Global Financial Crisis and Regulatory Reforms

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1. Similarity of Japanese and the Global financial Crisis

Origin: Real estate bubble, too much credit to speculative investments in real estate

Expansion: Lost confidence in the soundness in major financial institutions

Japan: successive failure of Sanyo Securities, Hokkaido Takushoku Bank, and Yamaichi Securities in the fall of 1997.

US: successive failure of Lehman Brothers and AIG in September 2008.

Causes of failures of financial institutions

Japan: Bad real estate loans for banks and hidden losses in forward security transactions. Large losses were hidden in unconsolidated subsidiaries.

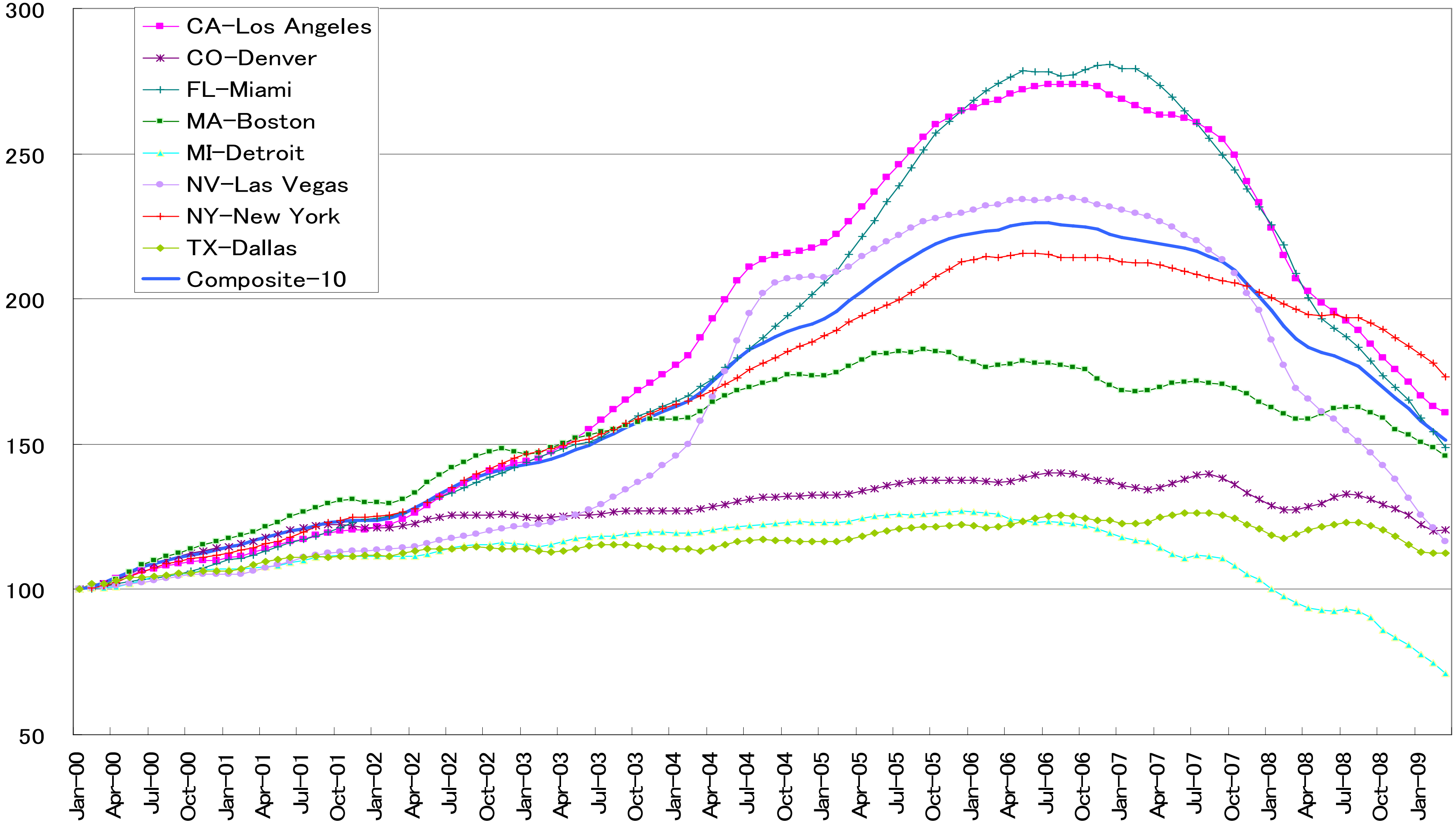
US: Losses in securitized sub-prime mortgages, hidden losses in CDS, hidden losses in unconsolidated SPVs.

Policy reactions

Very similar policy measures: repeated capital injections to major financial institutions, mergers of large financial institutions, expansion of deposit insurance coverage, increased lending by government financial institions.

2. Causes of US Financial Crisis: Falling real estate prices

Case-Shiller Housing Price Index (Jan 2000- March 2008)



3. Causes of US Financial Crisis: Weak Capital Position of Investment Banks

- SEC weakened capital requirements on five major investment banks in 2004.
  Replaced traditional hair-cut rules with VAR based capital requirements.

- Increasing highly leveraged investment strategies with derivatives
  and securitization.
  Increasing popularity of CDS (Credit Default Swaps)
  Securitization of sub-prime loans with SPCs and SPVs

- Increasing use of **prime brokerage** service of investment banks by hedge funds.
  Investment banks could use deposited assets of its customers to raise their funds.
  Customers' assets are not separated form its own assets.
  Lehman customers could not recover their deposited securities after the
  Lehman failure.

4. Causes of US Financial Crisis: Mismanagement of Lehman bankruptcy

- Unexpected failure of Lehman after the rescue of Bear Sterns.
    - Lehman CP kept the highest short-term credit rating

    - The value of Lehman senior debt fell to only 9 cents for 1 dollar.
        - Very very low market value for a supposedly liquid security company.

    - Several MMFs could not maintain par-value due to losses of Lehman CPs.
        - Money moved out from MMFs.

    - Many funds withdrew assets from their prime broker banks.
        - Similar to bank runs.

    - Lehman Japan failed to deliver government banks to their repo transactions.
        - Japanese financial institutions stopped repo transactions with foreign financial institutions.

5. Causes of US Financial Crisis: AIG's near bankruptcy

- AIG (American International Group) was one of Forbs top ten US companies in 2007 and maintained AA rating. Its CPs kept the highest credit rating until the turmoil.

- AIG's near collapse was trigged by its derivative unit in London.

  AIG financial products sold a massive amount of CDS protection and reported a massive profit for the group.

  Some of the sub-prime related CDS protection went sour and AIG's credit rating was down graded. This triggered a collateral requirements for its CDS liabilities to its counterparties.

- Market lost confidence in US financial system after Lehman and AIG cases.

5. CDS risks

- The risk of the sales of CDS protection is much bigger than ordinary interest-rate swaps.

- The counterparty risk is significant. If the seller of protection fails, the buyer will lose the protection.

- Insurance companies and hedge funds are often the ultimate seller of protections. Banks are often the buyer of protections.

- Investment banks functioned as dealers/intermediaries of CDS market.

- Possible call for collaterals from the buyers to the sellers of protection may dry up the cash of financial institutions.

- AIG asked the government to lend them a massive amount of cash that can function as collateral for its CDS transactions.

6. Profit from CDS transactions

- AIG sold a massive amount of CDS protection on high-rated bonds and reported massive profit. AIG sold protection on senior ABS of sub-prime loans and incurred heavy losses.

- AIG underestimated the future cost of sold CDS protections. Theoretically speaking the NPV of CDS fees is equal to the NPV of CDS protection cost. Therefore, AIG should have kept most of the CDS fees as reserves against the future cost. However, AIG recognized most of the fees as profit.

- **All the derivative transactions are zero-sum game.**

CDS protection seller's proft/loss + CDS protection buyer's profit/loss = 0

AIG case implies that the aggregated value of CDS positions of all the market participants may be posive.
Warren Buffett pointed out this problem in early 2003.

7. Warren Buffett predicted a disaster

- Berkshire Hathaway annual report for 2002

- Berkshire bought General Re reinsurance company. This company had a derivative subsidiary, General Re Securities.

  In the unwinding process of General Re securities, Buffett found large undervaluation of derivative liabilities and overvaluation of derivative assets.

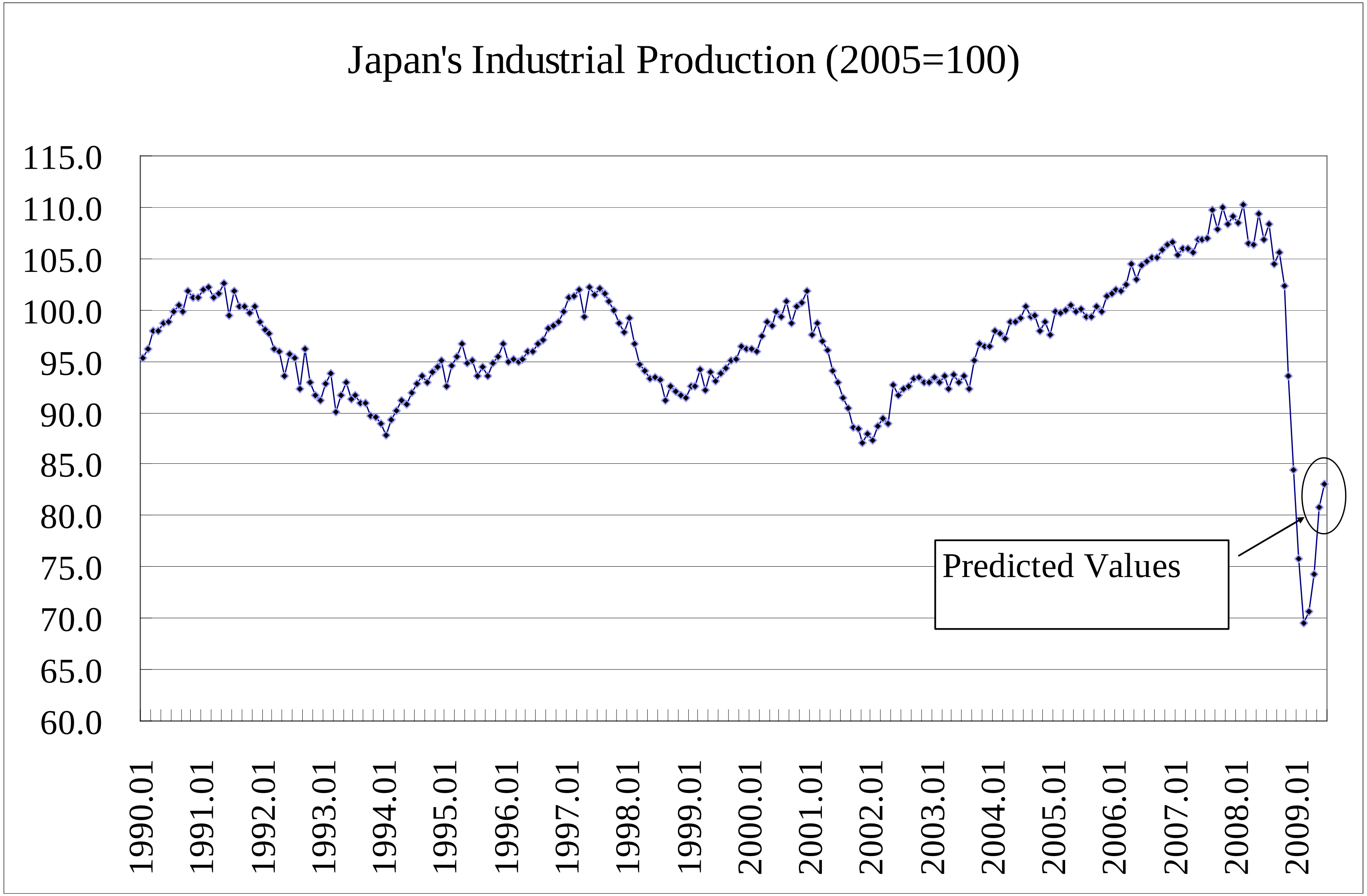
  CEOs and traders have left the company after earning bonuses.

- Valuation of derivative portfolio is not market based but model based.

  Not "mark to market" but "mark to model" and **"mark to myth"**

- The risk of a big margin call in CDS transactions was too big even for AIG to absorbe.

8. The world financial crisis may undermine Japanese financial system



9. Necessary Reforms to improve the quality of financial system

- Apply due diligence of all the major financial institutions without window dressings

  Mark to market of the debts of financial institutions should be avoided.

- The cause of the very high loss-ratio (91%) of Lehman debt should be investigated and the result should be released to the public.

  Yamaichi: 3% loss rate

  Kizu Credit Union: 77% (the worst case in Japan.)

  Nippon Saiken Shinyo Bank: 29%

  Long-term credit bank of Japan: 12%.

- The government should establish a high degree of transparency on the financial statement of major financial institutions

  Full consolidation of all the related parties that a vital for the reputation of the group

- Valuation of derivative transactions should be symmetric

  Wining side + Losing side = Zero?

  In the external audit, substantially all the derivative exposures should be examined.

  Mark to model should become true mark to market valuation.