Accounting and Auditing & the Financial Crisis

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Objective

• Explore the roles of accounting & auditing in the recent financial crisis

• Gain insights into contemporaneous
  • Accounting & financial reporting
  • Auditing practice
Outline

• The sources of the financial crisis
• Subprime securities
• The crisis
• Fair value’s contribution
• Roles of accounting & auditing in the crisis
• Divergent perspectives on standards
Sources of the financial crisis

• Rajan (2010) analyzes & explains the crisis
  • US domestic political stresses
    • Income inequality
      • Unemployment
      • Lack of a safety net
      • Willingness to stimulate to reduce unemployment
    • Push for home ownership
      • Creation of Fannie Mae & Freddie Mac
  • In early 2000 the dot.com bubble burst & US firms cut back on investment
    • Federal Reserve cuts interest rates sharply, corporations do not respond
    • With reductions in interest US consumers buy houses leading to higher house prices & a surge in investment in houses
Sources of the financial crisis

• Export-dependent developing countries drawn into financing the US where stimulus had created enormous demand for goods & services *especially home construction*

  • Flowed into “safe” securities issued by government-sponsored agencies like Fannie Mae & Freddie Mac

• Other foreign private sector funds flowed into “highly rated” subprime mortgage-backed securities
Sources of the financial crisis

• Higher house prices gave US residents ability to keep refinancing into low interest rate mortgages & buying more consumer durables
  • Interest rate increases and stationary or falling house prices would create a problem

• Significant housing demand came from US residents with low credit ratings & impaired credit histories
  • Encouraged by US politicians &
    • Fannie Mae and Freddie Mac

• Brokers originated subprime mortgages & sold to investment banks

• Banks packaged subprime mortgages from different areas, supposedly reducing risk, & issued securities against them

• Securities divided into different classes with different priorities
  • Riskiest subprime securities could be sold to those who could evaluate them & absorb the risk
Sources of the financial crisis

• Banks sold the securities to Fannie Mae & Freddy Mac, pension funds, insurance co.s & banks around the world

• With the high volume, investment banks & rating agencies became less careful
  • What mattered was the borrower’s numerical credit score & the amount of the loan relative to the house value

• Securities based on mortgage packages sliced & diced into new securities whose values were very hard to estimate

• Banks held subprime securities financed by short-term debt
### Slicing & Dicing - Subprime CDO

#### Subprime ABS (or RMBS) Deal*

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
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<tbody>
<tr>
<td>Subprime residential mortgages</td>
<td>AAA bond</td>
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<td>Assets underlying the ABS tranches are subprime residential mortgages</td>
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#### Subprime CDO+

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<td>CDO assets are the liabilities of subprime RMBS deals</td>
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*ABS = Asset-Backed Securities  
* CDO = Collateralized Debt Obligation
Subprime Loans ➞ Subprime Bonds ➞ ABS CDOs ➞ CDO²

Risk Profile of Subprime Mortgage Loans

- **Borrower Credit**
  - Good
  - Bad
- **Borrower Down Payment**
  - Low
  - High

**Subprime Mortgage Loans**

**Subprime Mortgage Bonds**

- AAA: 81%
- AA: 11%
- A: 4%
- BBB: 3%
- BB, NR: 1%, not in all deals

**High Grade ABS CDO**

- Senior AAA: 88%
- Junior AAA: 5%
- AA: 3%
- A: 2%
- BBB: 1%
- NR: 1%

**Mezz ABS CDO**

- Senior AAA: 62%
- Junior AAA: 14%
- AA: 8%
- A: 6%
- BBB: 6%
- NR: 4%

Other credit support: Excess Spread, Over-collateralization

**CDO²**

- Senior AAA: 60%
- Junior AAA: 27%
- AA: 4%
- A: 3%
- BBB: 3%
- NR: 2%

Other credit support: Excess Spread
Discounted Cash Flows of CDO vs. CNL of Underlying Mortgages

...the senior CDO tranche falls off a cliff

Cumulative Net Losses on Underlying Subprime Mortgages
Difficult to value ABS CDO

- If ABS CDO has 200 tranches
  - 201 “waterfalls” in its collateral pool
  - Have to model all

- Limited availability of market prices to calibrate models

- Market participants couldn’t independently model ABS & CDO tranches & appeared to purchase them based on their (misleading) ratings

- Ratings partially based on credit default swaps bought from firms such as AIG (at low prices) & packaged with the CDOs

- CDO$^2$ and higher level securities had enormous ranges of possible valuations

- Most sub-prime securities not traded, reported at level 2 & 3 FV
  - Impossible for investors (including analysts) to assess
  - And compare
The financial crisis

- The gravy train halted when the Fed raised interest rates & house prices dropped
- Subprime mortgage-backed securities were riskier than expected (less diversification) & their value plummeted
- Surprisingly banks held significant amounts of the securities themselves, financed by short-term debt
  - Important in the crisis
- Given the uncertainty about value of the securities, the short-term creditors refused to refinance the debt as it fell due, generating the crisis
The financial crisis

• In the week of July 16, 2007 Bear Stearns disclosed two of its subprime hedge funds invested in thinly traded CDOs had lost nearly all their value

• On August 1, 2007 investors in the two funds took action against Bear Stearns & its directors & managers

• At this time markets began showing considerable uncertainty about the solvency of banks
3-Month Libor-OIS Spread (bps)

Source: Bloomberg.
What the graph reflects

• 3 month LIBOR is generally a floating rate of financing that fluctuates depending on the lending bank’s assessment of the borrowing bank.

• An overnight indexed swap (OIS) is a swap derived from the overnight rate, which is generally fixed by the local central bank. The OIS allows LIBOR banks to borrow at a fixed rate of interest over the 3 months. In the US the spread is based on the LIBOR Eurodollar rate and the Federal Reserve’s Fed Funds rate.

• LIBOR reflects the risk of the loan to the borrowing bank. The OIS is considered stable as both counter parties only swap the floating rate of interest for the fixed rate of interest. The spread between the two is a measure of the likelihood the borrowing bank will default.

• The two large spikes are about 6 and 10 standard deviations above the average spreads (10bps) experienced in the past.
What the graph reflects

• Lack of knowledge of the extent to which the bank on the other side of the transaction was affected by the subprime crisis

• The uncertainty about the valuation of bank assets did not soon disappear

• Many economists argued that the uncertainty combined with fair value led to an understatement of bank assets

• It is not apparent that conclusion was correct
Role of accounting in the uncertainty in bank valuations

Valuation of subprime securities

- US accounting principles require the movement of *fair value* securities from valuation level 1 (market price) to level 2 (unverifiable) or to level 3 (also unverifiable) based on the nature of the evidence on value.

- Similarly, securities would be moved from level 2 to level 3 based on the nature of the evidence.

- The *discretion* allowed management in these rules combined to produce relatively few write-downs of both fair value & non fair value securities despite the fact that it was highly likely many of those securities’ values were impaired.

- Some hedge funds tried to generate transactions in subprime securities held by banks whose shares the funds had short sold.
Valuation of subprime & other securities

• Dysfunctional use of accounting discretion didn’t soon disappear

  • Huizinga & Laeven (2009) document that in the 2007-2008 period
    • U.S. banks used discretion to continue to overstate distressed assets’ values
    • Banks with large exposures to mortgage-backed securities provisioned less for bad loans

• By the end of 2010 uncertainty about counterparties was reduced
3- Month LIBOR – OIS Spread
Fair value’s contribution

- Delay in recognition of losses & resolution of uncertainty
  - Argument that losses insured – credit default swaps
  - Economists arguing that securities underpriced
  - Economists worried about contagion
  - Multiple valuations
  - Risk managers vs traders
Fair value’s contribution

• Effect on compensation incentives
  • Managers whose performance measures front-end loaded value (FV) had to keep granting mortgages & issuing securities to
    • Increase income & earn bonuses
    • Bank executive’s example at Joint FSF-CGFS financial stability forum, Paris, 2008

• Effect on quality of mortgages & securities
  • Ability to take on more & more low quality mortgages
  • Particularly in 2006 & 2007
An alternative to fair value

• Earlier recognition of losses would have
  • Caused financial institutions to face the problem earlier
  • Limited the real losses
  • Reduced uncertainty about the valuation of bank securities
An alternative to fair value

• Effective accounting anticipates managerial incentives
  • Financial reporting’s evolution suggests conservatism evolved for this reason
  • Beatty & Liao (2011) find reductions in lending during recessionary periods relative to expansionary periods are lower for banks that delay loss recognition less (i.e., for banks that are conservative)
The effects of discretion

- Effective accounting anticipates managerial incentives
  - Bushman & Williams (2009) find
    - No evidence banks in countries allowing higher discretion impound more forward looking information in loan provisions relative to banks in low discretion countries
    - Sensitivity of bank leverage changes to asset volatility changes is lower in high discretion regimes relative to low discretion regimes
    - Banks in high discretion regimes exhibit more risk-shifting relative to banks with less discretion

- They conclude
  - Our results are consistent with discretion degrading transparency of banks and weakening discipline exerted over risk taking
Where did accounting or accountants fail?

• Valuation of mortgages
  • Appear recorded at face value (transaction price)
    • Ex ante a strong possibility of default on many subprime mortgages
    • Perhaps an expectation of government intervention
    • Fannie Mae or Freddie Mac
    • Ex post many transactions were overvalued

• Valuation of mortgage-backed securities
  • Difficult to value especially higher level securities (e.g., CDO & CDO\(^2\))
    • Typically overvalued (ex ante as well as ex post)
    • Risk managers frequently ignored or fired (e.g., Rajan, pp.140-141)
    • Question of government intervention
    • Credit default swaps apparently not questioned
Accounting perspective

• Banking crisis represents problems with
  
  • Overvalued initial transaction prices
    • Similar problems arose with M & A activity & dotcom ipos
  
  • Timely loss recognition
    • Fair value or conservatism
  
  • Role of accounting system in reducing or inflating valuations
    • Fair value or conservatism
Conservatism

• The overvalued mortgage problem is a little like the potentially overstated goodwill problem in the US in the 1920s and in the UK until much more recently.

• If the retained earnings and/or reserves of the acquiring firm were sufficient, goodwill was written off against those items on the grounds that goodwill was not sufficiently verifiable.

• Given the results of Beatty & Liao (2011) and Bushman & Williams (2009) perhaps conservatism should be applied to bank investments considered uncertain.
Did the auditors fail?

- Little evidence auditors questioned mortgage valuations
  - Phone call with FRB’s Susan Bies & staff, Fall, 2005
  - Perhaps auditors believed government agencies would step in
  - Traditional auditors would have been questioning the valuations

- Similar problems with mortgage-backed securities
  - Hearsay evidence of tough meetings with investment bankers
  - Likely the banks used multiple valuations
  - Risk managers’ concerns about valuations (see SEC report)
Did the auditors fail?

• Expect some failures by auditors but the apparent extent of the lack of discipline on subprime valuations seems excessive
  
  • Has fair value had an effect?

• Have the auditors lost control of their firms as Arthur Andersen’s auditors appeared to have done?
Divergent standard-setting perspectives

• **Standard setters & regulators**
  • FASB, SEC, FED perspectives diverge
  • Bank regulators opted out of fair value at least temporarily
  • Beatty & Liao (2011) and Bushman & Williams (2009) results suggest conservatism more effective for bank regulation than forward-looking accounting

• **US & International standard setters**

• **Banks & industrials**