FINANCIAL CRISIS 2008

2018

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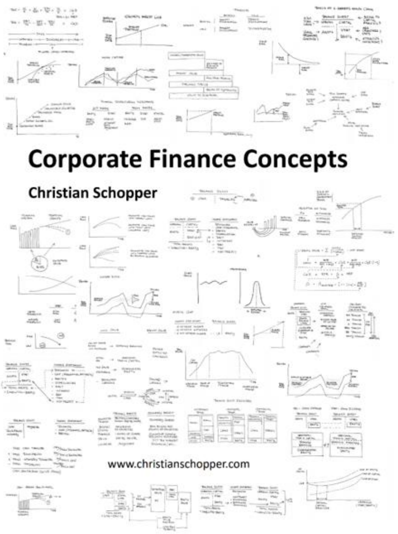

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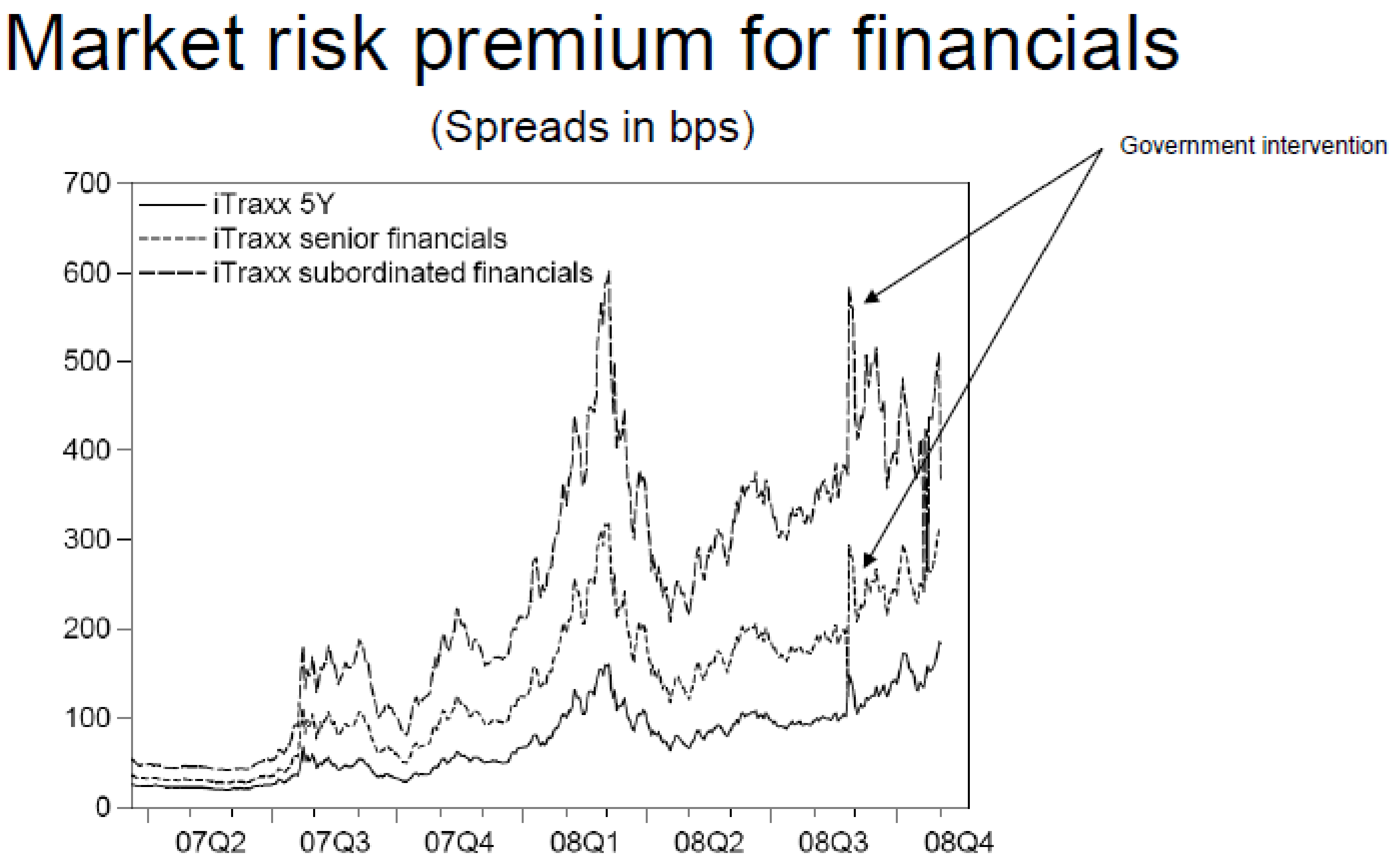
Intro

Collapse of the Financial System

- Weakening of US **labor market**
  - In parallel: Moderate increase of the risk-free rate, stagnation of US housing prices
- Defaults and compulsory auctions lead to **house price decreases**
  - Systematic risk component added
- **Shift of loss distribution** as the systematic risk increases
  - Resulting in increased dependencies within credit portfolios
- **Losses on securitization transactions** and credit derivatives due to altered risk assessment
- **Depreciations on financial assets** lead to increased liquidity demands of financial institutions
- **Liquidity demands cause fire sales** of securitization transactions and credit derivatives
- **Excess supply of structured products** and uncertainty concerning the true loss distribution of the respective underlyings
  - Resulting in a collapse of the market for credit risks (especially CDOs)
- **Severe losses on structured products** lead to a collapse major segments of banks' lending activities

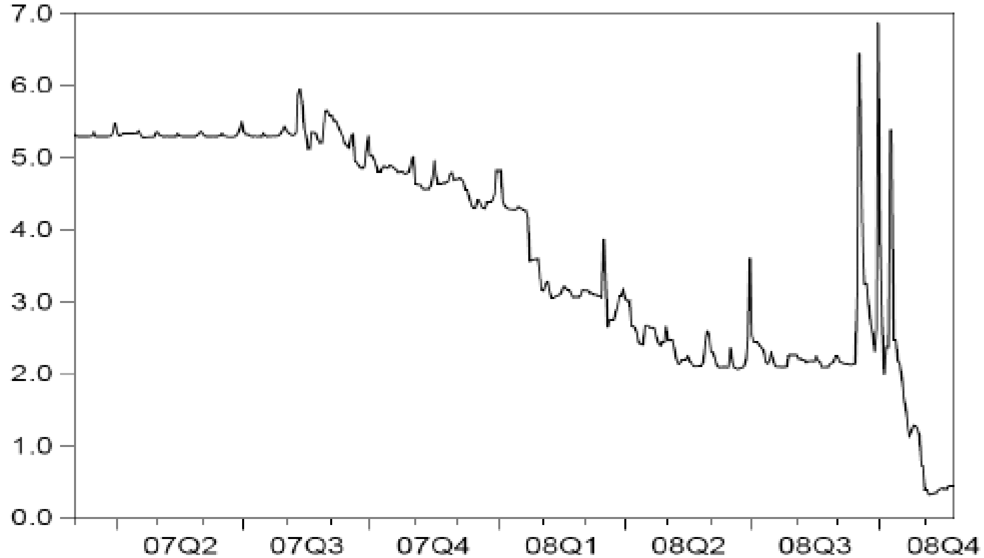
Collapse of the Financial System (cont´d)



Source: International Index Company, 03/20/2007 – 11/21/2008

Illiquidity spills over to inter-bank-market

3 month USD LIBOR in percentage points



Source: Thomson One Banker, 03/01/2007 – 11/21/2008

Major Events of the Financial Crisis

- June 22, 2007: Failure of two Bear Stearns structured credit hedge funds;
- July 30, 2007: IKB in distress, later rescued by government-owned KfW;
- September 14, 2007: Northern Rock bank run, central bank emergency funding;
- March 17, 2008: Bear Stearns failure, rescue by the FED and JP Morgan;
- July 11, 2008: IndyMac Bank failure;
- September 7, 2008: Fannie May and Freddy Mac rescued by government;
- September 15, 2008: Lehman Brothers failure;
- September 15, 2008: Merrill Lynch acquired by Bank of America;
- September 16, 2008: AIG rescued by government taking 80 percent stake;
- September 26, 2008: Washington Mutual failure, assets acquired by JP Morgan;
- September 29, 2008: Wachovia banking operations acquired by Citigroup;
- September 29, 2008: Bradford and Bingley is nationalized;
- September 29, 2008: HRE in distress, government takes up to 90 percent stake;
- September 29, 2008: Fortis in distress, joint bailout by three governments;
- September 30, 2008: Dexia in distress, joint bailout by three governments;
- October 6, 2008: Iceland nationalizes its banking system;
- October 16, 2008: UBS assigns USD 60 Billion to central bank secured Bad Bank;
- October 19, 2008: ING in distress, government takes stake;
- November 24, 2008: Citibank receives government bailout package;
- October 28, 2008: Aegon in distress, government takes stake;
- January 16, 2009: Anglo Irish Bank nationalized;
- January 8, 2009: Commerzbank in distress, government takes 25 percent stake;
- January 16, 2009: Bank of America receives government bailout package;
- November 1, 2009: CIT Group bankruptcy.

International edition

The Guardian

Three Decisive Weeks

2008

- **Not since 1929** had the financial community witnessed 12 months like in 2008

- Bankrupt went: Lehman Brothers
- Nearly bankrupt went and had to be rescued: Merrill Lynch, AIG, Freddie Mac, Fannie Mae, HBOS, Royal Bank of Scotland, Bradford & Bingley, Fortis, Hypo and Alliance & Leicester

Week 1: 9-15 March 2008

January – February 2008

- The first two months of 2008 were **calm**
  - Except that global **banks routinely updated investors over** the tens of billions of dollars they had **lost**

- At the start of the year, a global economic meltdown still seemed **unimaginable** to many
  - George **Bush announced a US$150bn tax rebate in January**, equivalent to US$1,000 for every American household

9-15 March 2008

8 March 2008

- **Eliot Spitzer**, New York governor and the scourge of Wall Street, called his closest aides …
  - The former New York attorney-general, who had prosecuted bulge-bracket banks following the ramping up of internet stocks, admitted he had been caught on a wire tap confirming plans to a **young woman** to join him in a private room at the so-called Emperors' Club where New York's wealthy elite bed prostitutes …

9 March 2008

- **Blackstone** Group, manager of the world's biggest buyout fund, revealed it had suffered a **90% profit drop** during 4Q2007
  - Headed by Stephen Schwarzman, Blackstone exemplified **leverage** …
  - In **January**, it was one of a small consortium of private equity firms that had invested US$31.3bn to buy the world's biggest **casino** company …
  - Blackstone had spent hundreds of billions of dollars on **consumer** and **leisure** firms, most recently also on **clean technology**

9-15 March 2008 (cont´d)

9 March 2008 (cont´d)

- In Britain house-builder **Bovis warned** that unless there was an urgent cut in interest rates, the **property market** would **collapse**
  - It was a message the Bank of England failed to follow until much later …

10 March 2008

- Blind **panic** on Wall Street: The **US Federal** Reserve **injected** US$236bn into the American banking system
- Other central banks followed
- **Citigroup**, the world's biggest bank, was forced to **bail out six of its hedge funds**, spending about US$ 2bn

11 March 2008

- Calm

9-15 March 2008 (cont´d)

12 March 2008

- Carlyle Group, admitted that one of its funds, the US$22bn **Carlyle Capital** Corporation fund , **could not repay** its **debt**
  - For every US$1 of equity, CCC was **leveraged** with US$32 of loans
- The price of **gold** reached a **record**, trading at US$1,000 an ounce

13 March 2008

- **Bear Stearns** received an **emergency bail-out** from the Fed and JP Morgan Chase
- Global equities dived
- **Venezuela** opened oil contracts in euros to **hedge against the dollar** …

Week 2: 14-20 September 2008

14-20 September 2008

13 September 2008

- **Federal Reserve and US Treasury** officials met to **hold talks** with the chairmen of the biggest investment banks
  - The goal was to **secure a saviour for Lehman Brothers**, America's fourth largest bank, **ahead of the opening of Asian markets** that evening
  - Hank **Paulson**, the former Goldman Sachs chief who was US Treasury Secretary, **refused to sweeten a Barclays or Bank of America takeover** of Lehman's with public money: The two suitors walked away
  - Lehman had spent the last five years amassing a huge commercial property loan book
- **Meanwhile** Ken Lewis, **Bank of America**'s boss**,** that night **concluded** a deal to **take over Merrill Lynch**

14-20 September 2008 (cont´d)

14 September 2008

- **Lehman's** 5,000 **London** staff turned up to work on Monday to find **administrators** from PricewaterhouseCoopers handing out leaflets at reception
  - They announced that their employer was **bankrupt**
- Lehman's London traders found they could not do business with counter-parties
  - The **New York HQ had transferred cash back** to base
  - London had been cut adrift
  - As the day continued, **staff left** Lehman's Docklands HQ carrying their belongings in boxes …
- UK Chancellor Alistair Darling suspected that the Lehman effect would ripple far and wide
  - He held talks with the FSA chairman McCarthy and Gordon Brown
- That evening, Brown steered Lloyd TSB chairman Victor Blank into a quiet corner during a party
  - **The prime minister said he would waive competition law to allow Lloyds to take over HBOS**

14-20 September 2008 (cont´d)

15 September 2008

- Darling, McCarthy and Bank of England governor Mervyn King met to review the crisis
  - They decided **HBOS** directors had to be told that **'soldiering on wouldn't do**'
- The world's biggest insurance company, **AIG**, had seen its **stock market value collapse**
  - There were **fears** that if the firm were to go under it would bring the world banking system down
  - This was because AIG had transformed itself from an insurance company into a **leading player in the new credit default swap market**
  - AIG was in the business of insuring leveraged debt **just at the time when the financial system was on a precipice** …
- Bernanke, Fed Chairman, knew that, unlike Lehman Brothers, he could not let AIG fail
  - He announced an **US$85bn emergency loan**
  - It would **not be the last time** AIG got help …

14-20 September 2008 (cont´d)

15 September 2008 (cont´d)

- By Tuesday night, it was clear that HBOS was about to become the biggest UK victim of the financial crisis
  - Journalists became aware that both Lloyds and HSBC were prepared to step in

16 September 2008

- In the **morning**, Gordon Brown asked the FSA to put out a statement saying that the former building society was 'well capitalised'
  - He became **concerned that savers in HBOS would be spooked** by relentlessly negative headlines
- **Minutes later BBC pushed out** the story that Lloyds was buying HBOS

17 September 2008

- A shattered-looking Andy Hornby, the **HBOS** chief executive announced the deal with his **Lloyds** counterpart

14-20 September 2008 (cont´d)

18 September 2008

- Rumours circulated that Goldman Sachs might be in trouble
- Worried regulators put a **temporary ban on short-selling of financial stocks** to prevent shares falling further
- Hank Paulson unveiled a **plan** to **inject hundreds of billions of dollars of taxpayers' money to buy up toxic assets**

Week 3: 5 – 11 October 2008

5 – 11 October 2008

4 October 2008

- German chancellor Angela **Merkel** promi**sing to guarantee the accounts of all her countrymen's savers** …
  - … **destroying** efforts to build a **European concensus** on a rescue strategy

5 October 2008

- More than **£90bn wiped off the value of Britain's companies** in the City's worst day of trading since Black Monday in 1987
  - Gordon Brown promised to do 'whatever it takes' to halt the panic …
- Businesses up and down the country would later insist that in October, **everything, 'fell off a cliff'**; and this was the week it began

6 October 2008

- First meeting of Gordon Brown´s **National Economic Council**
  - A gathering of senior ministers, styled as a **war cabinet** for the credit crunch

5 – 11 October 2008 (cont´d)

6 October 2008

- **Icelandic** government rushing through an **emergency bill** to take control of its collapsing banks
  - Also **sent out feelers to the IMF** about a potential emergency loan

7 October 2008

- **Brown** and Alistair Darling ready to **announce a £50bn bank bail-out**
  - 05.00 morning crisis meeting at Number 11 Downing Street to put the final touches
  - At 11.41, as Brown prepared for his first prime minister's questions since parliament's summer recess, his phone rang …
- Mervyn King informs the prime minister that **interest rates would be cut by half a percentage point**, at 12.00
  - … in a move co-ordinated with central banks around the world

5 – 11 October 2008 (cont´d)

7 October 2008

- Hank Paulson, now in charge of America's response to the crisis, was desperately attempting to reassure millions of anxious voters that their savings were safe
  - **Scepticism from the financial markets about** his **US$700bn 'Troubled Asset Relief Programme**,' aimed at using taxpayers' cash to buy up toxic assets from endangered Wall Street institutions
- IMF annual meeting in Washington
  - Warning that the world economy faced a painfully tough year

8 October 2008

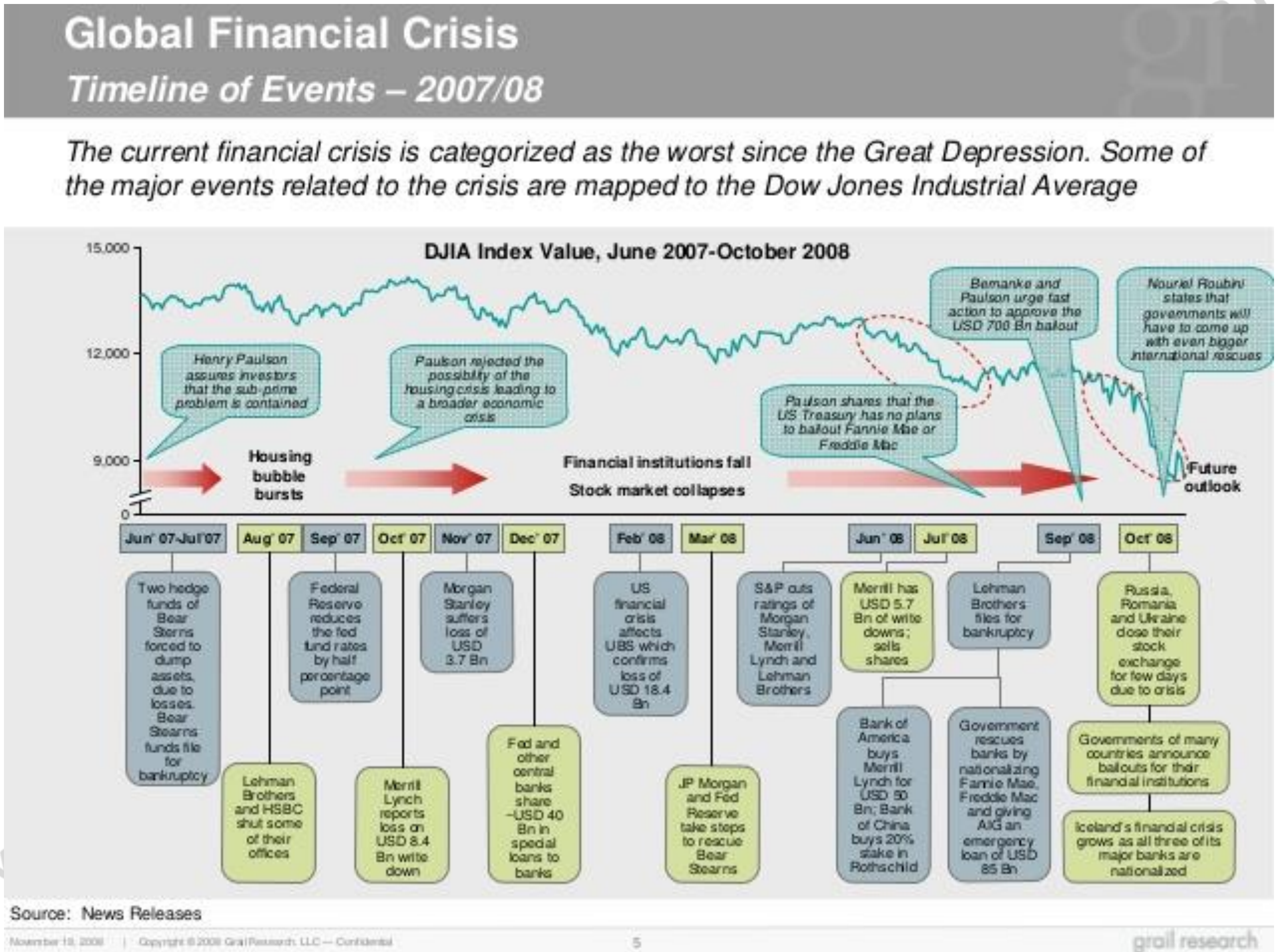
- Dominique Strauss-Kahn, the **IMF's** managing director, said he **had prepared a US$200bn war chest to lend to governments driven to financial crisis**
  - Could make cash available to struggling countries within a fortnight

5 – 11 October 2008 (cont´d)

9 October 2008

- Finance ministers from the **G7 Club** flew to Washington
  - Communiques from G7 finance ministers' meetings are usually in carefully diplomatic language …
- **Japanese delegates** spoke with passion about their own **'lost decade**' of debt and recession in the 1990s
  - Urged their counterparts from around the world to sign up for radical action
- **Dow Jones** index **dropped 700 points** in early trading
  - Then swung up to end up 'only' 128 points down on the day
- Alistair Darling was firming up the details of which banks would take how much from the Treasury's bail-out
  - Also **negotiating with the Icelandic government about the return of UK consumers' deposits in the banking sector**
- Finance ministers signed up to a bullet list of items promising to prop up banks with taxpayers' money where necessary, and use public funds to thaw out the frozen credit markets

Timeline



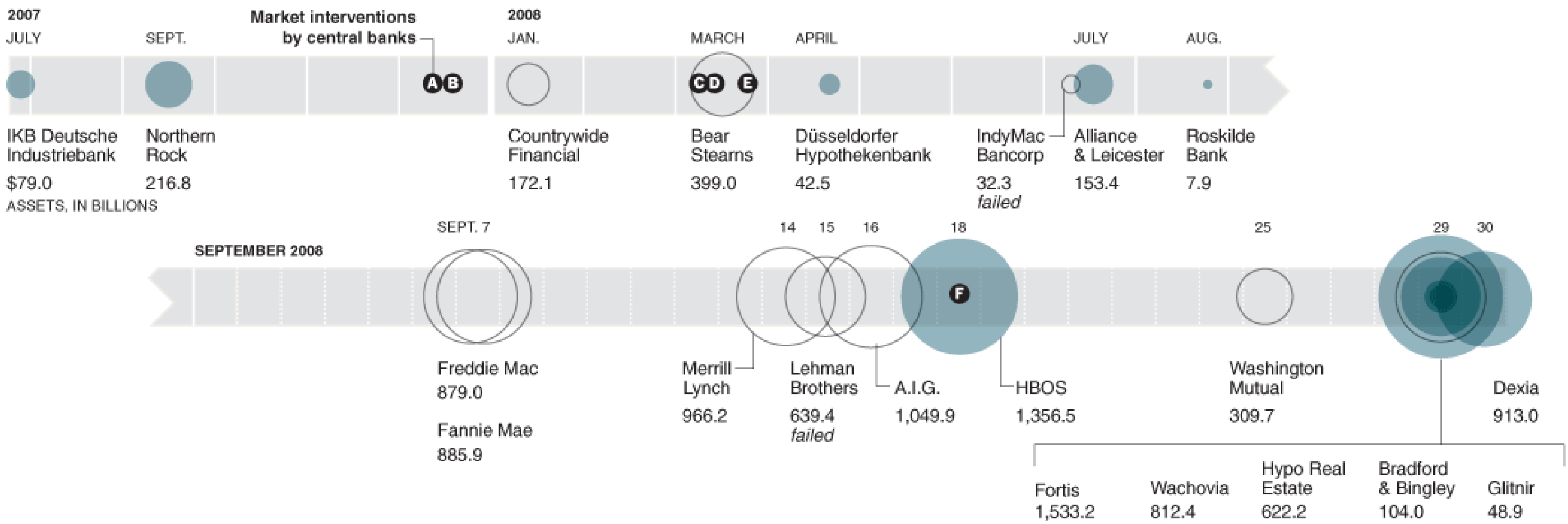
Global Financial Crisis
Timeline of Events – 2007/08
The current financial crisis is categorized as the worst since the Great Depression. Some of the major events related to the crisis are mapped to the Dow Jones Industrial Average
DJIA Index Value, June 2007-October 2008
15,000
12,000
9,000
0
Henry Paulson assures investors that the sub-prime problem is contained
Paulson rejected the possibility of the housing crisis leading to a broader economic crisis
Paulson shares that the US Treasury has no plans to bailout Fannie Mae or Freddie Mac
Bernanke and Paulson urge fast action to approve the USD 700 Bn bailout
Nouriel Roubini states that governments will have to come up with even bigger international rescues
Housing bubble bursts
Financial institutions fall
Stock market collapses
Future outlook
Jun' 07-Jul' 07
Aug' 07
Sep' 07
Oct' 07
Nov' 07
Dec' 07
Feb' 08
Mar' 08
Jun' 08
Jul' 08
Sep' 08
Oct' 08
Two hedge funds of Bear Sterns forced to dump assets, due to losses. Bear Stearns funds file for bankruptcy
Lehman Brothers and HSBC shut some of their offices
Federal Reserve reduces the fed fund rates by half percentage point
Merrill Lynch reports loss on USD 8.4 Bn write down
Morgan Stanley suffers loss of USD 3.7 Bn
Fed and other central banks share ~USD 40 Bn in special loans to banks
US financial crisis affects UBS which confirms loss of USD 18.4 Bn
JP Morgan and Fed Reserve take steps to rescue Bear Stearns
S&P cuts ratings of Morgan Stanley, Merrill Lynch and Lehman Brothers
Merrill has USD 5.7 Bn of write downs; sells shares
Lehman Brothers files for bankruptcy
Bank of America buys Merrill Lynch for USD 50 Bn; Bank of China buys 20% stake in Rothschild
Government rescues banks by nationalizing Fannie Mae, Freddie Mac and giving AIG an emergency loan of USD 85 Bn
Russia, Romania and Ukraine close their stock exchange for few days due to crisis
Governments of many countries announce bailouts for their financial institutions
Iceland's financial crisis grows as all three of its major banks are nationalized
Source: News Releases
5
grail research

Timeline

Casualties of the Financial Crisis

A timeline of bailouts, buyouts and takeovers of financial services companies in the U.S. ○ and Europe ● since the subprime mortgage crisis began.

Figures are assets as last reported and do not include the value of securities that some companies, notably Fannie Mae and Freddie Mac, guaranteed.



Market interventions by the Federal Reserve or the European central banks

A DEC. 12 Central banks of the United States, the European Union, Canada and Switzerland announce a plan to provide at least $90 billion in short-term financing to banks.

B DEC. 18 The European Central Bank injects $500 billion into the financial system. The Bank of England auctions off $20 billion in three-month loans.

C MARCH 7 The Federal Reserve offers up to $200 billion in 28-day loans to banks and big financial institutions.

D MARCH 11 The Federal Reserve offers investment banks up to $200 billion in Treasury securities in exchange for mortgage-backed securities.

E MARCH 21 The European Central Bank offers up to $24 billion in loans to help banks shore up balance sheets. The Bank of England offers up to $10 billion in loans.

F SEPT. 18 The Federal Reserve, the European Central Bank, the Bank of England, the Bank of Japan and the central banks in Switzerland and Canada make $180 billion available in currency swaps.

Source: Bloomberg

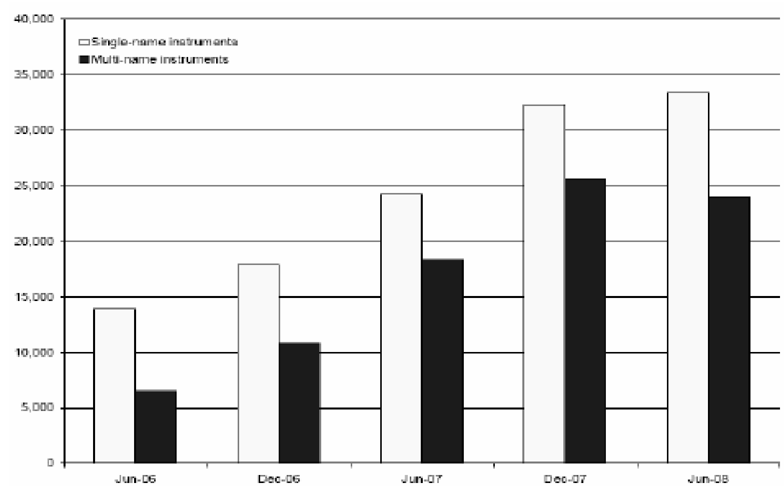
THE NEW YORK TIMES

Observations

The Role of Financial Products

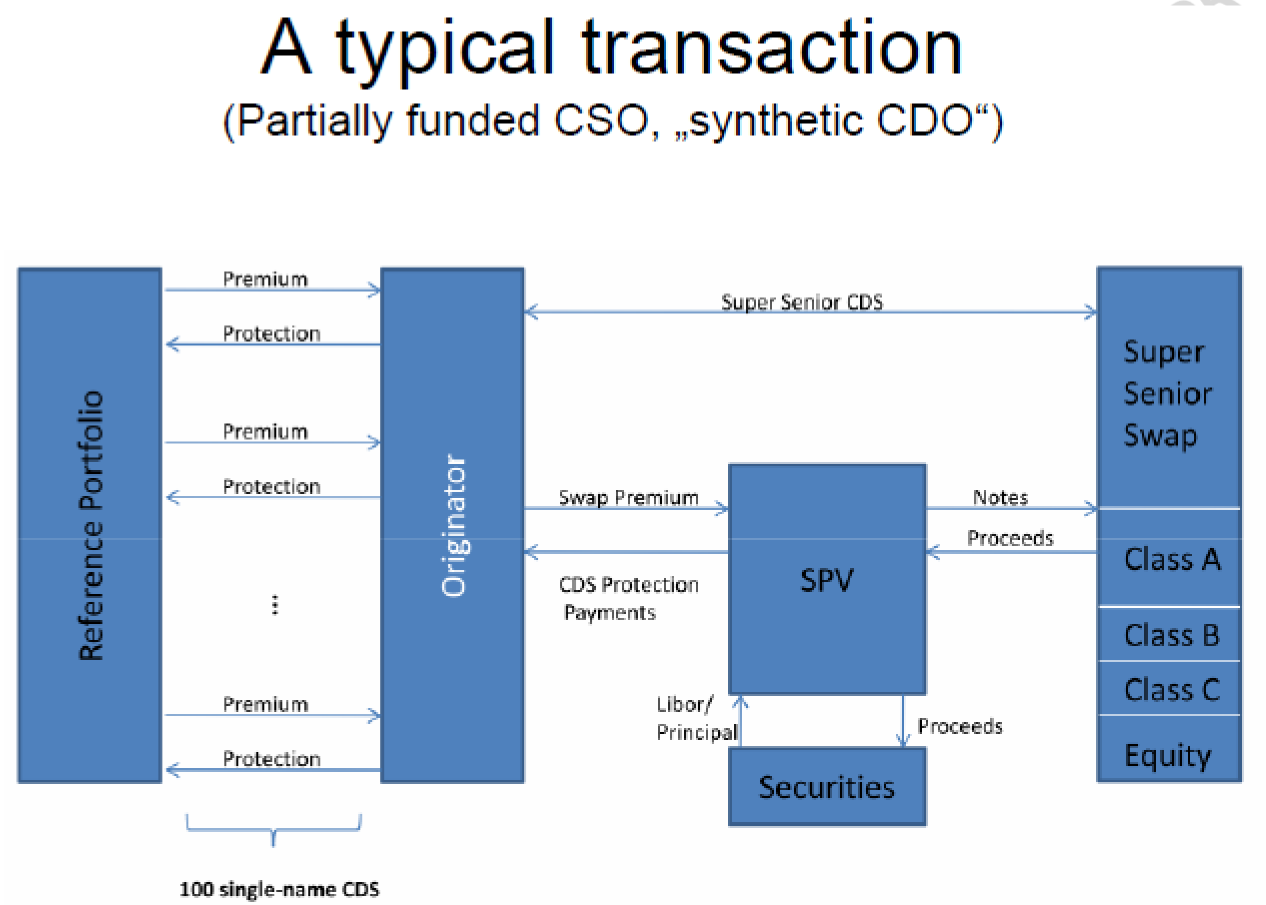
- Financial products embed innovative structures which allow the **transfer of risks** within the global financial system
  - Originators of credit risk are no longer required to bear the given risk
  - Securitizations (e.g. RMBSs), credit derivatives (e.g. CDSs, CDOs)

Structured products (in bn USD)

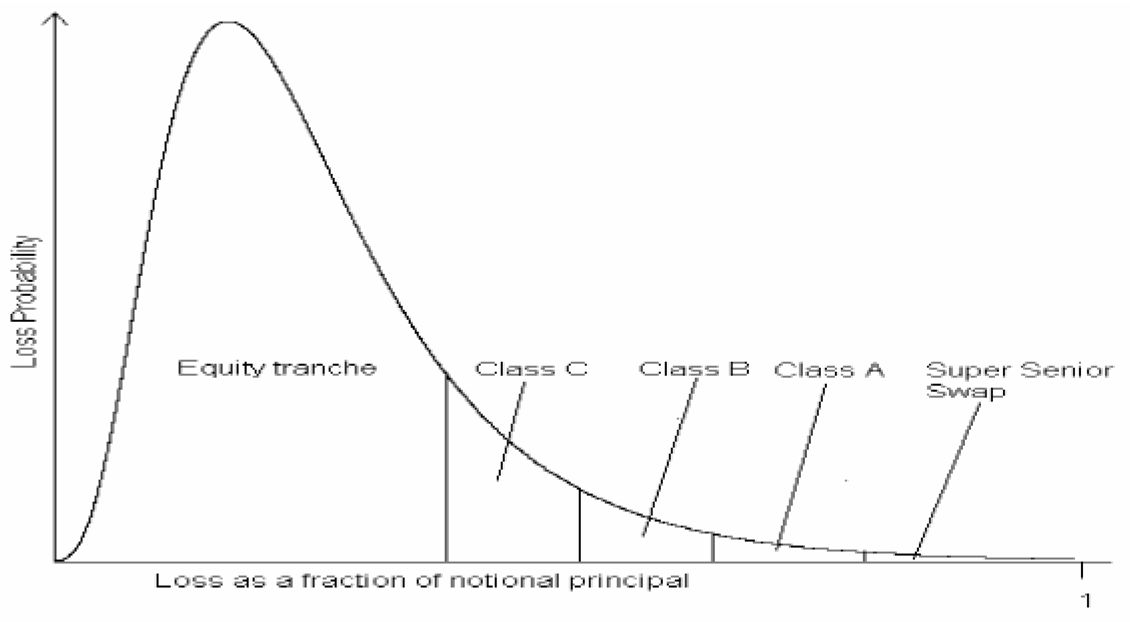


Source: Bank for International Settlements

The Role of Financial Products (cont´d)



Tranching the loss distribution of the reference portfolio



The Role of Financial Products (cont´d)

Problems embedded in structured products

- Transparency
  - Complexity and **asymmetric information** make risk assessment a daunting task
- Modeling
  - Assumptions concerning the **loss distribution** crucially influence the risk structure of individual tranches …
  - … whereby the dependencies of individual risk positions in the reference portfolio are **difficult to assess**
- Market structure
  - **Counterparty risks** (OTC-market)

Lessons Learned

- Interests in the financial system need to be balanced
  - How to promote **sustainable** investment practices

- Improvements in the internal **risk management** of market and liquidity risks

- Market **structure** is essential

- **Bailouts** for financial institutions must **not** become **common practice**
  - Government intervention for rescuing financial institutions must be costly for the rescued and carefully considered (moral hazard problem)

- **Structured products** and credit derivatives do have significant **benefits**

Lessons Learned: Any? - Well: Some …

Consequences for the Financial System

- **Crises** are a **natural** consequence of a free market economy

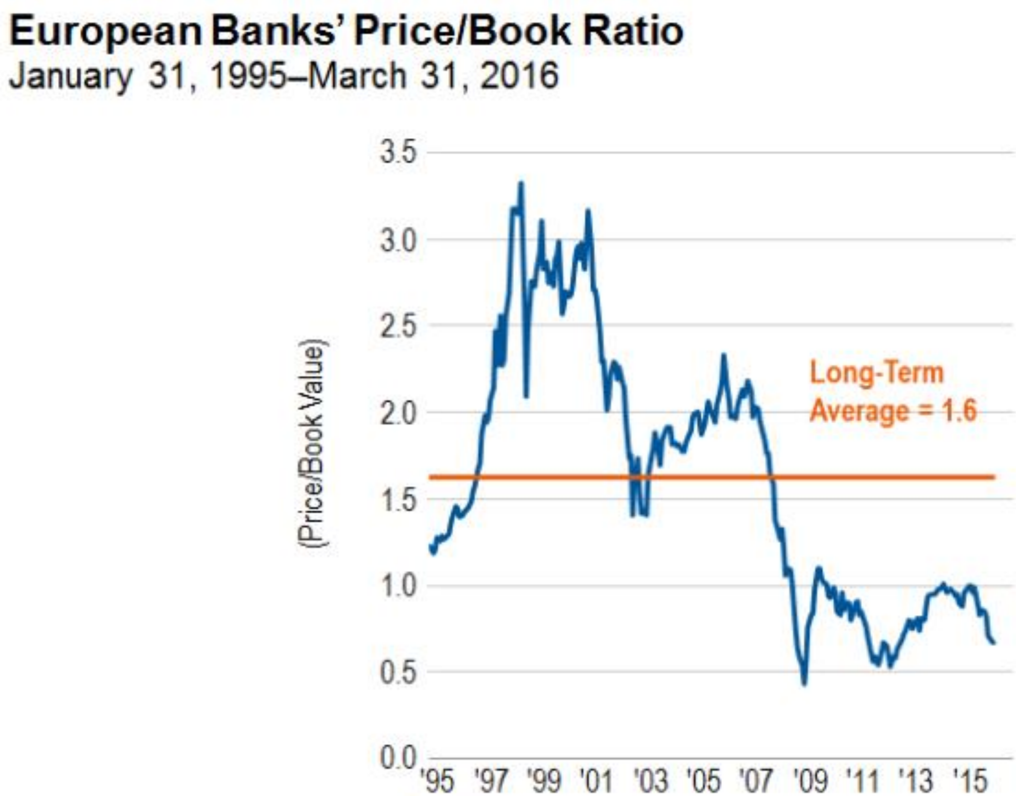
- **Free markets** in combination with human psychology („animal spirits“) **cause bubbles**

- Bubbles and crises are system inherent

- **Interconnectedness** and resulting domino effects cause systemic (“too-big-to-fail”, “too-important-to-fail”) risk:
  - State authorities are compelled to fulfill the role of a re-insurer
  - Systemic risk and the associated costs have to be internalized

- **Regulators have to provide an appropriate framework**

The Long Way to Full Recovery



Sources: FactSet, MSCI. See www.franklintempletondatasources.com for additional data provider information. European banks are respresented by the MSCI European Banks Index. Indexes are unmanaged, and one cannot invest directly in an index. They do not reflect any fees, expenses or sales charges. Past performance is not an indicator or a guarantee of future performance..

For an individual company, the price-to-book (P/B) ratio is the current share price divided by a company's book value (or net worth) per share. For an index, the P/B ratio is the weighted average of the price/book ratios of all the stocks in the index.

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