A lesson from the financial crisis for business management

Clinton Watkins

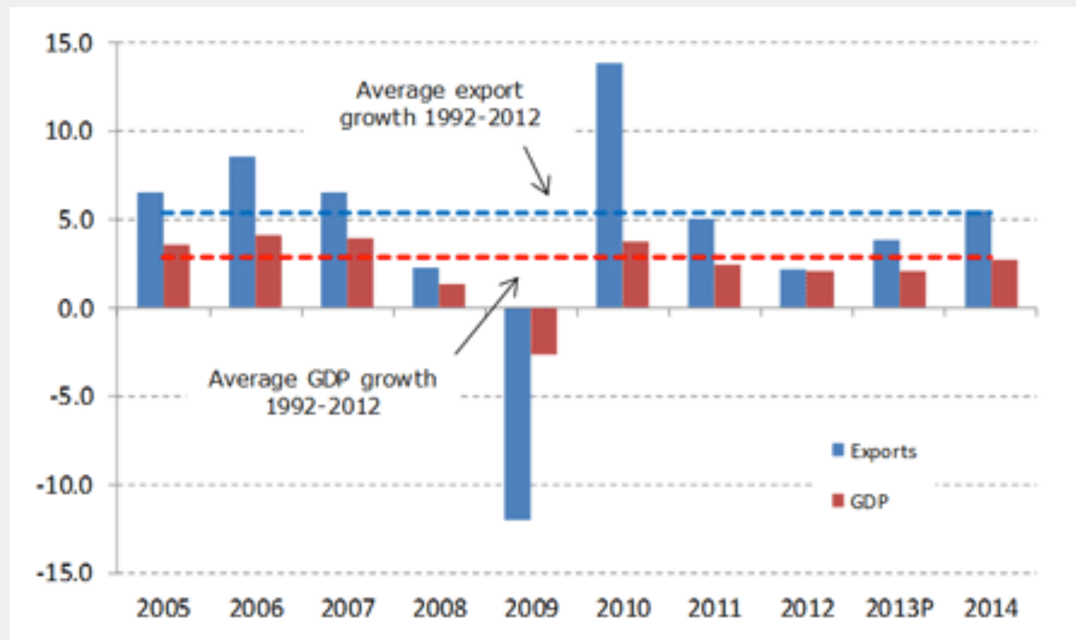
A simple main point for this afternoon's talk:

The global economy is far more interlinked than we thought.

This sounds like a concept that economists, business people and policy makers should have understood pre-crisis…

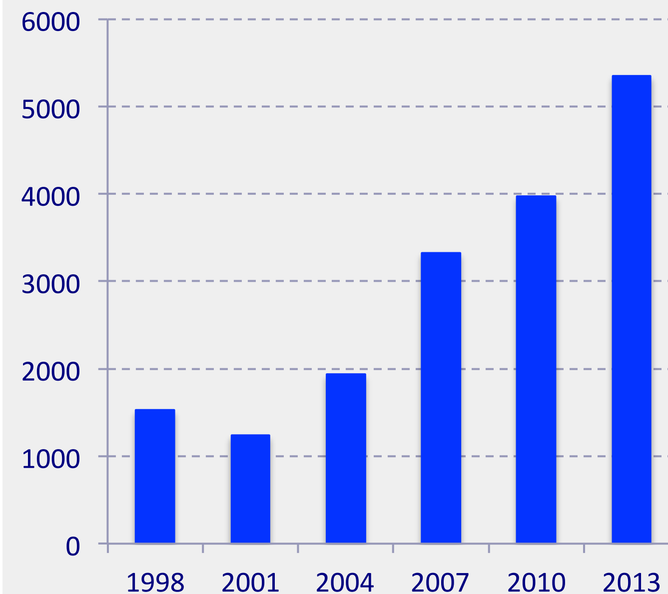
- We hear about globalization in the news all the time.
- World trade typically grows at twice the pace of world GDP (until recently).
- Foreign exchange market turnover has increased over the last 15 years.

World GDP growth and world merchandise export growth



Source: WTO Secretariat

Global foreign exchange turnover
Daily average in April, USD Billions



Source: Bank for International Settlements

However,

economists, policy makers and business people were surprised by the extent of international economic and financial contagion that resulted from the collapse of house prices in the US.

Why?

Economists had underestimated the financial interlinkages between countries, and the linkages and feedback between the financial sector and the real economy.

Difficulty in macroeconomic forecasting illustrated by the IMF economic growth forecasts released in October 2008, for 2008 and 2009. These forecasts were released after Lehman Brothers filed for bankruptcy (15 September 2008), well into the crisis.

IMF forecast and actual GDP growth for selected countries (yoy % change)

	October 2008 Projection		Actual	
	2008	**2009**	**2008**	**2009**
United States	1.6	0.1	1.1	-3.5
Japan	0.7	0.5	-0.6	-6.3
UK	1.0	-0.1	0.7	-4.9
Germany	1.8	N/A	1.3	-5.1
Italy	-0.1	-0.2	-1.0	-5.2
France	0.8	0.2	0.7	-2.6
Spain	1.4	-0.2	0.9	-3.7
China	9.7	9.3	9.0	9.2
India	7.9	6.9	7.3	6.8
ASEAN	5.5	5.4	4.9	1.7
Russia	7.0	5.5	5.6	-7.8
CEE	4.5	3.4	2.9	-3.6
Mexico	2.1	1.8	1.3	-6.2
Brazil	5.2	3.5	5.1	-0.6

Source: IMF World Economic Outlooks, October 2008 & October 2010

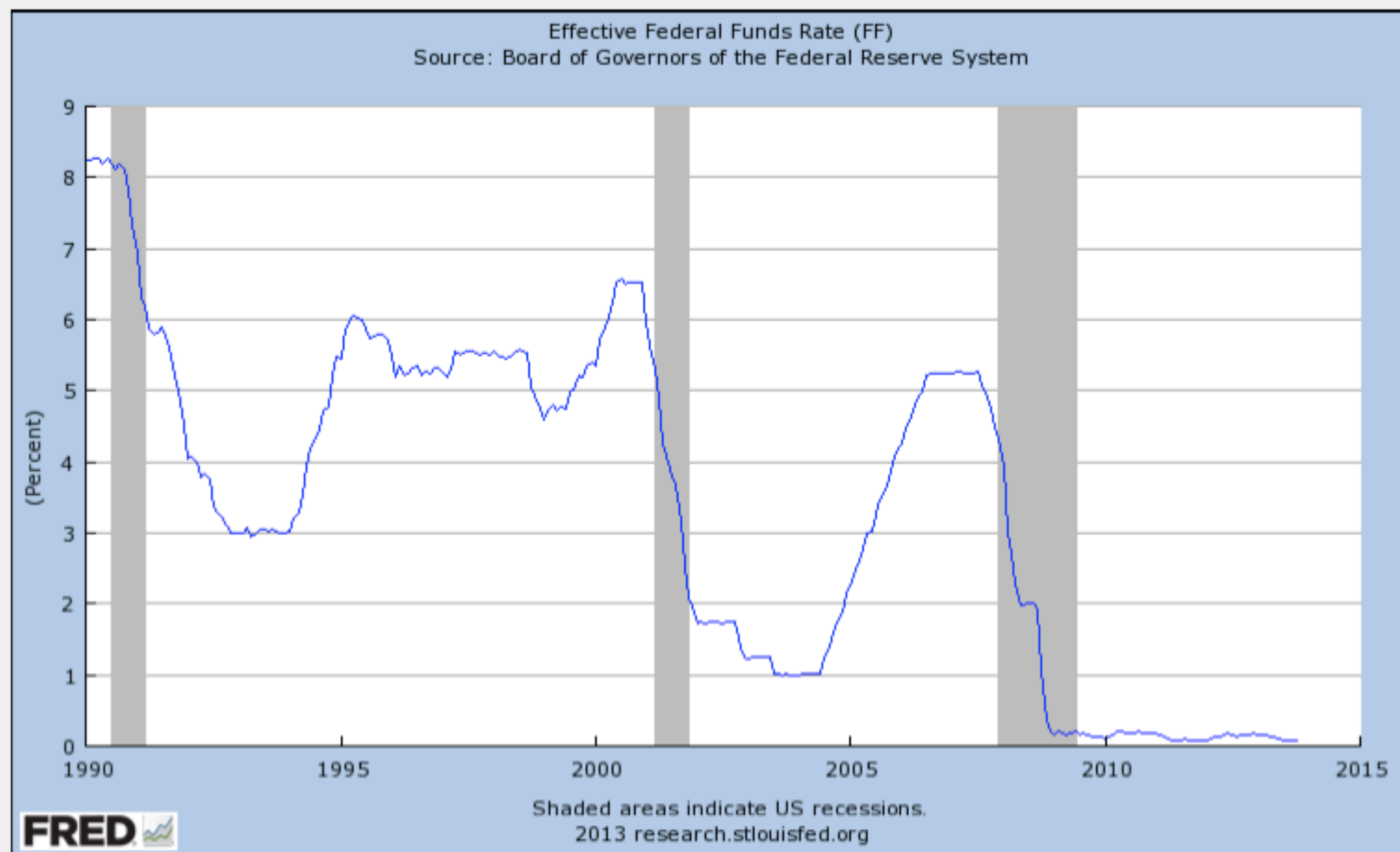
Macroeconomic models include little financial market information.

- Prior to 2007, financial sector information was not considered important in describing business cycle fluctuations.
- Difficult to incorporate.

Macro models still do a good job of describing the real economy, but they currently cannot capture interaction and feedback with the finance sector.

What key factors led to the financial crisis?

Accommodative US monetary policy in the early 2000s to support an economy that had fallen into recession after the tech stock bubble (and 9/11). In fact, monetary policy in many countries was accommodative.

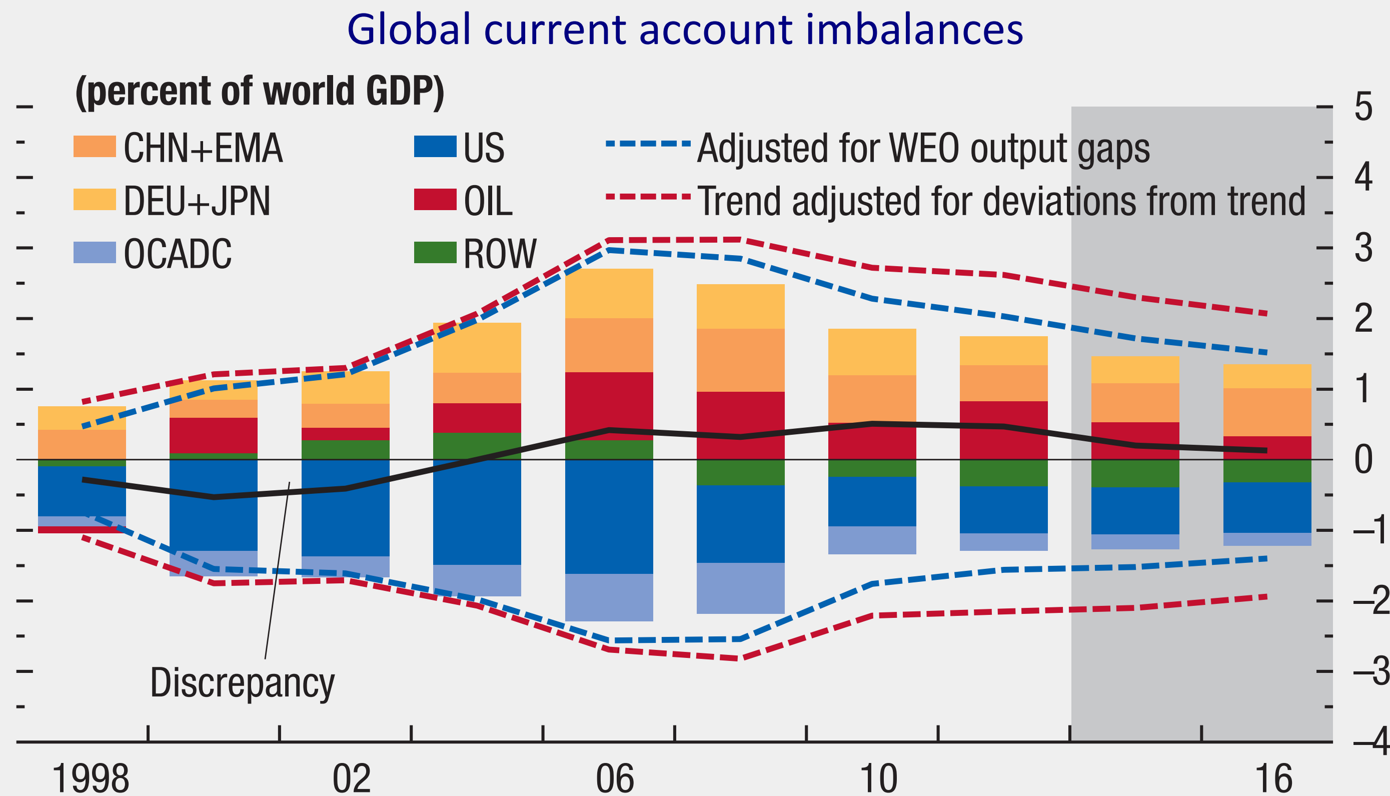


The global "savings glut", search for yield among investors and "global imbalances".

- The savings glut is believed to be the cause of Greenspan's "conundrum" – that long term market interest rates remained low even after the Fed started raising interest rates.

- Global imbalances refer to the trend of widening current account deficits and surpluses between major economies.

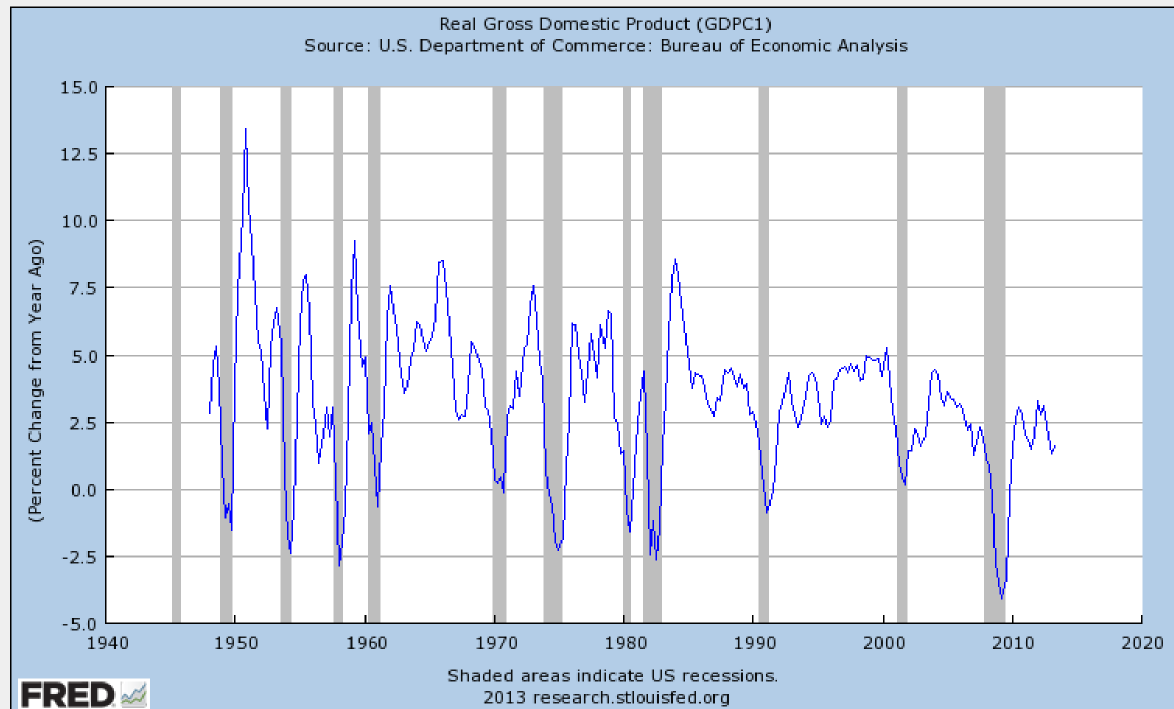
Global current account imbalances



Source: IMF World Economic Outlook, April 2013

Complacency – a widespread belief in "the great moderation", a more stable global economy and diversified financial system, meant that many economists, policy makers and business people believed that global economic/financial crises were a thing of the past.

- Excessive use of leverage (debt) by households, banks and other financial firms.
- Credit risk priced too low (investors did not demand adequate compensation for taking credit risk).
- Lax risk management in financial businesses. Bad mortgage lending practices.
- Financial regulation and business practices that permitted short-term and counterproductive incentives.

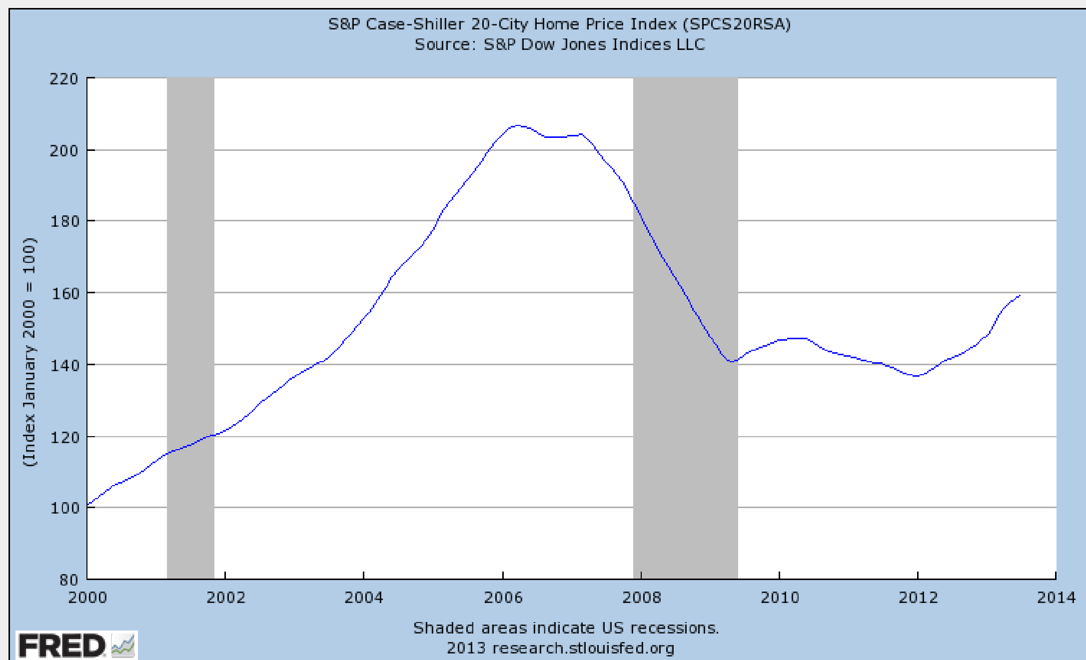


Minsky: In a calm economic and financial environment, market participants become inattentive to assessing, quantifying, and managing risk.

Greenspan (2013): *"Beware of success in policy… A stable, moderately growing, non-inflationary environment will create a bubble 100 per cent of the time."*

A bubble in United States house prices (also bubbles forming in other countries).

- Prices increased more than 30% per year at the height of the bubble. House buyers expected house prices to continue increasing, and many based their housing investment decisions on this expectation.
- Massive expansion of the use of sub-prime mortgages, lax lending standards.
- Banks adopted the originate and distribute business model for sub-prime residential mortgages.
- Financial innovation – banks created complex investment products (collateralized debt obligations or CDOs) based on sub-prime mortgages for global investors.
- Ratings agencies provided favorable credit ratings for these products based on incorrect models.
- Short-term incentives were an important factor driving subprime lending and CDO sales to investors.



Robert Shiller (2005): *"This is the biggest boom we've ever had… So a very plausible scenario is that home-price increases continue for a couple more years, and then we might have a recession and they continue down into negative territory and languish for a decade."*

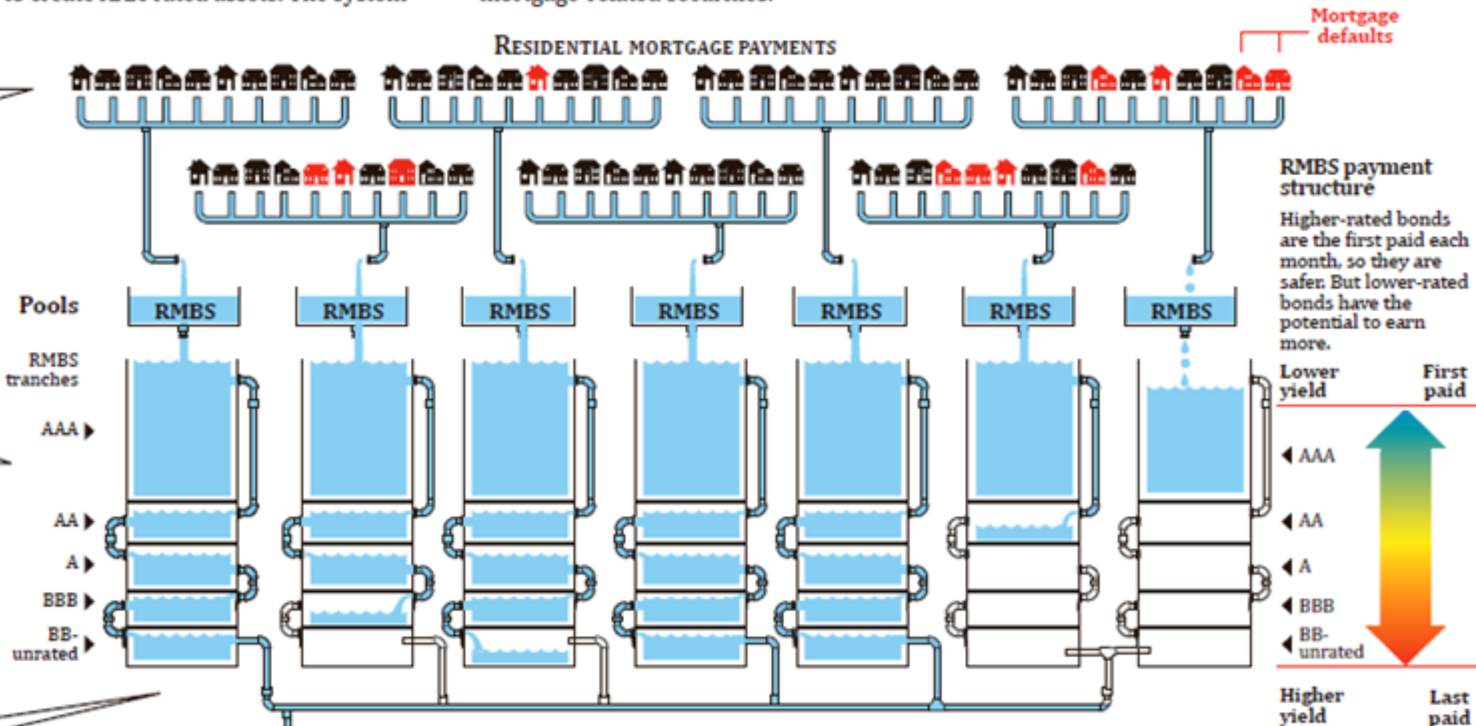
The Theory of How the Financial System Created AAA-rated Assets out of Subprime Mortgages

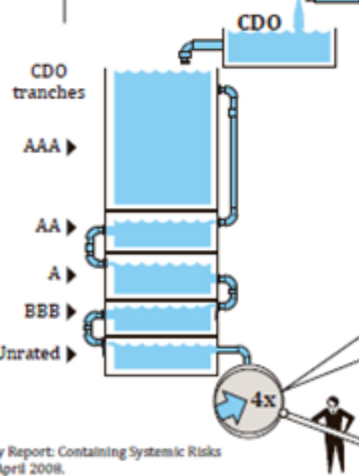
In the financial system, AAA-rated assets are the most valuable because they are the safest for investors and the easiest to sell. Financial institutions packaged and re-packaged securities built on high-risk subprime mortgages to create AAA-rated assets. The system worked as long as mortgages all over the country and of all different characteristics didn't default all at once. When homeowners all over the country defaulted, there was not enough money to pay off all the mortgage-related securities.

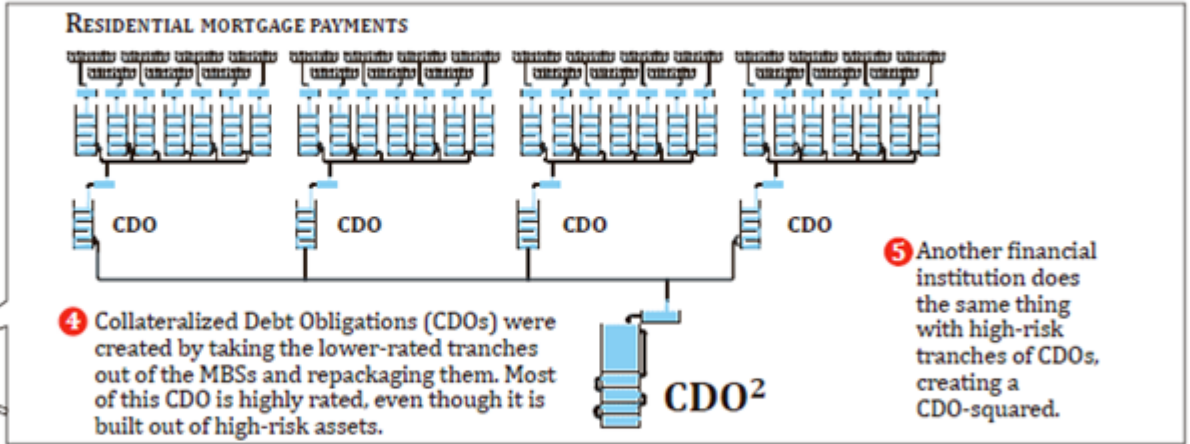
1. People all over the country take out mortgages. Financial institutions group hundreds of subprime mortgages into Mortgage Backed Securities (MBSs).

2. The securities are grouped into tranches by levels of risk and earnings potential for bond holders. When everybody can pay their mortgage in full each month, each group of bond holders gets paid.

3. The mortgage payments are collected by a financial institution and payments distributed to bond holders. Higher rated tranches are paid first. When monthly mortgage payments are not made, payments may not reach holders of lower-rated tranches.







4. Collateralized Debt Obligations (CDOs) were created by taking the lower-rated tranches out of the MBSs and repackaging them. Most of this CDO is highly rated, even though it is built out of high-risk assets.

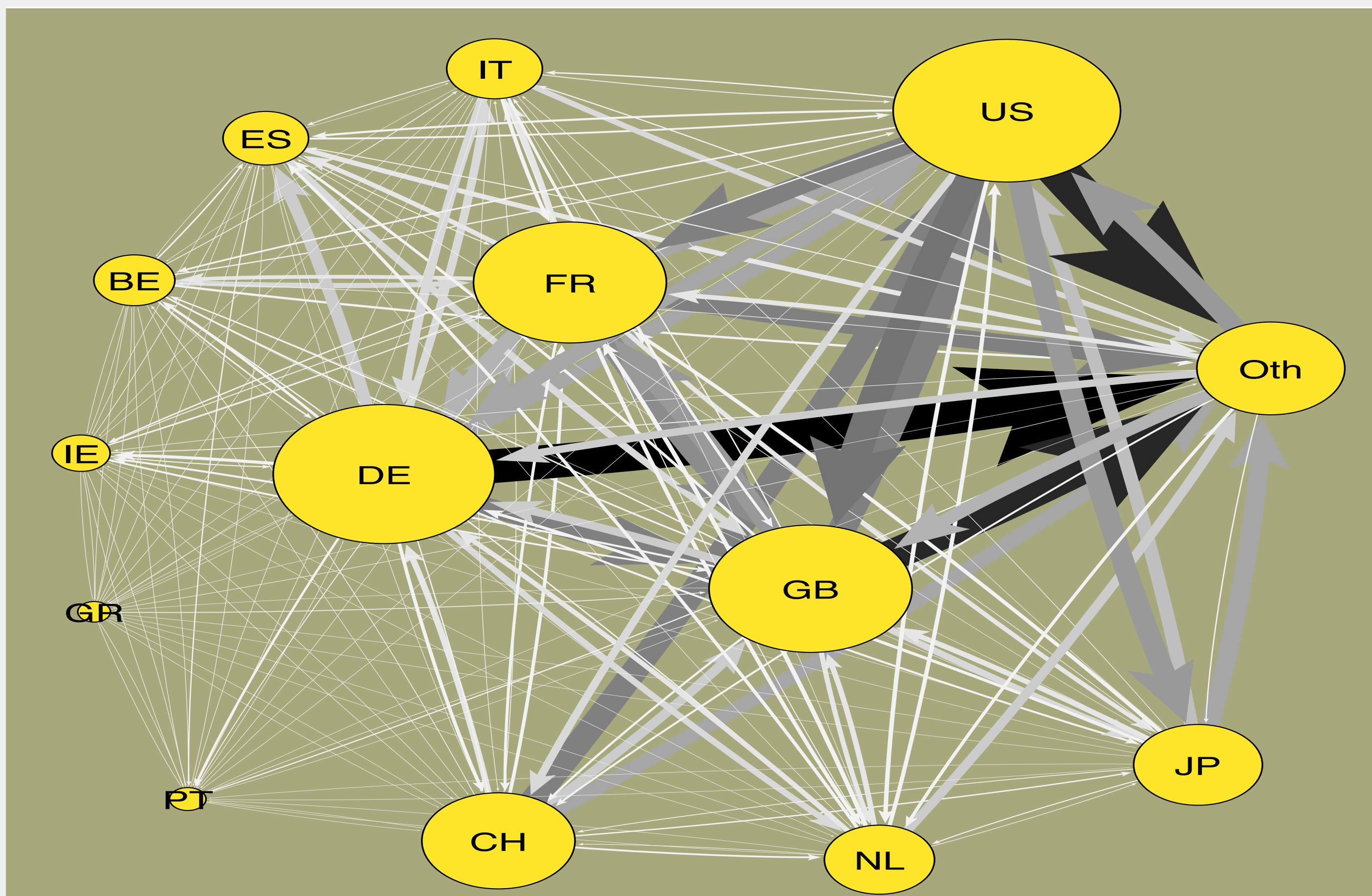
5. Another financial institution does the same thing with high-risk tranches of CDOs, creating a CDO-squared.

Source: IMF, Global Financial Stability Report: Containing Systemic Risks and Restoring Financial Soundness, April 2008.

How did deflation of the US housing bubble become a global financial system problem?

- The innovation of securitizing mortgages and selling the risk to investors was initially welcomed as it was thought to diversify risk-bearing in the financial system. However, this was not the case.
  - The housing bubble encouraged increased debt, particularly in the financial sector.
  - Securitization led to a cycle of greater credit supply, housing demand and higher prices.
  - Distribution of a large amount of risky securities to financial firms in the US & Europe increased systemic risk.
  - Opacity of the risks facing the financial system increased.
- US mortgage defaults increased substantially during 2007, as house prices fell and the economy weakened. This meant the value of CDOs fell rapidly. From mid-2007 financial firms in Europe and the US began to experience severe problems due to large losses on leveraged CDO portfolios. (IMF estimate of losses = USD 2.8t over 2007-10)
- There enormous uncertainty over how large losses will be and which firms were exposed to losses on CDO portfolios.
  - Suspicion of insolvency closed down interbank lending markets, leading to serious liquidity problems in interbank lending markets of many countries.
  - The failure of Lehman Brothers increased uncertainty over whether governments could or would step it to bail out large important financial firms.
  - Even major banks at the heart of the financial system were suspected of being insolvent.
  - This caused the global financial system to shut down, with the US and Europe the hardest hit.
  - Thus, a problem which would have been limited to US home lending banks became a global financial system problem.

Interconnectedness between banking "nationalities"



BE = Belgium; CH = Switzerland; DE = Germany; ES = Spain; FR = France; GB = United Kingdom; GR = Greece; IE = Ireland; IT = Italy; JP = Japan; NL = Netherlands; PT = Portugal; US = United States; Oth = other countries.

[1] Data are as at end-December 2010. The size of each circle is proportional to each bank nationality's share of total interbank claims on all other banking systems. It is based on consolidated data, so exposures through subsidiaries are included in those of the home office. The thickness of the arrows from bank nationality A to bank nationality B is proportional to the size of the interbank claims between those two bank nationalities. Data for Belgian and German banks are on an immediate borrower basis rather than an ultimate risk basis.

Source: Bank for International Settlements CGFS Paper 43

How did this effect the real economy?

- The credit creation process that had supported the boom in the US housing market essentially went into reverse.
  - Investors attempted to sell out of a whole range of real and financial asset classes that were thought to be overvalued. This contributed to a cycle of credit withdrawal by banks as their balance sheets, collateral (and capacity to lend) deteriorated.
  - Lower asset prices and withdrawal of credit from the financial system led firms to cut their investment plans and lower their earnings expectations, which in turn led to a cycle of further lower asset prices and lower real investment.
  - Firms in many countries relied on short-term borrowing via US credit markets that were now closed. As these firms no longer had access to capital they were forced to reduce their operations.
  - After taking on excessive debt, households in the US and other developed countries focused on repairing their balance sheets, cutting consumption significantly. Wealth effects further reduced consumption as asset prices fell.
- Leverage (or the amount of debt) proved to be very important in worsening the real economic consequences.
  - In macroeconomics, we usually believe exogenous shocks are the biggest problem for economic stability, and that after a shock the economy will head to a new stable equilibrium.
  - What we observed during the crisis is that the biggest shocks to the economy were endogenous, related to households and financial firms reacting to excess debt. Economies went into an unstable downward spiral of lower asset prices, consumption and investment that could only be reduced by substantial fiscal and monetary policy measures.
  - High leverage, financial interconnectedness and feedback between the financial sector and real economy now mean that small increases in the probability of tail events have a meaningful impact on business confidence and real economic activity.
  - Problems in small economies can cause global financial and economic instability.

Thank you!

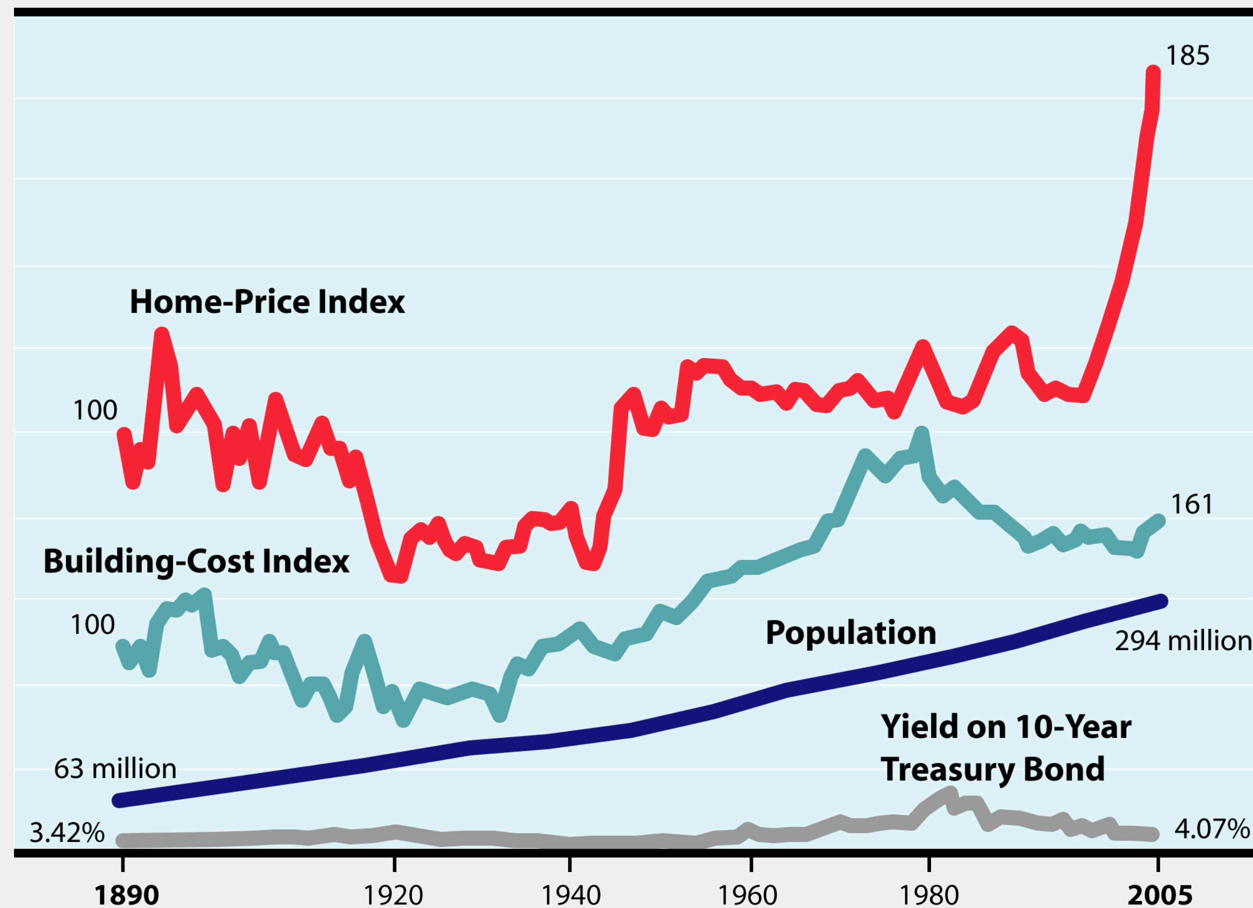
Questions, comments?

Background: 2007 crisis not the only recent financial/economic crisis

- 1982 Latin America sovereign debt crisis
- 1983 Israel Bank stock crisis
- 1980s/90s US Savings & Loan crisis
- 1987 Stock market crash
- 1987 New Zealand banking crisis
- 1989 US Junk bond crash
- 1991 India economic crisis
- 1992 Japan asset bubble collapse
- 1992 Nordic banking crisis
- 1994 Tequila crisis
- 1997 Asia financial and economic crisis
- 1998 Russian debt crisis
- 1999 Brazilian and Argentine economic crises
- 2000 US tech stock bubble
- 2007- Global financial crisis, European sovereign debt crisis, Great Recession
- *You are likely to face several financial/economic crises during your career.*

How do we decide whether high prices reflect a bubble?

- A hard question, even the 2013 Nobel Prize winners disagree



Source: Shiller, R., Irrational Exuberance, 2nd Ed.