Financial Crisis

Origins and Consequences on Financial Institutions Focusing on Insurance Companies (Session 1)

Solvay Business School – VUB

Fabian Suarez – April 2009

www.actuarisk.be

ActuaRisk

Agenda

1. Macroeconomic View: The US Economy
2. US Mortgages and Credit Derivatives Products
3. Impact of the Crisis on Financial Institutions
4. Conclusion

1. Macroeconomic View: The US Economy

Macroeconomic View

The National Income Accounts Identity

- GDP's goal is to summarise in a single number the value of economic activity in a period of time:

$$\underbrace{Y}_{\text{Economy's output (GDP)}} = \underbrace{C^d + I^d + G^d}_{\text{Domestic spending on domestic goods and services}} + \underbrace{EX}_{\text{Foreign spending on domestic goods and services}}$$

C^d: consumption of domestic goods and services
I^d: investment in domestic goods and services
G^d: government purchase of domestic goods and services
EX: exports of domestic goods and services

- In terms of total consumption, total investment and total government purchases, this identity becomes:

$$Y = C + I + G + NX$$

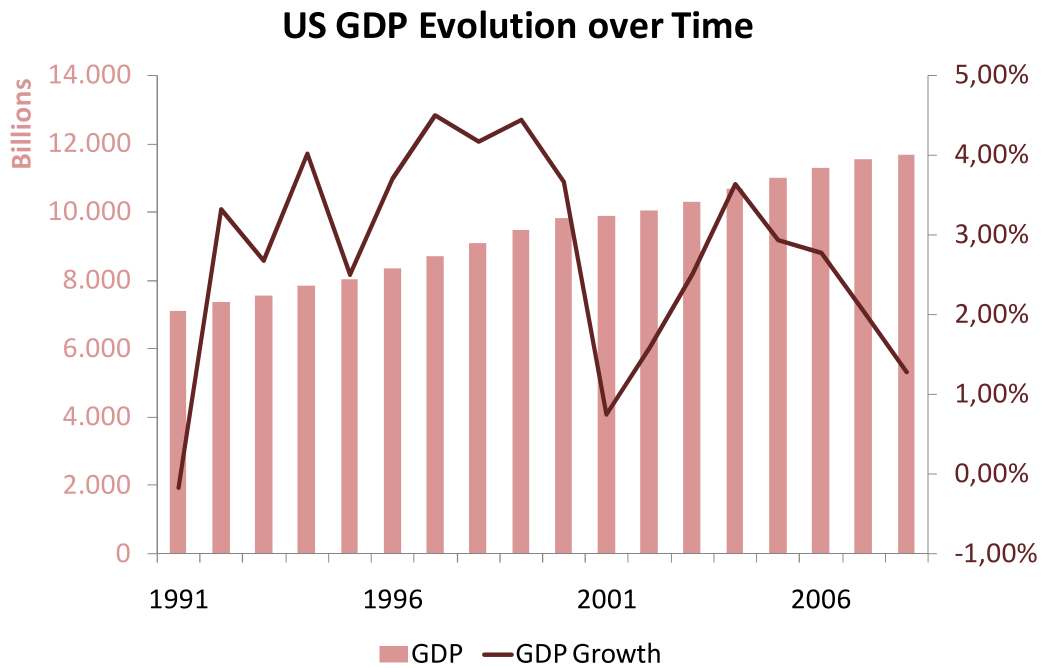
  - NX is the net exports (exports – imports) which is also called the trade balance.

$$\Rightarrow \underbrace{(Y - C - G)}_{\text{National saving}} - I = NX$$

Macroeconomic View

US GDP

- Was the US economy performing well?



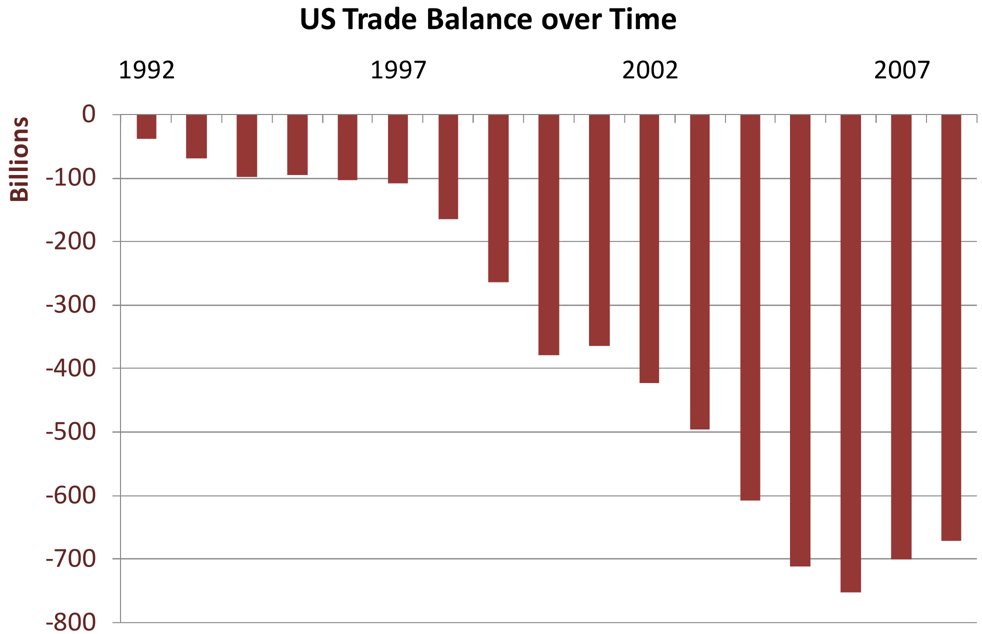
Source: US Department of Commerce – GDP in chained (2000) dollars

- On most dimensions the US economy appears to be performing well. Output growth has returned to healthy levels, the labour market is firming, and inflation appears to be well controlled. But...

Macroeconomic View

US Trade Balance

- US trade balance* in dollars:



Source: US Department of Commerce

- US investment exceeds US saving. Corresponding to that deficit, US citizens, businesses, and governments on net had to raise billions on international capital markets.

** For the sake of simplicity, we ignore the differences between the trade balance and the current account!*

Macroeconomic View

Consequences of US Trade Deficit

In 2005, Ben Bernanke concluded a lecture as follows:

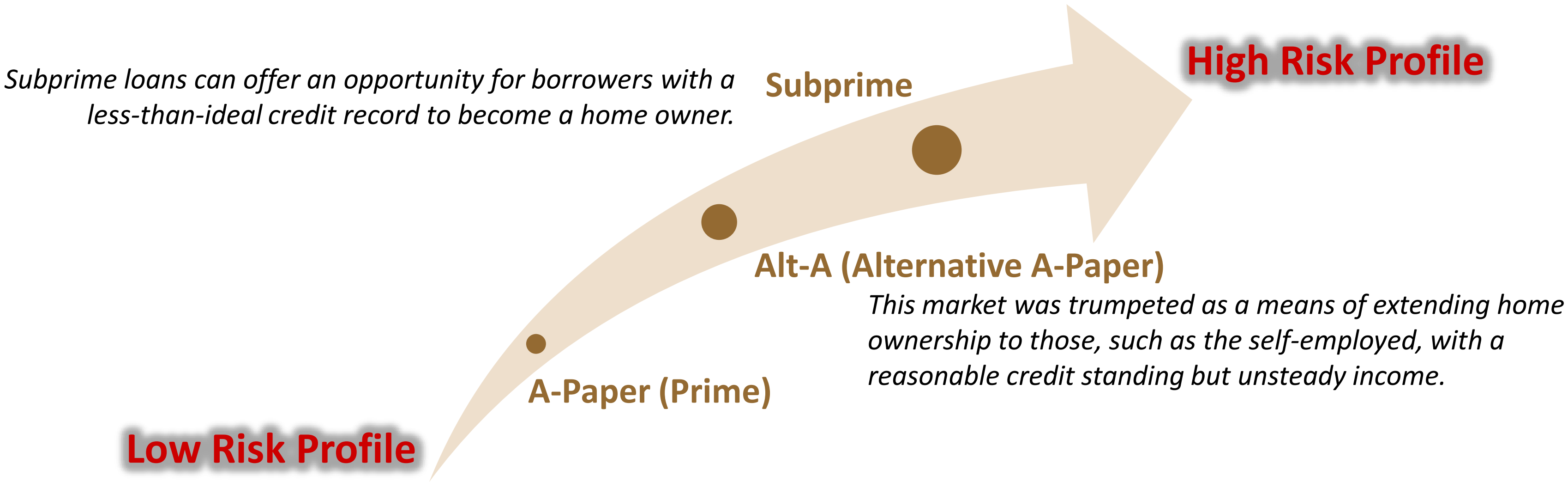
- Because investment by businesses in equipment and structures has been relatively low in recent years and because the tax and financial systems in the US are designed to promote homeownership, much of the capital inflow has shown up in higher rates of home construction and higher home prices.
- Higher home prices in turn have encouraged households to increase their consumption.
- The greater the extent to which capital inflows act to augment residential construction and especially current consumption spending, the greater the future economic burden of repaying the foreign debt is likely to be.

Source: http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/

2. US Mortgages and Credit Derivative Products

The US Mortgage Industry

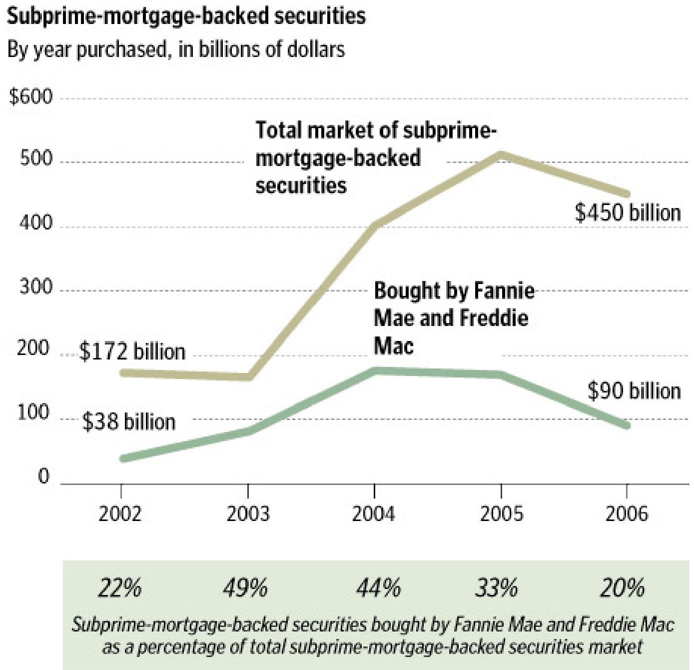
- Within the US mortgage industry, different mortgage products are generally defined by how they differ from the types of "conforming" or "agency" mortgages, ones guaranteed by the Government-Sponsored Enterprises (GSEs) Fannie Mae and Freddie Mac:



GSEs' Lending Policy

- FannieMae Freddie Mac GSEs extend credits to prime borrowers, therefore, they should not be affected by the subprime crisis.
  But … (Video source: www.economist.com)
- US administrations (since the Clinton one) have changed the rules of the game…

Instruments generated by SECURITISATION

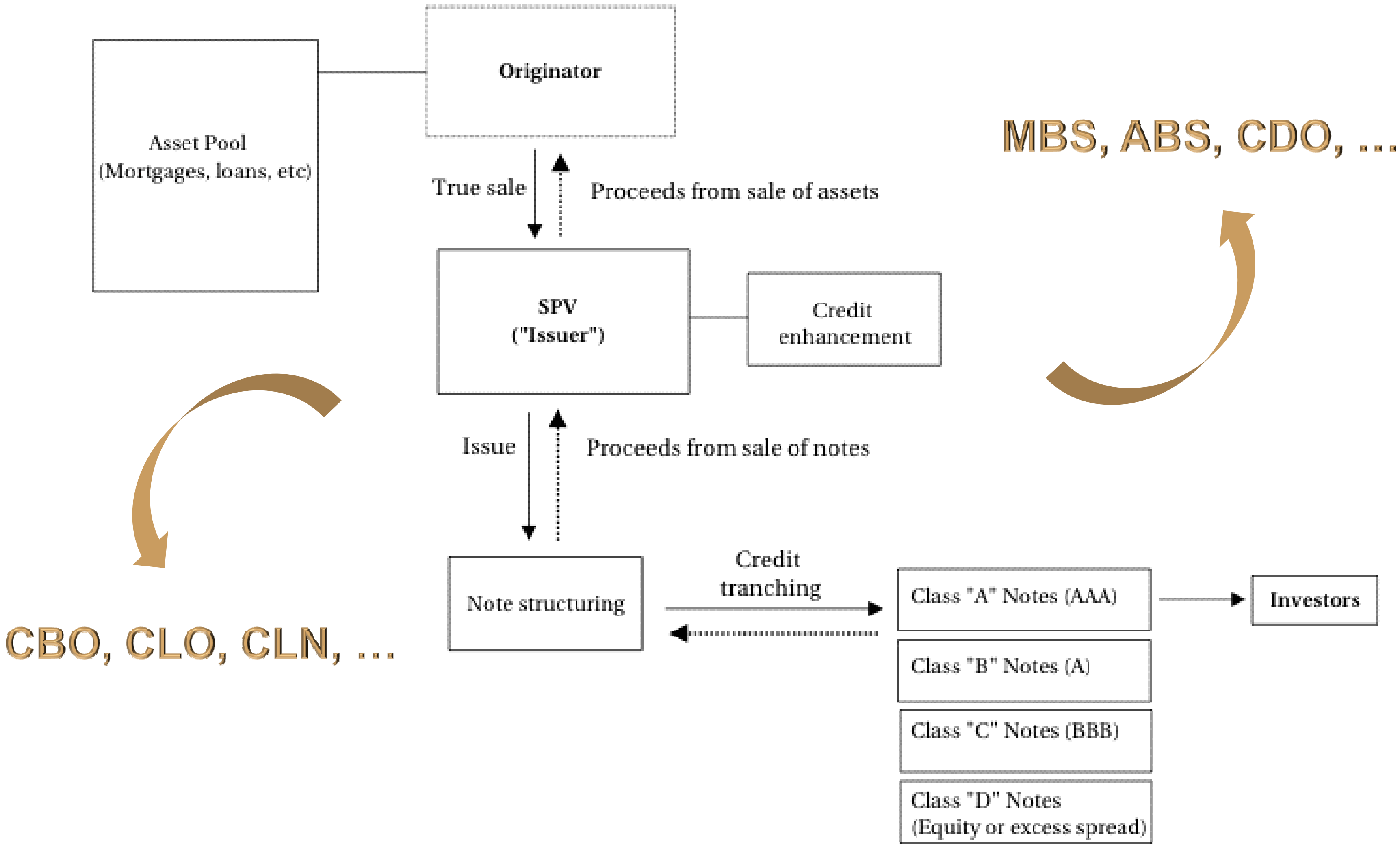


Source: The Washington Post, June 10th 2006

What is Securitisation?

- Securitisation is a well-established practice in the global debt capital markets. It refers to the sale of assets, which generate cashflows, from the institution that owns them, to another company that has been specifically set up for the purpose, and the issuing of notes by this second company.
- These notes are backed by the cashflows from the original assets.
- Securitisation allows institutions such as banks and corporates to convert assets that are not readily marketable, such as residential mortgages or car loans, into rated securities that are tradeable in the secondary market.

Securitisation Process



Source: Choudhry M., Corporate Bonds and Structured Financial Products, Jordan Hill, 2004, p 301

Benefits of Securitisation

- The main reasons that a bank will securitise part of its balance sheet is for one or all of the following reasons:
  - funding the assets it owns;
  - balance sheet capital management;
  - risk management and credit risk transfer.
- Investor interest in the ABS market has been considerable from the market's inception. This is because investors perceive asset-backed securities as possessing a number of benefits. Investors can:
  - diversify sectors of interest;
  - access different (and sometimes superior) risk-reward profiles;
  - access sectors that are otherwise not open to them.

Dangers of Securitisation

Two charges are levelled against the technique:

- The first is that it fails to disperse risk effectively; in bad times, the risks flow back to the banks as toxic assets in their balance-sheets:
  - In 2008, Citigroup and HSBC between them consolidated assets worth $94 Bio that had been sitting in structured investment vehicles (SIVs).
  - Some argue that the events of the past few months, far from exposing securitisation as a failure, showed that it did not go far enough. If loans had really been sold off to investors, banks would not have been sucked so deeply into the mess.
- The second charge is that securitisation degrades credit quality by weakening lenders' incentives to monitor the quality of the loans they write.

→ **What is behind the subprime crisis?**

Macroeconomic View | US Mortgage Industry

The Subprime Primer (1/7)

The Subprime Primer: a simple and humorous guide to understand the subprime mess…

Source: http://www.farmandcountryfinance.co.uk/sub-primemortgages.pdf

At the Mortgage Broker's .....

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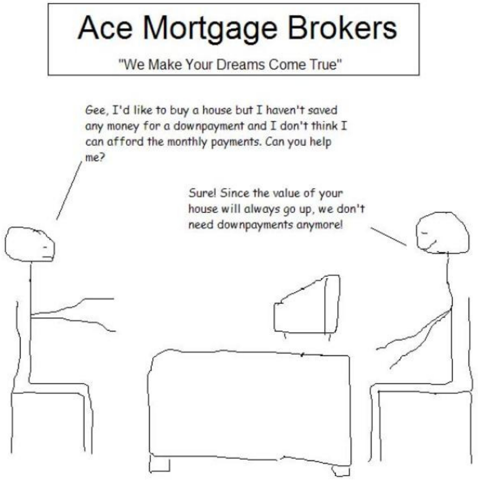

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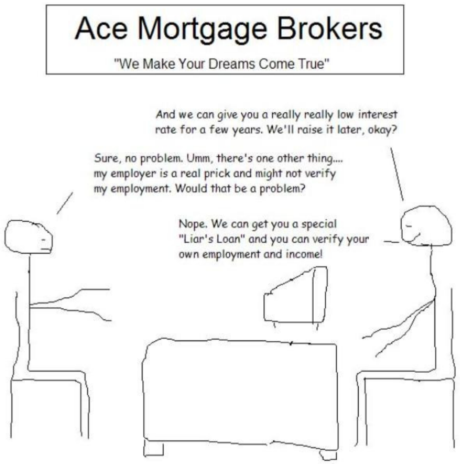

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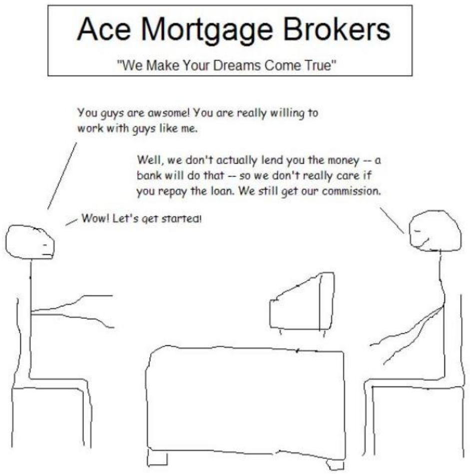

The Subprime Primer (2/7)

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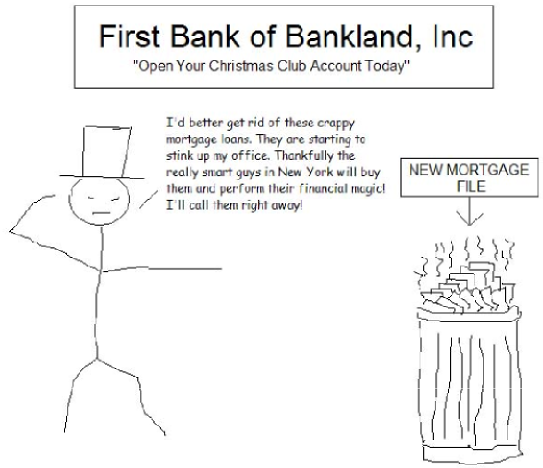
A Few Weeks Later, at the Bank ....



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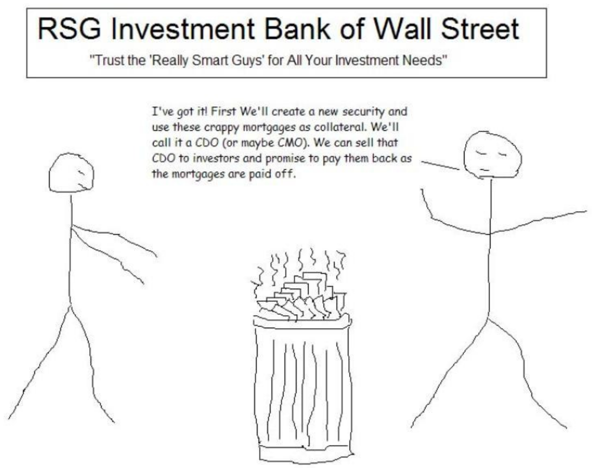
Let's See What the Smart Guys Are Doing...



Macroeconomic View › US Mortgage Industry

The Subprime Primer (3/7)

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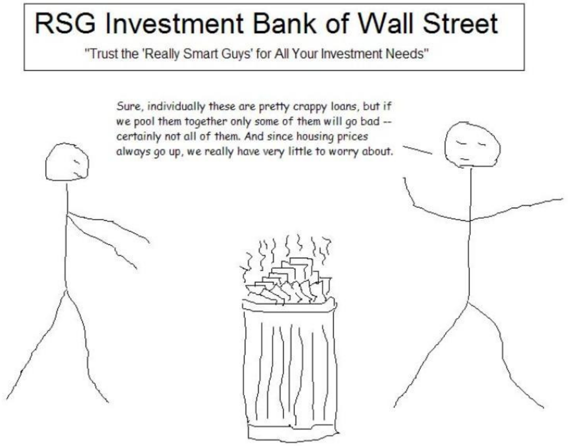

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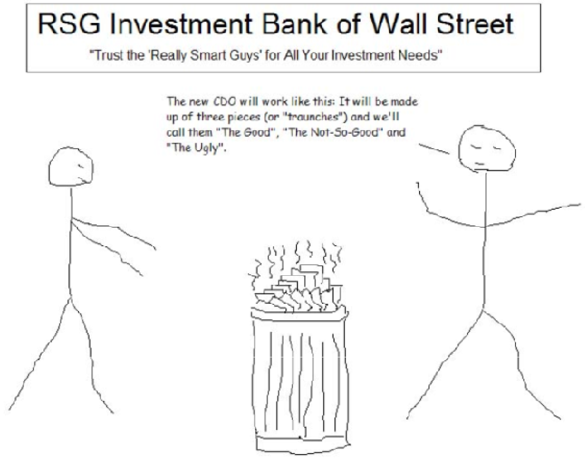

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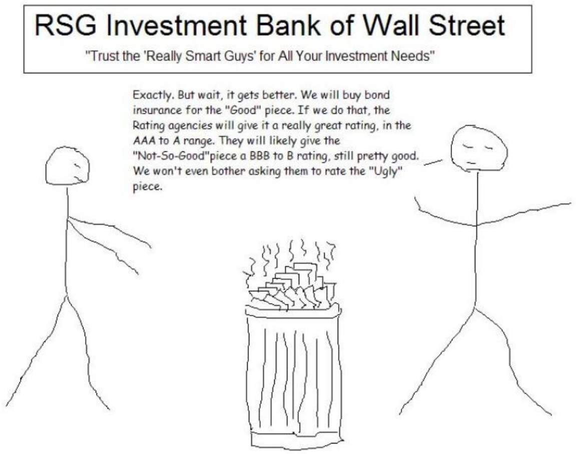

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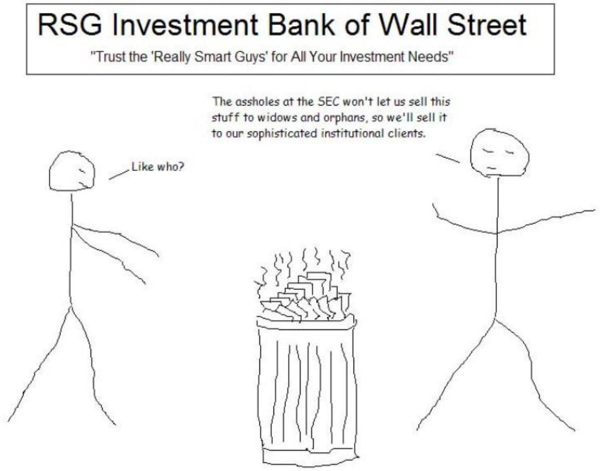

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The Subprime Primer (4/7)

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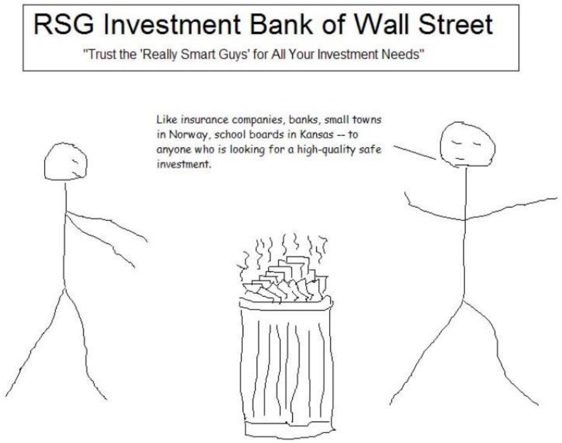

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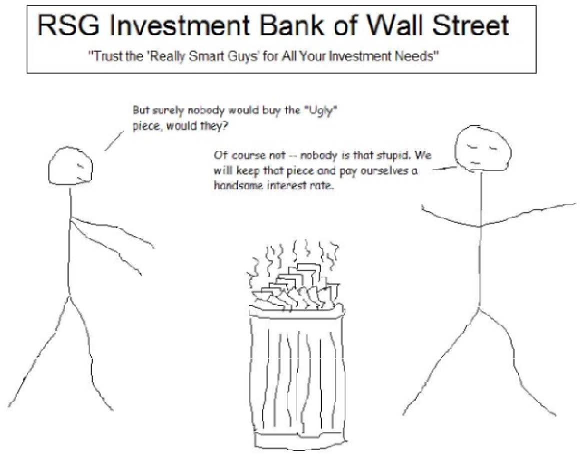

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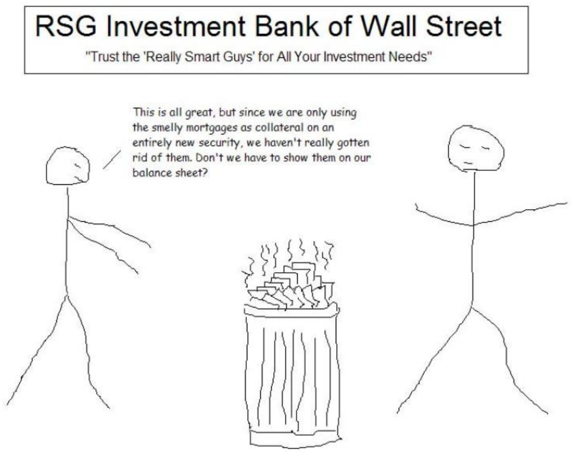

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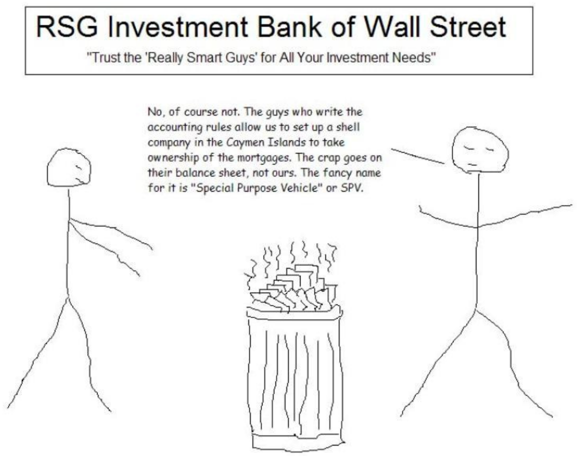

Macroeconomic View | US Mortgage Industry

The Subprime Primer (5/7)

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Gee, We Never Saw it Coming......

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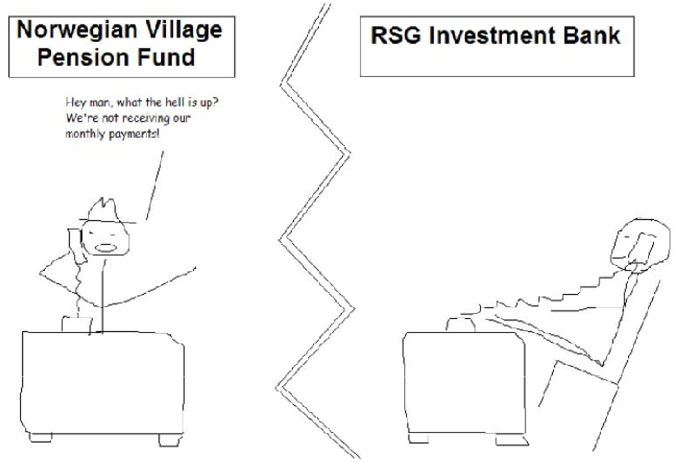

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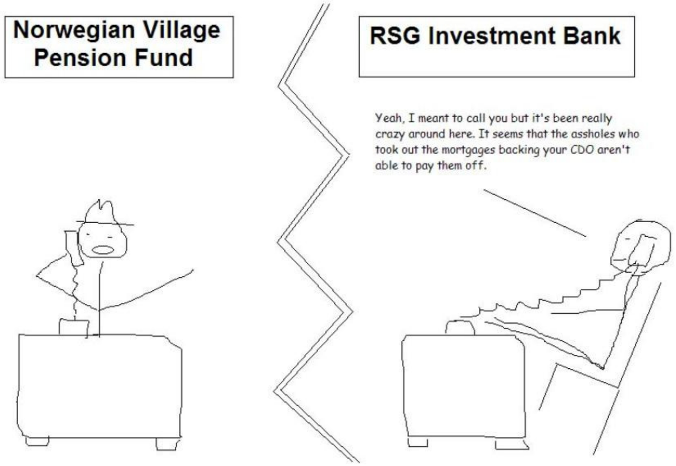

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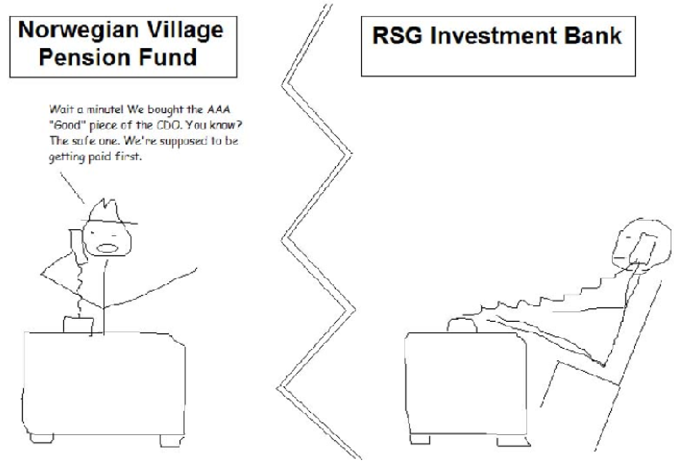

The Subprime Primer (6/7)

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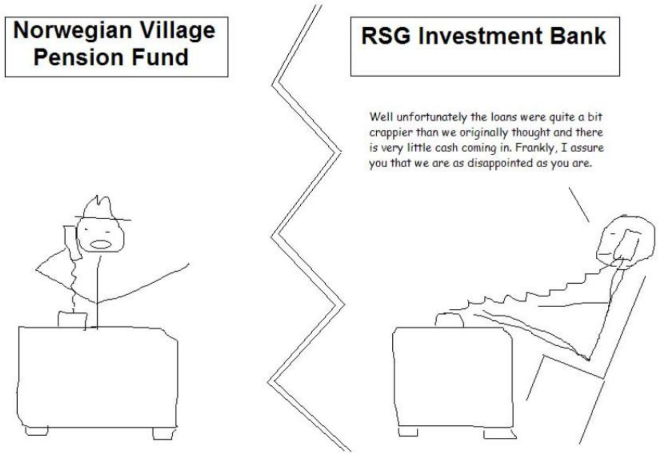

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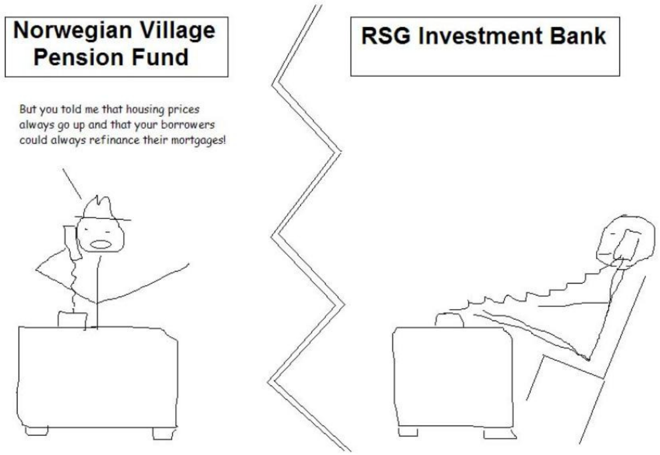

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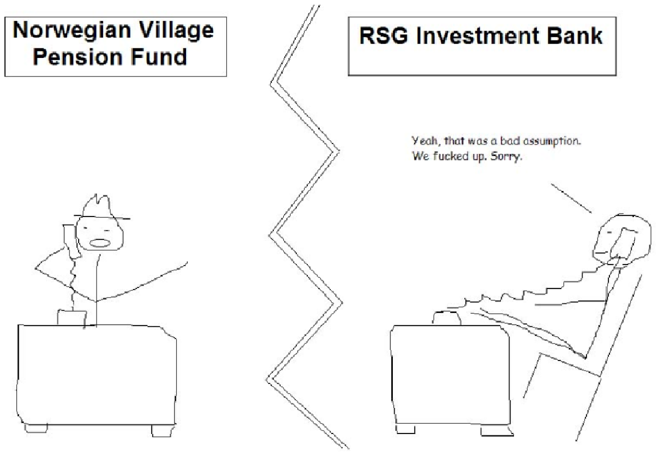

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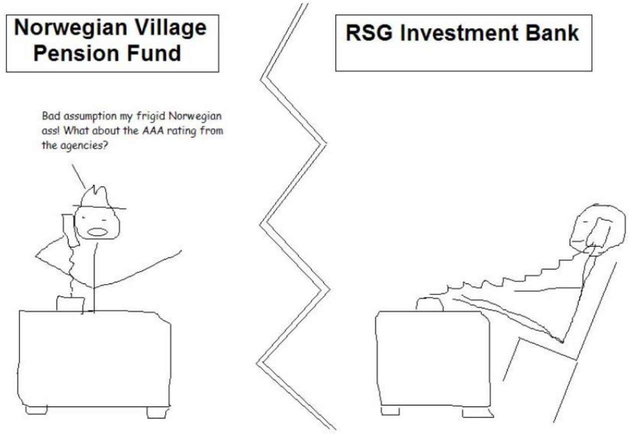

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The Subprime Primer (7/7)

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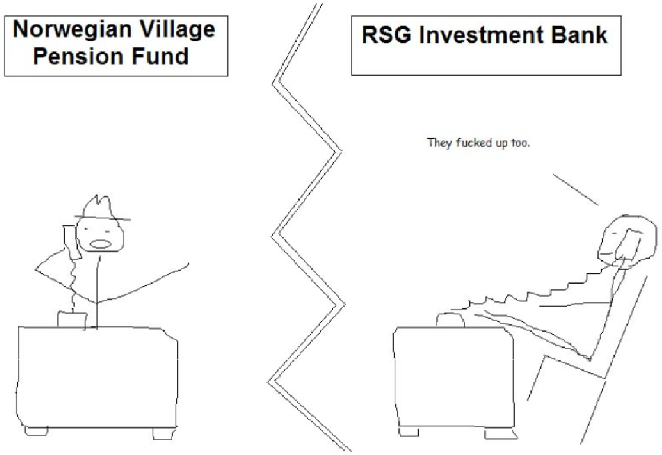

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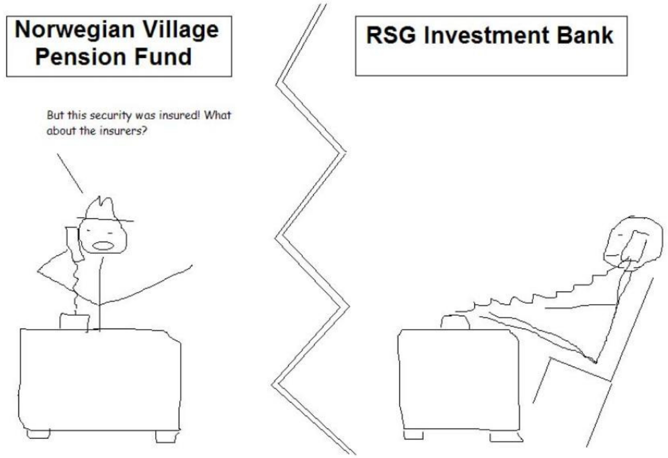

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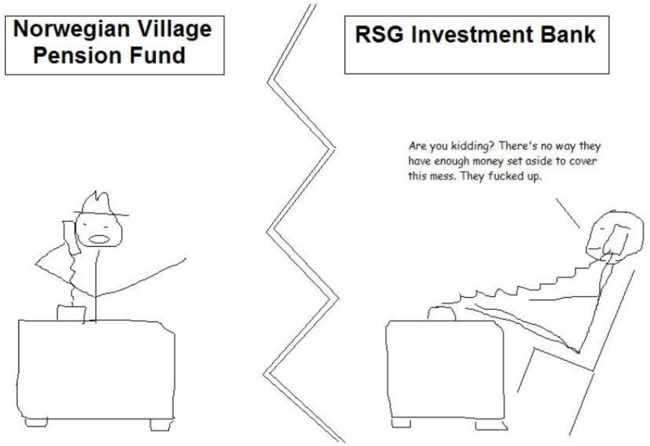

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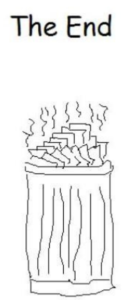
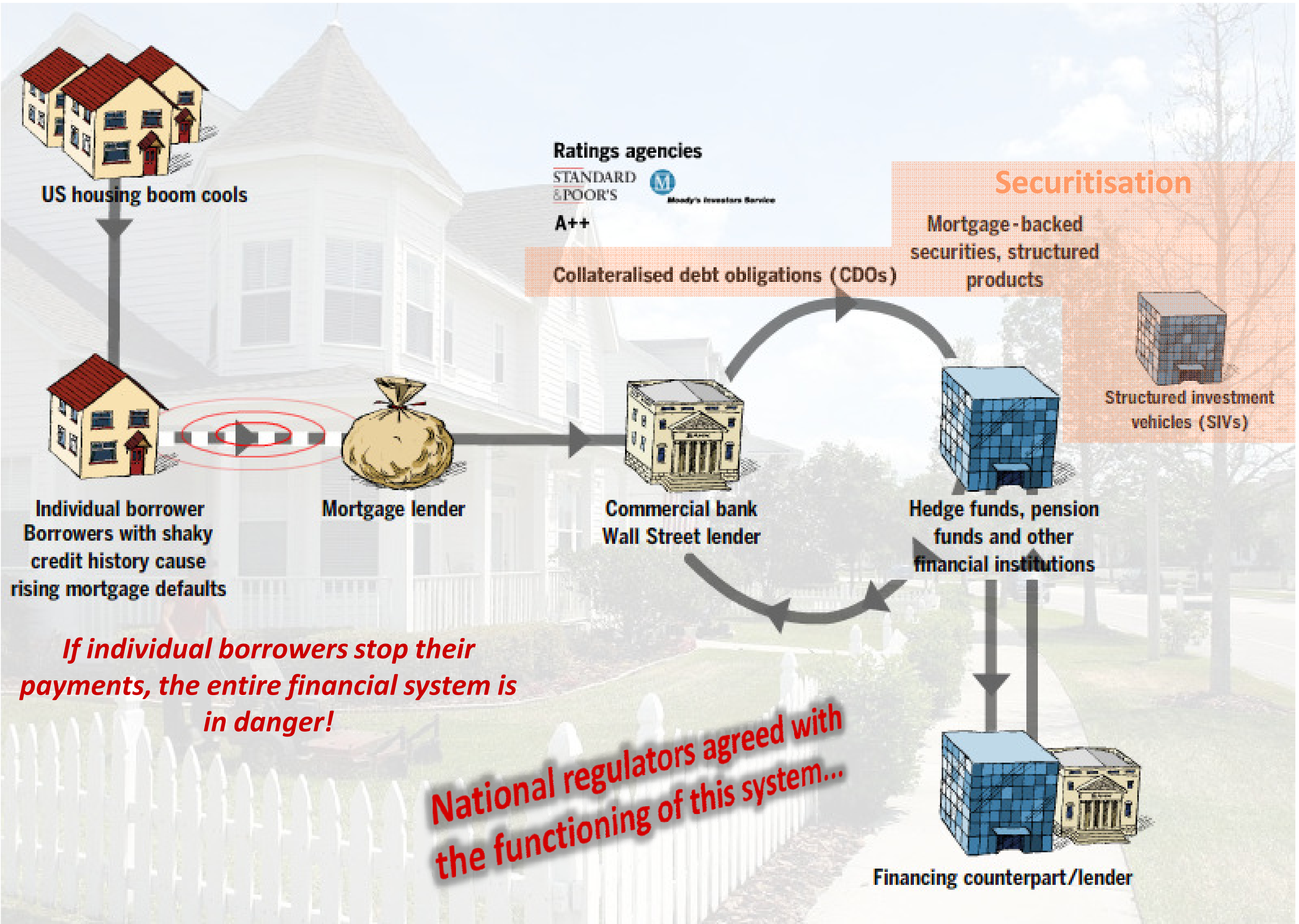


Explanation of the FT about the credit squeeze

Video source: media.ft.com

Contagious Effect of the Subprime Model



3. Impact of the Crisis on Financial Institutions

2008: Distrust Year for Banks

	Countrywide (VS)	Northern Rock (VK)	Sachsen LB (Dui)	Bear Stearns (VS)	Alliance & Leicester (VK)	Dresdner Bank (Dui)
lot	Overgenomen	Genationaliseerd	Overgenomen	Overgenomen	Overgenomen	Overgenomen
balanstotaal in miljoen dollar, op 31/12/2007	211.730	217.154	98.988	395.362	156.833	730.305
waardeverminderingen in miljard dollar	-	-	-	3,2	1,1	4,5
vers kapitaal in miljard dollar	-	-	-	0	0	0
jobverlies	-	-	-	9.159	0	-
beurskoers van 1 januari tot midden december 2008	**-53%** (tot 30 juni)	**+6,8%** (tot 15 februari)	-	**-89%** (tot 30 mei)	**-69%** (tot 10 oktober)	-

Solvency?

	Fannie Mae (VS)	Freddie Mac (VS)	Lehman Brothers (VS)	Merrill Lynch (VS)	AIG (VS)
	Gered door overheid	Gered door overheid	Failliet	Overgenomen	Gered door overheid
	882.547	794.368	691.063	1.020.050	1.060.505
	56	58,4	13,8	55,9	60,9
	15,6	7	13,9	29,9	64,9
	-	-	13.390	5.720	980
	-98%	**-98%**	**-99%**	**-76%**	**-97%**

	HBOS (VK)	Washington Mutual (VS)	Bradford & Bingley (VK)	Fortis (B/NL)	Royal Bank of Scotland (VK)	Kaupthing (IJs)
lot	Overgenomen	Failliet	Overgenomen	Ontmanteld	Gered door overheid	Genationaliseerd
balanstotaal in miljoen dollar, op 31/12/2007	1.324.819	327.913	103.260	1.271.921	3.775.180	85.193
waardeverminderingen in miljard dollar	9,2	45,6	-	3,2	15,1	-
vers kapitaal in miljard dollar	22,9	30,1	-	2	48,5	-
jobverlies	615	4.200	-	-	10.200	-
beurskoers van 1 januari tot midden december 2008	**-88%**	**-99%**	**-93%** (tot 26 september)	**-95%**	**-82%**	**-23%** (tot 3 oktober)

Liquidity?

	Landsbanki (IJs)	Glitnir (IJs)	Wachovia (VS)	Dexia (B/F)	UBS (Zwi)	Citigroup (VS)
	Genationaliseerd	Genationaliseerd	Overgenomen	Gered door overheid	Gered door overheid	Gered door overheid
	48.712	46.981	782.896	882.663	2.011.131	2.187.631
	-	-	96,5	1,2	48,6	65,7
	-	-	11	8	30,1	74
	-	-	8.393	-	9.000	75.000
	-41% (tot 3 oktober)	**-82%** (tot 3 oktober)	**-86%**	**-81%**	**-65%**	**-74%**

Source: De Tijd, Dit was 2008, p 14-17

Solvency vs. Liquidity

Solvency

- Capital which protect a financial institution against economic insolvency.
- A business is considered to be economically insolvent if the market value of its liabilities exceeds the market value of assets (negative equity).

Liquidity

- Liquidity for a bank means the ability to meet its financial obligations as they come due.
- Example: Analysis of the balance sheet of a financial institution

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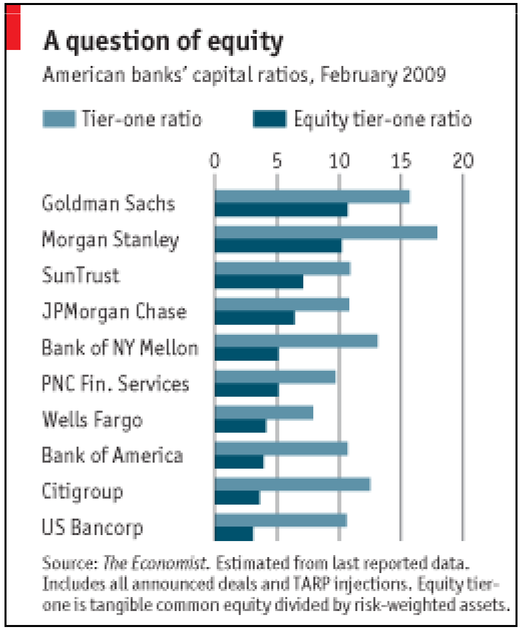
Solvency of Banks

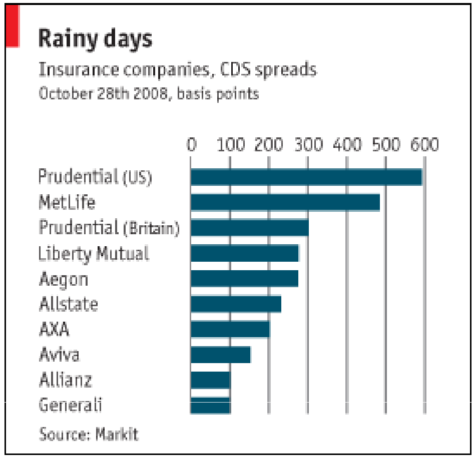
- Under Basel rules, Tier 1 is defined as:
  - The Committee considers that the key element of capital on which the main emphasis should be placed is equity capital and disclosed reserves.
  - Tier 1 capital ratio = Tier 1 capital / Risk-adjusted assets ≥ 6%



Source: The Economist, Feb 26th 2009

Solvency of Insurers

Source: The Economist, Oct 30th 2008



- Insurers shares have sunk on worries that losses on their investments will leave them insolvent. Regulators and executives have tried to reassure investors, but been met with dark mutterings about insurers' reluctance to mark assets fully to market and their habit of inflating their capital with hybrid debt rather than plain equity.

- Are insurers really the new banks?
  - Like lenders, insurers' assets include shares and securities that have tumbled in value. But on the other side of the balance-sheet the comparison becomes laboured. Unlike banks, which rely heavily on debt funding, insurers' main liabilities are the claims they will pay their customers – for life firms these stretch over many years. Whereas the depositors and lenders who provide funds to banks can jump ship overnight, insurance customers find it hard and expensive to wriggle out of their contracts.

Turmoil in the Insurance Industry

- By December 31st 2008, only AIG needed a bailout.
- Since beginning 2009:

Swiss Re

Swiss Re on Thursday turned to Warren Buffett, the legendary US investor, for SFr3bn ($2.6bn) in fresh funding and cut its dividend to virtually nothing as it struggled to retain its investment-grade credit rating.

Source: Financial Times, Feb 5th 2009

Will other insurers follow the path of these two big giants?

AXA FINANCIAL PROTECTION

Axa managed only partly to address concerns about the adequacy of its capital base in its annual results presentation last week, saying, disarmingly, that it might raise €2bn of preference shares as an "insurance policy". It also cut its dividend by two-thirds for 2008, signalling that cash was tight. That was only prudent after €2.8bn of mostly equity-related writedowns triggered an 83 percent plunge in full year net profit.

Source: Financial Times, Feb 24th 2009

4. Conclusion

Conclusion

John Reed, a journalist, wrote in the Financial Times:

It is relatively easy to list behaviour that contributed to the financial "mess": greed, misaligned incentives, analytic failures, a tolerance for customer abuse and so forth. It is also easy to list the players: bankers, investors, rating agencies, accountants, regulators, boards, etc. I would also say the responsibility for all of this rests with "the industry", not externalities such as deregulation (there was not any that was relevant) or easy money (a banking system surely should be able to function over normal cycles) or the government.

Source: Financial Times, Oct 21st 2008