

# Global Financial Systems

## Chapter 17

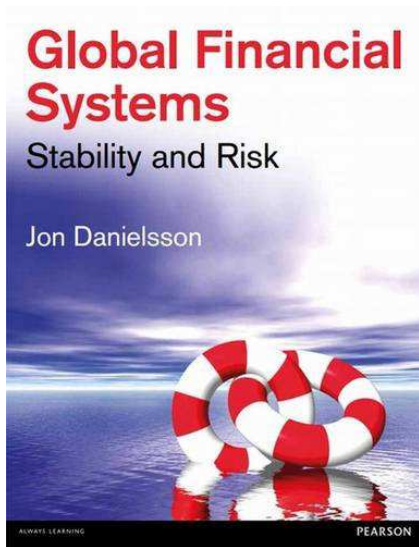
### The ongoing crisis 2007-2009 phase

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*Global Financial Systems: Stability and Risk*  
<http://www.globalfinancialsystems.org/>  
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# Book and slides



- The tables and graphs are the same as in the book
- See the book for references to original data sources
- Updated versions of the slides can be downloaded from the book web page [www.globalfinancialsystems.org](http://www.globalfinancialsystems.org)

# Background

# Historical context

## the first globalism

- First globalism until the Great War (1914)
- Crises in the first globalism had liquidity as a central element, e.g.
  - summer of 1914
  - 1866 and LOLR
  - 1764
- During first globalism, liquidity became a central element in policy response

# Second globalism

## from end of Bretton Woods

- Global financial markets grew rapidly in prominence around 1970
- The big battle for central banks was inflation (next slide)
- Central bank independence and primacy of monetary policy
- Similarly financial regulations focused on prudential behavior
  - survival of the institution not the system

# The fight against inflation

## successful generals syndrome

- Keynes misunderstood — Philips curve — always print money to combat downturns
- Politicians' dream
- Stagflation — **stagnation** and **inflation**
- Fighting inflation is a very painful process
- Monetarism, high interest rates, Saturday night massacre
- Today *inflation targeting*
- After that many (but not all) leading people in central banks thought the only thing central banks should do was fighting inflation

# The brave new world

## emergence of second globalism

- Reaction to 1973 oil crisis was monetary expansion
- International capital markets start taking off after a long break
- Western banks recycle Middle Eastern petrodollars to Latin America
  - From 1975–1982 its borrowings from abroad increase from \$75 billion to \$313 billion

Financial system becomes source of systemic risk

# The new order

- IMF and World Bank insist on *conditionality* for lending — structural adjustment programs
- Substantial costs of structural adjustments
- Sets the stage for *anti-globalism*
- And the *Washington consensus*



# Asia reacts to the 1997 crisis

- Reserves in *dollars*
- Exchange rates kept low to help exports
- Asia *exports capital*
- Helps to lower interest rates in the US and elsewhere
- China exports *deflation* to other countries

# Monetary policy and bubbles

mostly in the US but other countries follow

- Interest rates kept low
- And lowered when something bad happens
  - 1998
  - 9/11
  - etc.

## *Greenspan put*

- Inflow from Asia helps
- Traditional investors in government securities looked elsewhere

# Savings glut?

- A lot of complaints about too much debt — but the flipside is assets
- Is there too much savings in the world relative to investment opportunities?
- Giving rise to global imbalances
- Controversial because data is limited on capital flows internationally
- Question is unsettled

# Efficient markets

- Belief in “excessive” market efficiency to blame

“clear that among the causes of the recent financial crisis was an unjustified faith in rational expectations [and] market efficiencies.”

Paul Volker

- As used by financial economists, means something much more narrow

# What about crises?

- Happen in *other* countries
  - real estate bubbles
  - hot money inflows
  - inappropriate deregulation (S&L, Scandinavia)
  - prevented in our country by prudential regulations
- Nothing to do with the central bank
- CBs woefully ill-prepared
- *Financial stability not a priority*

# Hidden and Ignored Risk

# Crises are the same

- Financial crises usually have common elements
- Inflows of money
- Banks lend to increasingly marginal credits
- Asset price bubble
- Real estate, sovereigns, SMEs
- Valuations out the connections with the fundamentals
- Everything reverses at warp speed

Still, there are unique elements...

# Financial innovation, models and complexity

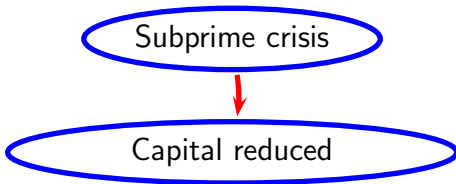
- The root causes are the same as in a typical crisis
- But there are unique elements
- Changing nature of banking
- Complexity and models — financial innovation
- Procyclicality of regulations
- Short-term funding — maturity mismatches



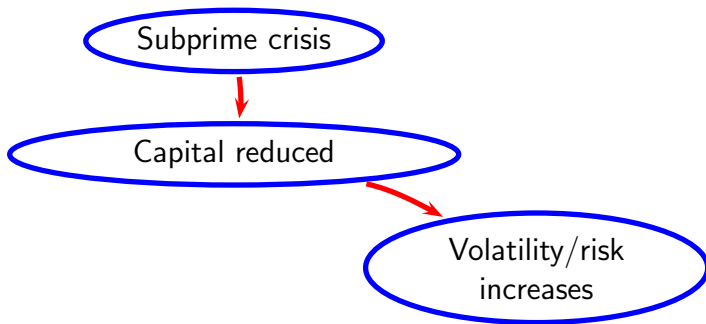
# Beginning of end (July 2007)

Subprime crisis

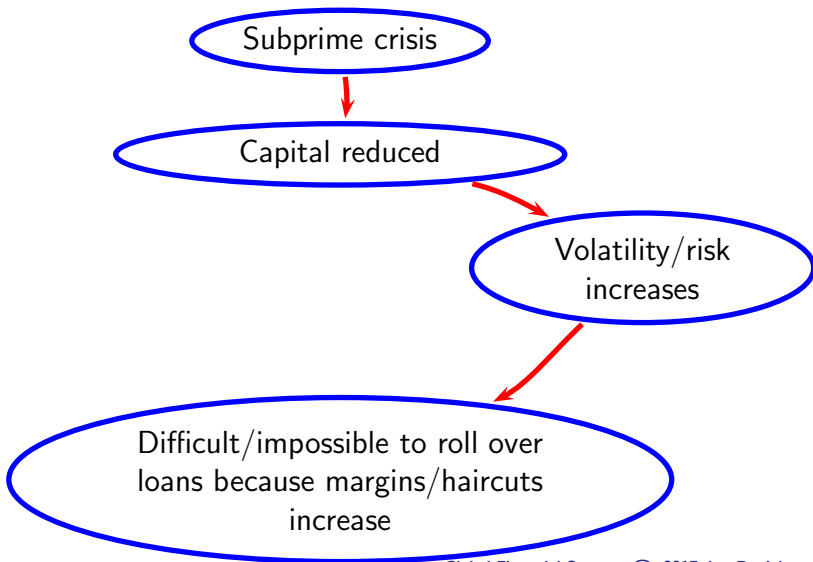
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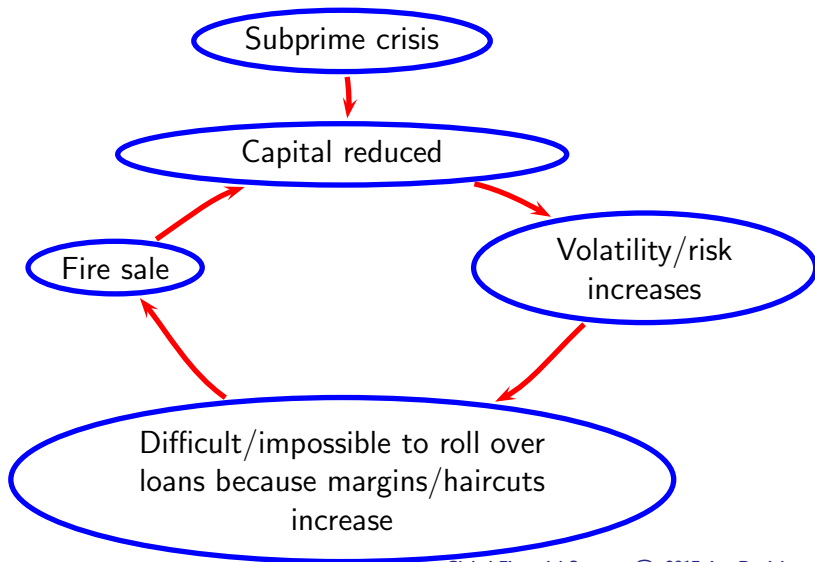
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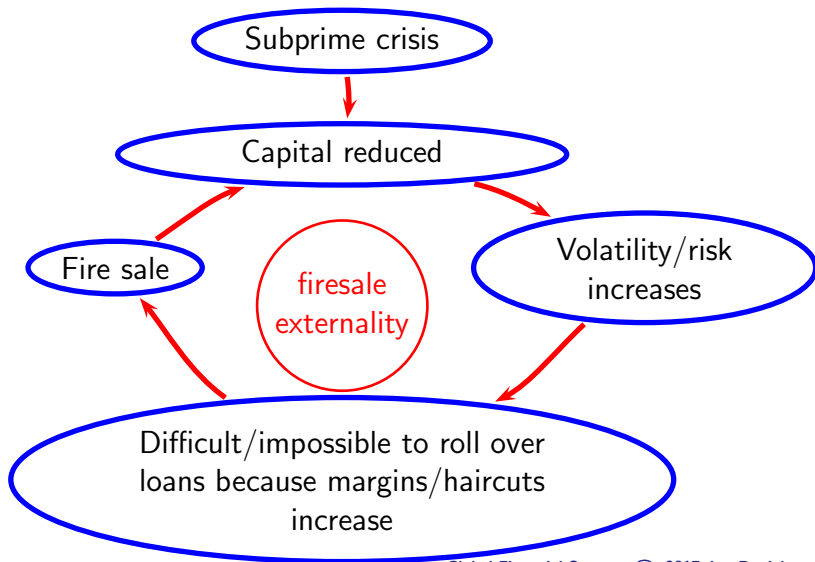
# Beginning of end (July 2007)



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# Beginning of end (July 2007)



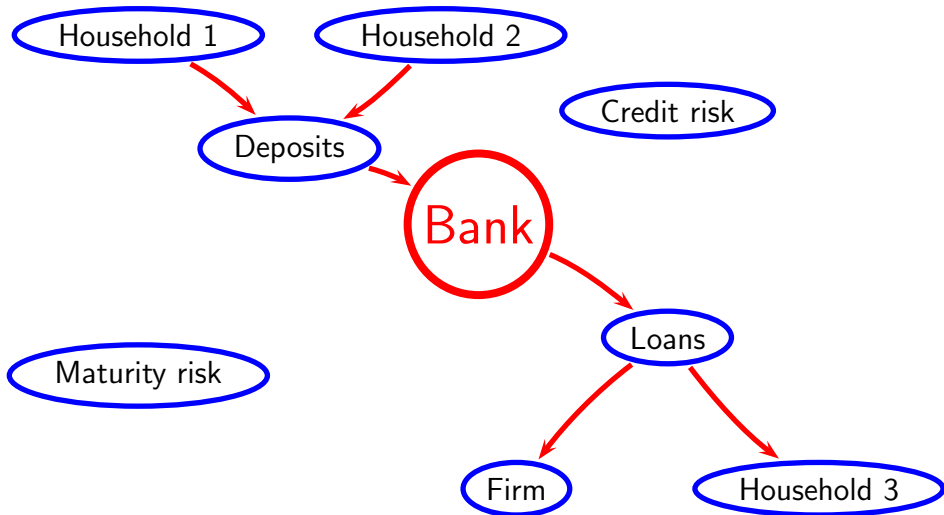
# Amplifiers

- Endogenous risk — losses feed them themselves — deleveraging
  - losses
  - margins
  - capital
- Banking (within banks)
  - capital
  - precautionary hoarding
  - worries about borrowers — existing clients
- Confidence in banking (from outside)
  - bank runs
  - toxic assets
- Network effects — gridlock

# Banks



# In the “good old days”



# The changing nature of banking

In the “good old days” (up to the early 1990s)

- Banks collected deposits and made loans
- Their risk was
  - default risk
  - bank runs (liquidity risk)
  - maturity mismatch
- *Network effects* were present, but much weaker than now
- We still had regular banking crises
  - banks have this annoying habit of *hubris*, often real estate or EMEs
- This is why banks are required to hold *capital*

# Changing nature of banking

- Short-term financing (ABSM)
- Originate and distribute
- Structured credit products
- Complexity

# Bank financing

## Assets

Long-term assets

Mortgages

Corporate loans

etc.

## Liabilities

Capital (*very expensive*)

Long-term financing (*expensive*)

Short-term financing (*cheap*)

Three month commercial paper

Repo (one day)

# Changing nature of banks

## bonuses dependent on profits

- Before the crisis financing was becoming ever shorter (was 40% overnight?)
- Banks start to rollover financing from one day to the next
- Create off-balance-sheet assets
  - structured products e.g. SIVs and Conduits (IKB)
  - creative accounting
  - hides liquidity risk (often from the bank itself)

# Shadow banking

- Refers to institutions and banking practices that exist outside of the traditional regulated banking sector
- Move risk into entities under bank control, but not a part of the balance sheet
- Helps in tax and risk management, and aid in capital structure optimization (recall conduits)
- Enables banks to do business unseen by supervisors, shareholders, accountants in legal and compliant way
- Example of Goodhart's Law
- Regulations create incentives to undermine regulations — shadow banks were one of the mechanism used.
- Many outlawed under Basel II

# The Crisis 2007–2008

# The canary in the coal mine dies

RIP IKB July 2007

- Conduits €10 billion, (20% of IKB balance sheet)
- IKB 38% government-owned
- Bailout: €9 billion – until 2011 (€125 per German)



## Surprises in July 2007

- Shares began to move in ways that were the opposite of those predicted by computer models
- Triggers selling by the funds as they attempted to cover their losses and meet margin calls from banks
- Exacerbates the share price movements
- GEO had lost more than 30 per cent of its value
- Goldman's flagship Global Alpha fund lost 27 per cent of its value

# Quant/hedge fund crisis

- High frequency — statistical arbitrage
  - quant models. Short-term reversal strategies
- Low-frequency
  - momentum strategy, etc.
  - carry trades
- Trades become crowded
- High dependence across strategies

# The eye of the storm

- After the main crisis event in August 2007
- The worst seemed over
- But fundamental problems had been exposed
- *Investors went on strike*
- In the fall of 2007 and winter of 2008, more and more financial institutions started to face *liquidity problems*

# Bear Stearns

- Weakest American investment bank started facing serious difficulties in early 2008
- In March 2008 NY Fed gave a \$29 billion loan to J.P. Morgan to facilitate its takeover of Bear Stearns, buying it at \$10 a share
- Bear traded at \$172 in January 2007, and \$93 in February 2008

“Given the exceptional pressures on the global economy and financial system, the damage caused by a default by Bear Stearns could have been severe and extremely difficult to contain”  
Bernanke

# Temporary calm

- Temporarily prevented widespread disruption in financial markets
- Was highly controversial and created the expectation that the authorities would similarly bail out other TBTF banks
- By September 2008, two important financial institutions were facing difficulties, Lehman Brothers and AIG

# Lehman Brothers

- Most disruptive event was the failure of Lehman Brothers on September 15, 2008
- An investment bank under then US rules
- Suffered large losses on real estate (classical way to fail) did not fail because of exotic instruments
- Turning point in the crisis
- Triggered a collapse in asset prices and an almost complete drying up of liquidity
- Government came under heavy pressure to bail Lehman's out, but it did not do so, maintaining that there was no legal authority for a bailout

# Should Lehman's have been bailed out?

- Against
  1. expectations of any bank being bailed out
  2. encouraging risk taking and bigger future bailouts — moral hazard
  3. failure forced everybody to recognize the seriousness of the problem
- For
  1. failure caused global liquidity to dry up
  2. setting world economy on the road to collapse
  3. creating uncertainty
  4. contributing to European sovereign debt crisis

# AIG

- Day after Lehman's, AIG bailout
- More systematically important since world's largest writer of CDSs
- Fear that its default would trigger a systemic crisis

“It is hard for us, without being flippant, to even see a scenario within any kind of realm of reason that would see us losing one dollar in any of those transactions.”

Joseph J. Cassano, the AIG executive in charge of the CDS unit, August 2007



- One of the world's largest insurance companies
- Set up a London-based bank that quickly became the world's largest seller of CDSs helped by its AAA rating
- \$450 billion of corporate CDSs, which suffered small losses, and about \$75 billion of subprime–mortgage CDSs which suffered more losses
- Caused AIG to be downgraded, increasing its funding costs and haircuts, in a typical vicious feedback loop
- Losses to tax payer still unknown but in low tens of \$ billion
- US taxpayer gave tens of billions of dollars to counterparties, most to Goldman Sachs and Deutsche Bank
- Collapse could have been handled more surgically but the existing regime did not allow that
- The bailout was better of two evils

# The fall of 2008

- Lehman's and AIG triggered the worst phase of the crisis in the fall of 2008
- Global liquidity dried up, financial institutions depending on the interbank market found themselves without funding
- The extreme risk levels are clearly visible in the VIX

Buildup  
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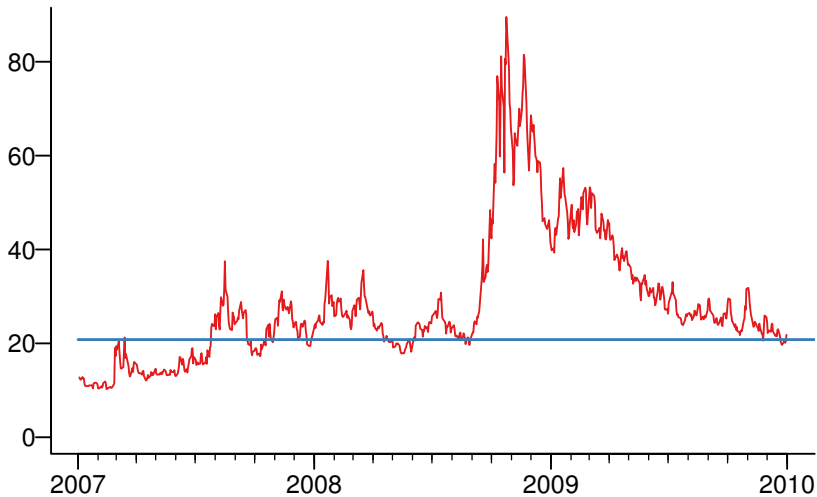
Hidden risk  
○○○○○

Banking changed  
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Crisis 2007–2008  
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Policy response  
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# VIX



# Was it a subprime crisis?

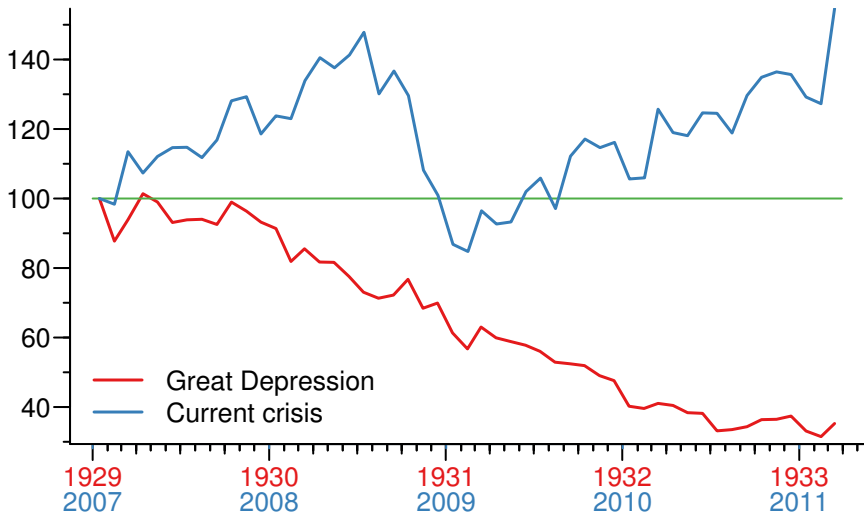
- US subprime mortgages around \$1.5 trillion ( $1.5 \times 10^{12}$ )
- If 50% default with recovery 50% — \$375 billion
- 3% change in stock market perhaps \$500 billion
- Something missing — *amplifiers*

# Policy Response

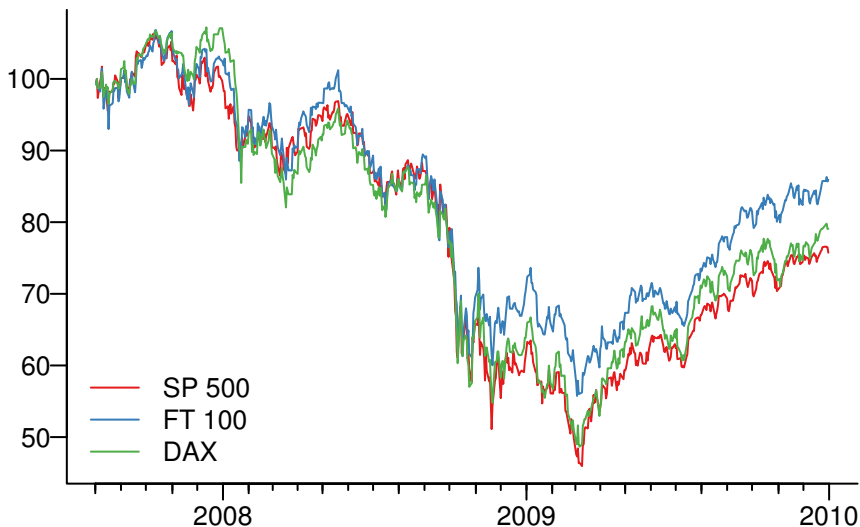
# Crisis over?

- Threatened a repeat of the Great Depression but prevented by the authorities
- Various bailouts, in whose absence large parts of the European and the US banking systems would have failed, with catastrophic consequences for the real economy
- Trade was maintained

# World trade



# Crisis over according to stock markets





# Responding correctly

- In the beginning, central banks were reluctant to lower interest rates and increase liquidity
  - Too much focus on moral hazard and inflation targeting
- All has changed, especially with Lehman's
- Plenty of liquidity
- Extensive cooperation
- Trade preserved
- Bank collapses contained