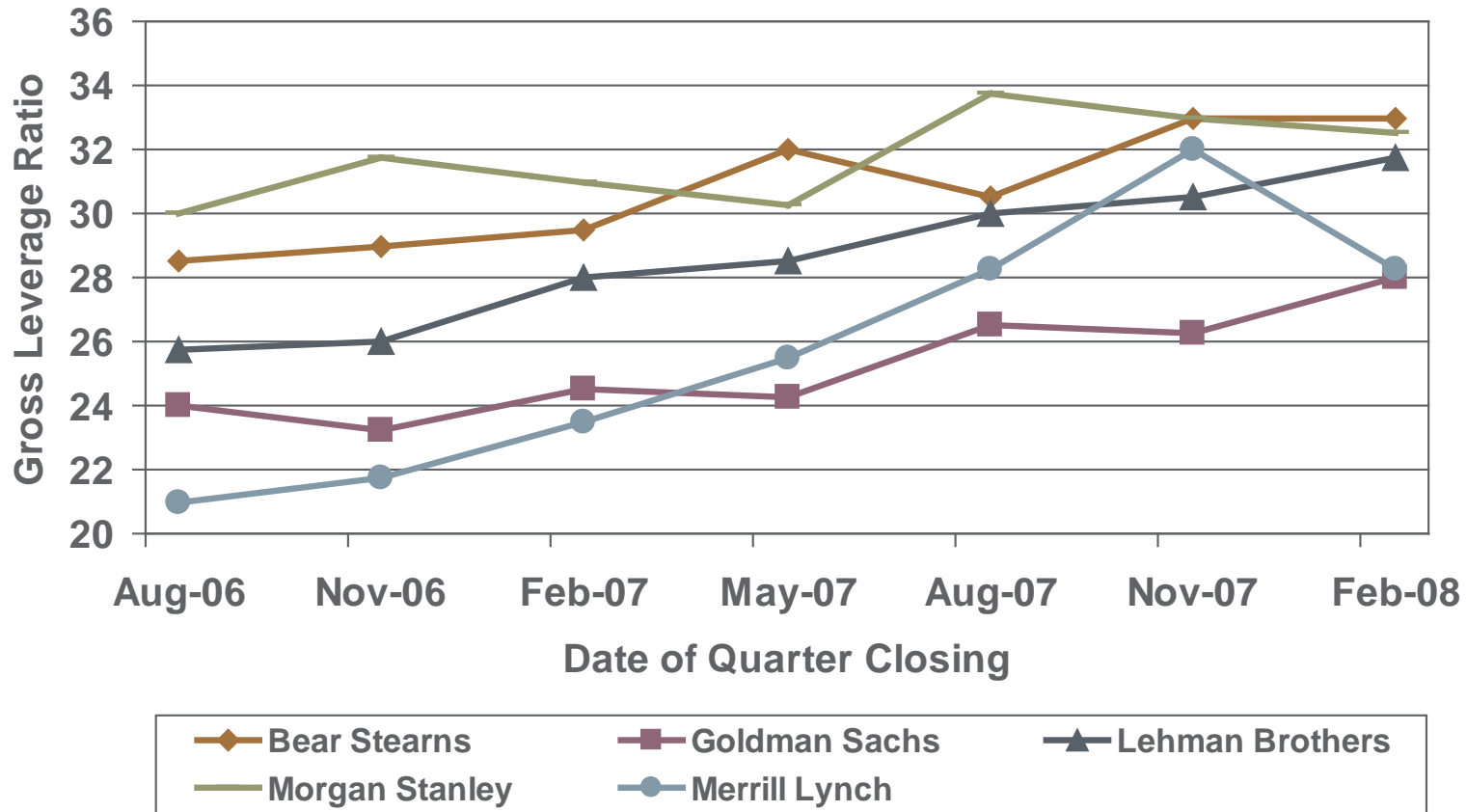
Source:

<http://www.healthphysicpersonnel.com/images/Lever.GIVE%20ME%20A%20PLACE%20TO%20STAND%20AND%20I%20WILL%20MOVE%20THE%20EARTH.jpg>

Leverage at US investment banks was very high

- Bear Stearns had a leverage ratio of 33 (ratio of assets to capital)

Gross Leverage Ratio: August 2006 – February 2008



Source: US Securities and Exchange Commission, Office of Inspector General, Office of Audits. SEC's Oversight of Bear Stearns and Related Entities: The Consolidated Supervised Entity Program. Sections of this report have been redacted to delete information that SEC believes is nonpublic and confidential September 25, 2008 Report No. 446-A. This [chart] data was provided by [SEC]. They obtained the information from public filings (i.e., 10-K) and Bloomberg. [SEC] verified each firm's year-end gross leverage ratio amount, but did not verify its quarterly ratios.

The growth in leverage was not an accident

- It was very much a phenomenon of the developed world
- A static regulatory structure was not finally overwhelmed
- Change has been afoot; we have been living through a major experiment
- Who should be held to account?

“Greenspan concedes error on regulation”

- *“Those of us who have looked to the self-interest of lending institutions to protect shareholders’ equity, myself included, are in a state of shocked disbelief”*
- *“Yes, I’ve found a flaw. I don’t know how significant or permanent it is. But I’ve been very distressed by that fact.”*

But it is unfair to single out Greenspan

The problems in the US are well known

- The repeal of Glass Steagall (1999), left a major regulatory gap
- The SEC tried to fill the gap with a voluntary program (2004)
- The 5 institutions covered by the program have disappeared or converted to banks
 1. *Bear Stearns*
 2. *Goldman Sachs*
 3. *Lehman Brothers*
 4. *Morgan Stanley*
 5. *Merrill Lynch*
- AIG was running a hedge fund outside effective regulation
- A range of over levered and undercapitalised banks failed

But the problem extends beyond the US

- Not just US financial institutions that were over levered
- There have been major banking failures in the UK and Europe
- The root problem has been that US and European banks were undercapitalised

The Basel II framework drives regulation in Europe

- The framework dates from 2004 and took a long time to formulate
- Basel II assumes that risk can be modelled and bank capital should be directly linked to a bank's risk; Value at Risk (VaR) appeared to be the answer
- The Basel II framework is intellectually satisfying but is now seen as badly flawed

The Basel II concerns

- Banks are highly regulated; why have so many failed?
- There are clear gaps in the existing capital rules
- The rules are pro-cyclical
- Too much trust was put in rating agencies
- VaR can be dangerous

Mean & variance can be deadly – an example

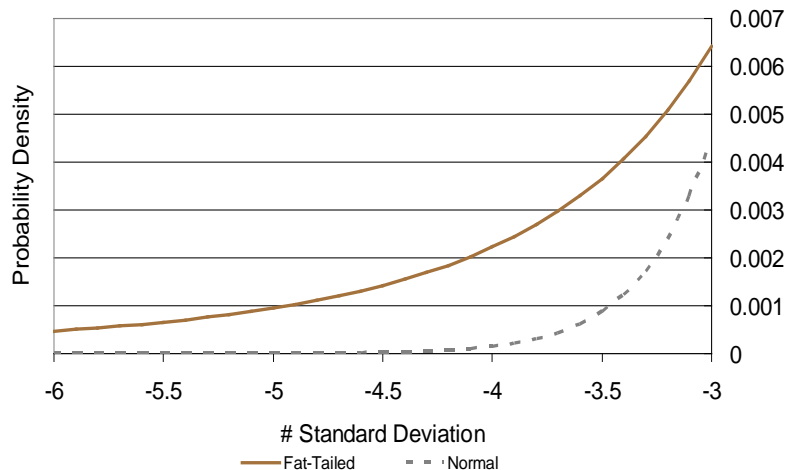
Merton (1974) extended derivatives pricing theory to credit risky assets

The problem is that Merton, like Black–Scholes, assumes a lognormal diffusion process

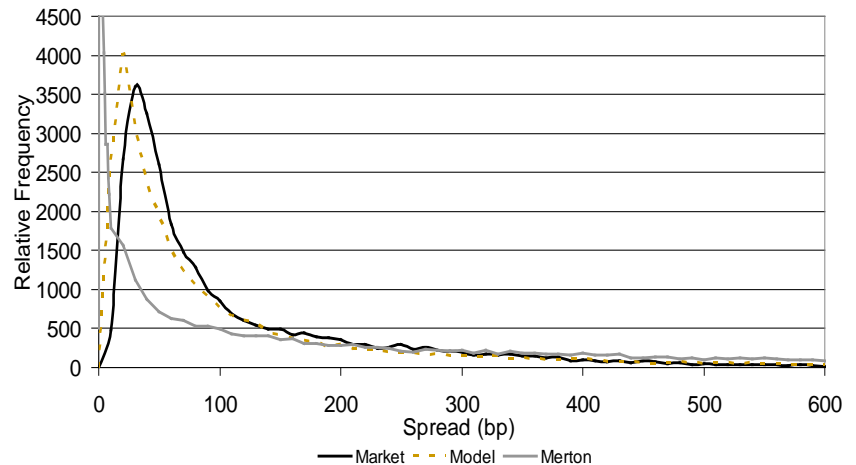
Merton's original model produces too many low spreads; credit is not normally distributed

In a fat tailed world – the normal distribution means too much risk for little gain

Fat Tailed vs Normal Distributions



CDS Spread Distributions

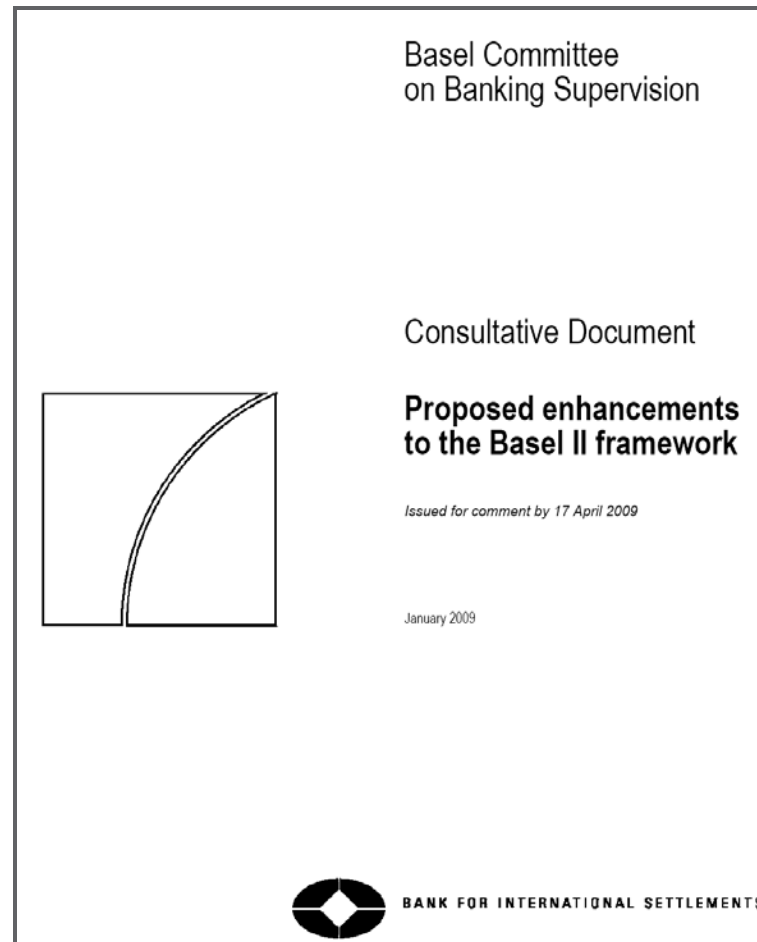


Source: Mellon Capital Management, *Quantitative Credit Modelling: The Next Generation 2008*
Merton (1974) Merton, Robert C., "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates", *Journal of Finance*, Vol. 29, No. 2, (May 1974), pp. 449-470.

The simple arithmetic of the crisis

A L		A L
99 96		99 93
3	Capital	6
99 99		99 99
33	Leverage	16.5
3%	Spread	3%
100%	Return	50%
	<i>5% loss</i>	
94 96		94 93
-2		1
94 94		94 94
standard deviation = 1%		
99.9% chance max loss (normal dist, 3 sd event) = 3		
chance of a 5 sd loss with normal distribution = 0.00003%		
chance of a 5 sd loss with fat tail distribution = 0.2%		

Reform is underway as a matter of urgency



Source: BIS Basel Committee on Banking Supervision: January 2009

Basel II will be modified

Pillar 1: Minimum capital requirements

- Higher risk weights to resecuritisation exposures in the trading book (no more regulatory arbitrage)
- Ratings based on self guarantees no longer will be permitted
- Banks will have to perform their own credit analysis
- An Incremental Risk Charge (IRC) to cover credit migration and widening spreads in the trading book (most losses have come from the trading book and not the lending book)

Pillar 2: Supervisory review

- There will be a new stressed VaR measure

Pillar 3: Market disciplines

- Banks should be responsible for conveying their actual risk profile

Australian banks are better placed than most

- Basel II has turned out to be flawed; we only implemented from 1 Jan 08
- Basel II will lead to a “modest decline in [ADIs] regulatory capital”*; this was delayed in Australia until after the boom
- “Four pillars” reduced the incentive for foolish defensive competition
- Australia did not undermine the regulators; we did not embrace “light touch”

* APRA Regulation Impact Statement: Adoption of the Basel II capital framework in Australia November 2007 page 10

There are issues to do with banking regulation

- We have recently embraced a regulatory framework that is flawed
- Reform is underway but we need to be nimble
- Ahead of the G20 London leaders meeting, the Basel Committee on Banking Supervision invited key G20 countries (including Australia) to join*
- The G20 has set up the Financial Stability Board (FSB) on an institutional basis

* APRA Media release, APRA joins global banking group, 16 March 2009

There are issues to do with the bank guarantee

- The bank guarantee was and remains the right thing to do
- It was important to err on the side of over provision
- Over time the negatives will compound; regulators need a “scale back” strategy

Australia's credit rating is important

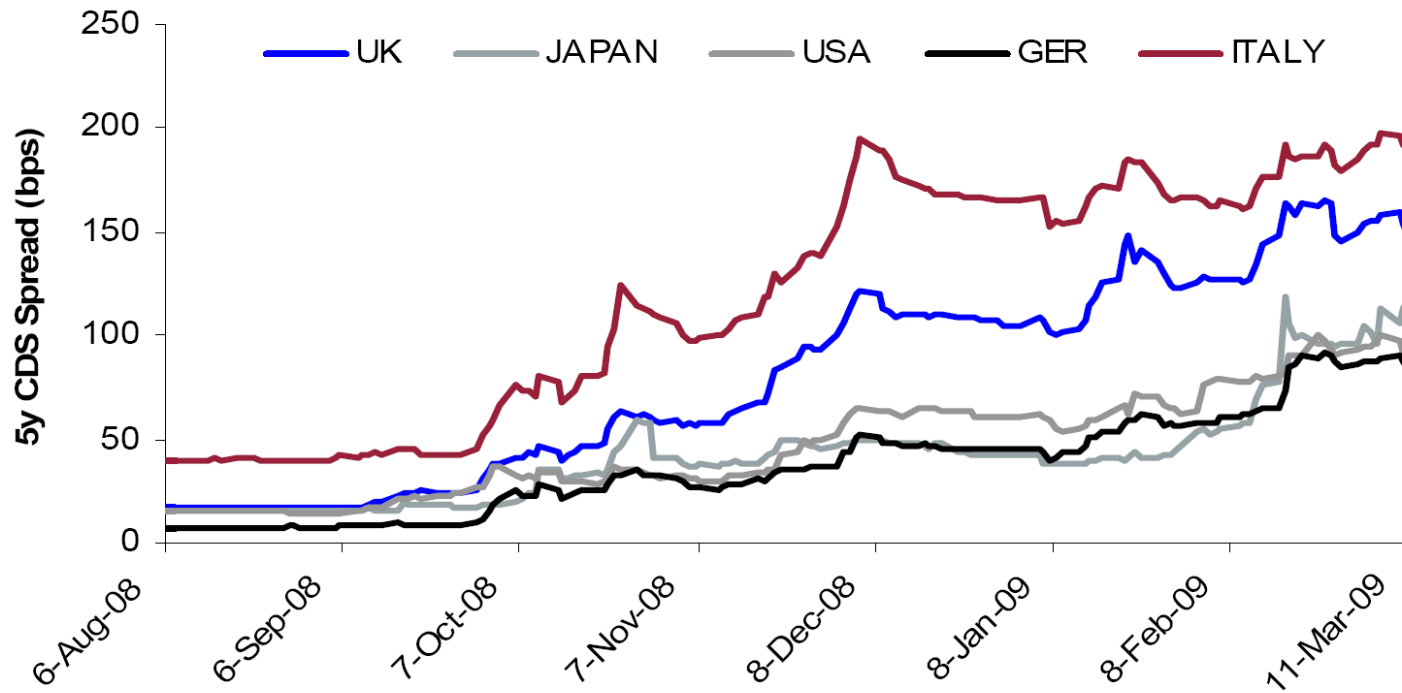
- All ADIs can access Australia's credit rating
- As time goes by, the guarantee will allow favoured institutions to earn super normal returns with the Commonwealth carrying much of the risk
- Institutions will be tempted to game the system
- This would not be a healthy situation

Sovereign risk is becoming a focus

- This will intensify if less credit worthy countries start to default

G7 Sovereign CDS Continue to Price in Increasing Likelihood of Default/Restructuring

5-Year Sovereign CDS Spreads.



Source: Banc of America Securities – Merrill Lynch: Suspended Disbelief, 12 March 2009, Markit

Aus Gov bonds do not reflect the guarantee*

- Sovereign Credit Default Swaps (CDS) for Australia are priced differently

Selected Benchmark Government Guaranteed Issues

Last two Columns Show Spreads to US Swap/Treasury yield on a Sovereign Risk Hedged Basis - That is, After Subtracting Corresponding Sovereign CDS Spreads.

Country	Sovereign CDS Spread (3Y)	Issuer	Issue Term (yrs)	Issue Size (\$mm)	Current Pricing (bps/swap)	Current Pricing (bps//UST)	Spread After Hedging Country Risk (bps/swap)	Spread After Hedging Country Risk (bps/UST)
Australia	166	ANZ	3	1,900	76	132	-90	-34
	166	Commonwealth Bank	3	2,500	75	131	-91	-35
	166	Macquarie	3	2,500	104	160	-62	-6
	166	National Australia Bank	3	2,500	74	130	-92	-36
	166	Westpac	3	3,000	76	132	-90	-34

Source: Banc of America Securities – Merrill Lynch: Suspended Disbelief, 12 March 2009

* Source: ABN AMRO, Australian Economics Weekly, Debt, international influences and the yield curve 28 February 2009

Summary

- The world economy is in sharp decline
- Markets are positive about China and expect world recovery in 2010 – if this is delayed there will be a reaction
- The great experiment in banking regulation pushed the global financial system to the edge of collapse
- Delaying the adoption of Basel II and the four pillars helped Australia avoid much of the problem; we now need to modify Basel II wisely
- With world growth expected to recover Australia appears well placed; but the outlook remains very uncertain and the future may turn out far worse than expected

Important Information

The views expressed here are the personal views of Don Russell and do not necessarily reflect those of State Super or the State Government of NSW.

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