The Financial Crises of the 21st Century

Workshop of the Austrian Research Association
(Österreichische Forschungsgemeinschaft)

18. - 19. 10. 2012

The Crisis of 2007/2008

Dr. Martin Summer[1]
Head Economic Studies Division
Österreichische Nationalbank (OeNB)
martin.summer@oenb.at

[1]Disclaimer: The views expressed in this presentation are the views of the author and do not necessarily reflect the views of OeNB.

Overview of the Talk

Introduction

The anatomy of financial crises

Why was the 2007/2008 financial crisis felt globally?

Conclusions

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The two most popular competing narratives of the financial crisis

- The market failure story
- The government failure story

Why are both narratives unsatisfactory?

- There is a too narrow focus on the US housing market and a neglect of systemic risk problems.
- Both narratives are mainly motivated by idologies in which either "the market" or the "the government" has to be the culprit. They fail in understanding and analyzing the complex entanglement of both markets and the public sector and the role of this interaction in the build up and the escalation of the crisis.

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An overview of my story of the crisis of 2007/2008

- The financial crisis of 2007/2008 can be economically understood as a typical example of a leverage cycle and a private sector debt crisis.
- What seems to be special in this crisis is its depth and scope. To understand this some specific aspects of this leverage cycle have to be looked at in more detail. Specifically we need to understand:
  - incentive problems in securitization
  - failures in supervision
  - the negelect of systemic risk issues in financial regulation
  - the lack of crisis management instruments.

Some Finance Jargon: What is meant by Leverage?

Assume somebody buys a house worth 100 with a loan using the house as collateral. If under current market conditions it is possible to borrow 80 and make a downpayment of 20 for this purchase we say that

- the loan to value ratio is 80%
- the margin is 20%
- the collateral rate is 125%
- the leverage is 5

These are all different ways of saying the same thing. The leverage is 5 because the downpayment of 20 has been multiplied by 5 in the 100 value of the house. When we talk of leverage we are talking of leverage on new loans.

The Anatomy of Financial Crisis I: Boom

- Most financial crisis begin in “good” times.
- Lower volatility and optimism relax restrictions for debt finance. In this climate lenders begin to consider higher leverage acceptable.

The anatomy of financial crisis II: Boom

- Relaxed access to credit induces a boom of asset values which serve as collateral.
- At the peak of the boom assets are both highly valued and highly concentrated in the hands of individuals and institutions who were riding the leveraged boom most aggressively.

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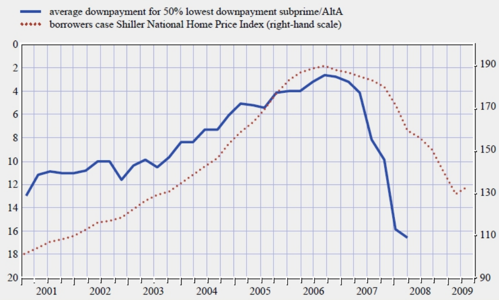
The anatomy of financial crisis III: Bust

- At some stage the boom stalls and a turn in the boom trend of asset values occurs.
- Lenders get nervous and ask for higher margins. Credit supply recedes.
- Individuals and institutions who are most leveraged are the first to face distress. They are forced to sell assets who need to find buyers who value them less.
- The "levers" which fired the boom now kick in also on the way down and accelerate the bust.
- The high stocks of old debt and the restricted supply of new credit hit the real economy, lead into recession and feed the bust. The finances of the public sector detriorate.

A picture from Geanakoplos 2010



Source: John Geanakoplos: What's missing from Macroeconomics: Endogenous Leverage and Default, Cowles Foundation Discussion Paper No. 1332, 2011.

Factors that lead to a global impact of the 2007/2008 crisis

- Feedback between US housing boom and securitization: An exponentiated leverage cycle.
- Incentive Problems in securitization
- Failures in supervision
- Neglect of systemic risk
- Failure of crisis resolution instruments and institutions

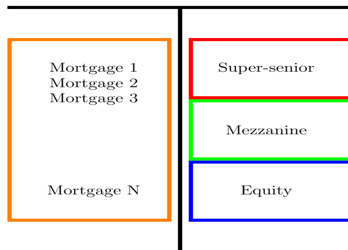
Risks in real estate finance

The sources of risks in real estate finance stem from

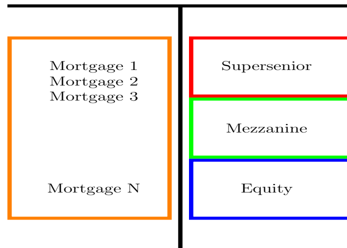
- Longevity of real estate
- Size of the investment
- Refinancing risk
- Valuation risk

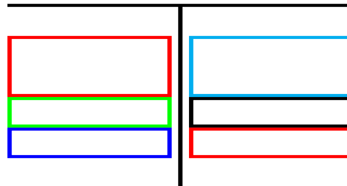
Someone has to bear these risks. In principle this can be either the banks, the bank borrowers or somebody else.

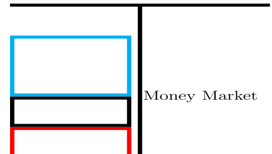
The idea behind the securitization of mortgages



Securitization and the exponentiation of leverage







Securitization and double leverage cycle

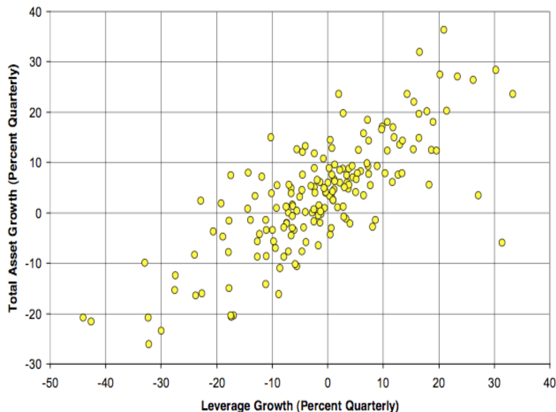
- Securitization piled one leverage cycle upon another one.
- There was the housing boom with an increase in the leverage of private households. There was a securitization boom with an increase in leverage of financial institutions.
- The take off coincides with the new opportunities for Wall Street banks to enter the securitization business which had previously been concentrated with Fannie May and Freddie Mac.
- This marked the beginning of severe incentive problems in the securitization business.

Securitization as a pure leverage machine

With the benefit of hindsight we now know that securitization was a pure leverage vehicle for the banking system. The idea of transfering aggregate risks through capital markets to other parties who are more able to bear them did not work. The risks stayed in the financial system.

- Equity tranches were bought by hedge funds looking for high returns
- Mezzanine tranches were bought by investement banks who made new securities like collateralized debt obligations out of them.
- These securities from higher order securitizations were mainly bought by banks in Europe.

Asset Prices and Leverage: Broker Dealers



Source: Tobias Adrian and Hyun Song Shin,Liquidity and Leverage. Journal of Financial Intermediation, 19 (3), pp 418-437, 2010.

Systemic risk I: Undercapitalized Conduits

The house price boom stalled in the summer of 2006. From 2006–2007 house prices in the US dropped by 3.6%, then from the summer of 2007–2008 they dropped by 15.3% and already in the summer of 2007 it was clear that there will be problems in the securitization markets. The risks were assessed as manageable by the authorities at that time. Then two surprises happened

- Extreme downgradings of mortage backed securities and losses at institutions that held these securities.
- The conduits created by US and European banks to buy mortgage backed securities without holding equity had de facto no equity and liabitities consisting of short term money market funds. They had implicit credit lines with their banks and brought them under water.

Trust between banks evaporated and the interbank market practically collapsed.

Systemic risk II: Undercapitalized banks

- Banks had almost no equity beyond the regulatory minimum and were extremely leveraged. They were forced to sell assets to keep regulatory standards and thereby re-enforced the downward spiral in asset prices.
- The system of risk weighted capital adequacy rules led in practice to an extreme undercapitalisation in the banking sector.
- As a percentage of total assets big banks, like UBS had equity as a percentage of total assets of about 2%. The deleveraging factor if assets have to be sold is then at about 50/1.
- Mark to market accounting in this situation re-enforced the difficulties and the dysfunctionality of the market.

Systemic risk III: The lack of crisis intervention instruments

- When the crisis hit authorities were reluctant to close big institutions and decided for bail outs and rescues. In the case of Lehmann the US authorities decided to let Lehmann go into bankruptcy. The consequences of this decision made the previously implicit guarantees explicit and lead to a government guarantee of all financial claims.
- All around the globe the public sector gave guarantees and financial assistance without taking control rights.
- This approach to banking problems increases the costs of the crisis. A write down of losses is postponed and a debt overhang results.

Conclusions

- The crisis of 2007/2008 can be understood as a double leverage cycle in housing and securitisation. The securitisation business was interpreted according to textbook wisdoms. The fact that risk were not transferred but that leverage within the financial sector just balooned was not recognized.
- Systemic risk stemming from the shadow banking system, deleveraging, dysfunctional marktes and ill designed financial regulation was not recognized.
- The lack of crisis resolution instruments prolonged and amplified the recession and the debt overhang following the bust.
- While there has been lots of activity in managing the crisis and in preventing a systemic meltdown the structural issues that made the amplifiers so strong remain unresolved.