15-7. The *Subprime* crisis (2007-2008)

The *subprime* crisis started in February 2007, its climax took place in September 2008 when the bankruptcy of the investment bank Lehman Brothers led to a total collapse of the global financial system. In the order of 2 trillion dollars (2.000 billion dollars) had to be injected in the system within a few days for it to recover some stability.

The crisis had as its cause the bursting of a bubble in the housing sector of the United States. When the bubble burst the weakest borrowers, so-called "sub-prime" (being below the high quality borrower level called "prime"), were the first to default on the monthly payment of their mortgage (loan for purchasing a lodging). Their loans had been pooled, several thousands at a time, to constitute *securities*: large debt instruments that investors could acquire just like government bonds, i.e. effectively be the new substitute lenders of these borrowers.

The popular interpretation of the *subprime* crisis is that it is due to fraud. Although fraud played a role in the crisis, the most prominent sources of it were 1) greed in the lending industry; 2) incompetence in the understanding of the underlying financial and economic mechanisms; 3) ideological bias in the housing policies of the United States.

1) Greed in the lending sector

An explanation of securitisation

- Corporations like to acquire securities as reserves as they are *off-balance sheet* (they supposedly have no impact on the financial health of the company)
- As for the issuer any future responsibility about the loans securitised has been removed, returns can be accounted for immediately as "gains on sales":
- MBS: *Mortgage-backed security*, a security made by aggregating a large number of *prime* loans
- ABS: *Asset-backed security*, a security made by aggregating a large number of loans of different natures; these may be *subprime* loans

- CDO: *Collateralised Debt Obligation*, a security composed of about 100 "tranches" (certificates) extracted from different ABSs
- When everything works fine, there is overvaluation of the risk premium: the investor benefits from "risk arbitration", that the premium was perceived while the risk did not materialise
- Securitisation implies an unwarranted extension of the insurance principle: 1) it relies on a multitude of poorly capitalised investors; 2) as part of the business cycle an undervaluation of risk is bound to follow an overvaluation
- "Structuring" a security: assuming maximum potential loss as 4.5 times the worst observed historical case; rating agencies act as "structurers"
- Securities are reinforced through "credit enhancement": insurance, credit letters, "subordination": a cushion made out of so-called "residuals" (loans acting as a reserve fund), "overcollateralisation"

<u>So-called "predatory lending":</u>

- On top of the risk premium, the lender charges a *subprime* loan a rate 3% to 6% higher than a *prime* loan
- The so-called "filing fee" may represent up to 10% of the loan amount
- The "yield spread premium": the broker gets a commission on the excess rate that he manages to obtain from the borrower (let's say a normal rate for a particular borrower is 6%; the broker manages to convince the borrower to pay instead 8%; he or she then receives a portion of the 2% [8% - 6%] excess rate)
- "Prepayment penalties": if the borrower reimburses his loan early he or she has to pay a penalty (this is in order to raise the value of the loan when securitised by reducing the variability of payments feeding the security)
- "Teaser" rates: these are promotional rates applying to the first years of a mortgage and aimed at enticing a borrower. As these rates are a source of confusion the legislator made it compulsory that a borrower is also communicated the *Annual Percentage Rate* of his loan which shows the true rate being paid over the lifetime of the mortgage (all fees paid being included in the overall calculation)

- “Single premium insurance” for loans with Loan to Value > 80%; this is a downright swindle as LTV drops below 80% in any case after 6 years or so of payments
- 125% LTV: the loan represents 125% of the house’s selling price
- Negative equity loans (”pay option ARM”) – as the monthly payments are even lower than the interest payments, the loan amount accrues month after month

<u>The North Carolina law (1999)</u>

Were expressly banned in that state:

- The “single premium insurance”
- “Prepayment penalties” for loans < $150.000
- All “high cost loans”
- “Interest only” mortgages
- “Negative equity” mortgages
- That a third party is paying for the mortgage’s fees (in fact, a charity “subsidised” by the house’s seller; the selling price is then effectively lower than claimed in the mortgage’s application)
- To ignore the borrower’s circumstances and count only on appreciation of the house’s value

Counselling is offered to “underprivileged” borrowers

<u>The Mortgage Bankers Association (MBA)</u>

- Invests heavily in lobbying to prevent that other states adopt the North Carolina law
- Funds studies stressing that a North Carolina-type law amounts to racial discrimination (actually there were more loans awarded to minorities in North Carolina than in neighbouring states)

2) Incompetence

- Edward Gramlich, who was on the Board of Governors of the Federal Reserve warned about the looming crisis Alan Greenspan who was at the time Chairman of the Fed. Greenspan replied that nothing could be done about bubbles and that markets were self-regulating anyway (Edward Gramlich, *Subprime mortgages. America's latest boom and bust*, 2007).
- Refet Gurkaynak who was part of the team of researchers around Greenspan wrote a paper (*Economic tests of asset price bubbles*, 2005), where he claimed that no such test can be devised and that financial bubbles probably do not exist. This was conducive to an atmosphere where there was little incentive to worry about the housing bubble that was developing at the time (http://www.federalreserve.gov/pubs/feds/2005/200504/200504pap.pdf)
- Securitisation was supposed to spread risk but credit-enhancement of securities meant that some of the "certificates" sliced out off these securities were displaying high returns (because subprime borrowers were charged high rates) while they were supposed to be low risk ("AAA"). These high-rate / low risk certificates were kept by banks in their portfolio, concentrating effectively risk.
- Rating agencies had (and still have) flawed risk models. Some of their models are simply wrong, many are too static and won't see change coming, many rely on naïve statistical assumptions. Due to the competition between them the rating agencies would never admit that their models were bad for fear of losing on their market share.

3) Ideological bias

- Mainstream economic theory assumes that financial markets are self-regulating.
- It assumes also that private initiative is necessarily more efficient than government's. The truth is that in 2008 governments had to come to the rescue of businesses which otherwise would have fallen massively into bankruptcy.
- The governance of the real estate lending industry was entrusted to the *Government-Sponsored Entities*: "Fannie Mae" and "Freddie Mac", but these were torn between the conflicting goals of serving public interest and achieving the highest returns for their investors. After the 2008 collapse, the GSEs were effectively nationalised.

4) Fraud

- The inherent swindling of "predatory loans" hardly required that fraud would come on top: the "ordinary" working of the industry was a sufficient scam by itself.
- Because of the housing bubble background of the early 2000s, lenders were commercially justified to focus on the house's value and pay little attention to the borrower's own financial circumstances, allowing fraud in application files. But nobody thought about the fact that if a large number of houses were simultaneously repossessed and put back on the market their price would plummet.

5) Other factors

- United States mortgage-backed securities (*prime* essentially) were massively bought by the Chinese, helping thus at maintaining American interest rates low, which would further encourage lending. Why would they do that? To recycle the dollars that were funnelled into the Bank of China's vaults as American citizens were buying China-made goods. The USA and China had here a joint profitable business that was suiting both countries… while it lasted.

6) The dynamics of the crisis

Hyman Minsky (1919-1996) an American Keynesian economist, distinguished three possible statuses for a borrower:

- "covered": being able to make interest payments and refund the principal (loan amount) – this corresponds to the traditional (since 1933) American amortizing 30 year fixed-rate mortgage
- "speculative": being able only to make the interest payments – corresponds to "interest only" loans; to "investor" loans, also called "no-doc", also "liar loans"

- “Ponzi”: doesn’t even have the money to make the interest payments – corresponds to “pay option ARM” (ARM = “adjusted [floating] rate mortgage”) = negative amortization

2006: real estate prices stagnate, the Ponzi borrower had to refinance his mortgage constantly (to take advantage of the price of his house rising with the real estate bubble) to simply pay the interest; he is now out

2007: real estate prices drop, the speculative borrower is now out; the investor rents his property but the money he gets by now from rent (too much competition by now between landlords) is lower than the mortgage monthly payment he has to pay

Many homeowners are now “underwater”: the loan amount still to be reimbursed is higher than the house’s market value

7) Chronology of the crisis

February 2007: drop in the price of ABSs containing *subprime* mortgages

July 2007: paralysis of interbank lending; banks have stopped trusting each other (nobody knows how many *subprime* loans are contained in the others’ portfolio)

March 2008: Bear Stearns, N°5 American investment bank files for bankruptcy

September 2008:

- On the 14th, Merrill Lynch, N°3 American investment bank is absorbed by commercial bank Bank of America
- On the 15th, Lehman Brothers, N°4 American investment bank files for bankruptcy
- On the 16th, AIG, N°1 American insurance company is bailed-out through government intervention
- On the 18th, *money markets* “break the buck”: on this market for short-term debt instruments, a dollar is by now worth less than a dollar