

Global Focus on Knowledge/Winter Semester 2008

Subprime Loan and Credit Problems

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1. Beginning of Problems

(Cause 1) Due to an excessive loan, an economic bubble emerged in the housing price.

- Market size of American housing loan
 - An excessive financing was conducted since 2000
- Size of subprime loan: there was “NINJA loan” too.
 - Subprime loan of approx. \$1.4 trillion, alternative loan A at about \$1trillion were deemed relatively small compared to the housing loan at \$10 trillion.

(Cause 2) There was an underestimation on risks about an overall credit market.

—In the background of “great moderation” of macroeconomics since the latter half of the 1980s, risk premium and credit sprit in various markets were hugely compressed as market participants “felt excessively secure” due to the enhancement of transparency in financial policies and an ease of credit, and took excessive risks.

—In the process of securitization that was repackaged at each stage, financial products were over-madeup and the borrowing ratio (leverage) of financial institutions was expanded and risks were underestimated.

2. Difference from S&L Crisis

Differences from S&L crisis (the first half of the 1980s—the one of the 1990s):

- (1) this time, the range of elevation in the housing price is remarkably larger:
- (2) Housing loan is securitized (privatized government financial institutions, such as Ginnie Mae, Fannie Mae, Freddie Mac, promoted securitization)
- (3) Shadow banking system has expanded (SIVs, ABCP conduits, etc. in off-balance transactions, hedge funds, private equity finances)
- (4) Further, incorrect credit ratings were done by rating agencies in the process of securitization, and warranty affairs conducted by Monoline insurers engaged in local bonds expanded rapidly.
- (5) Owing to technological innovations in the securitized market since 2004, financial derivatives rapidly enlarged. (Collateralized debt obligation and credit default swap expanded swiftly.)

Composite-sales-model business and expansion in earnings

- American banks take risks as (1) lenders of housing loans, (2) investors, (3) nucleuses of composite sales (securitization traders, sponsors, arrangers, composers, prime brokers).

3. Comparison with Japan's Bubble Era

Comparison with Japan's bubble era:

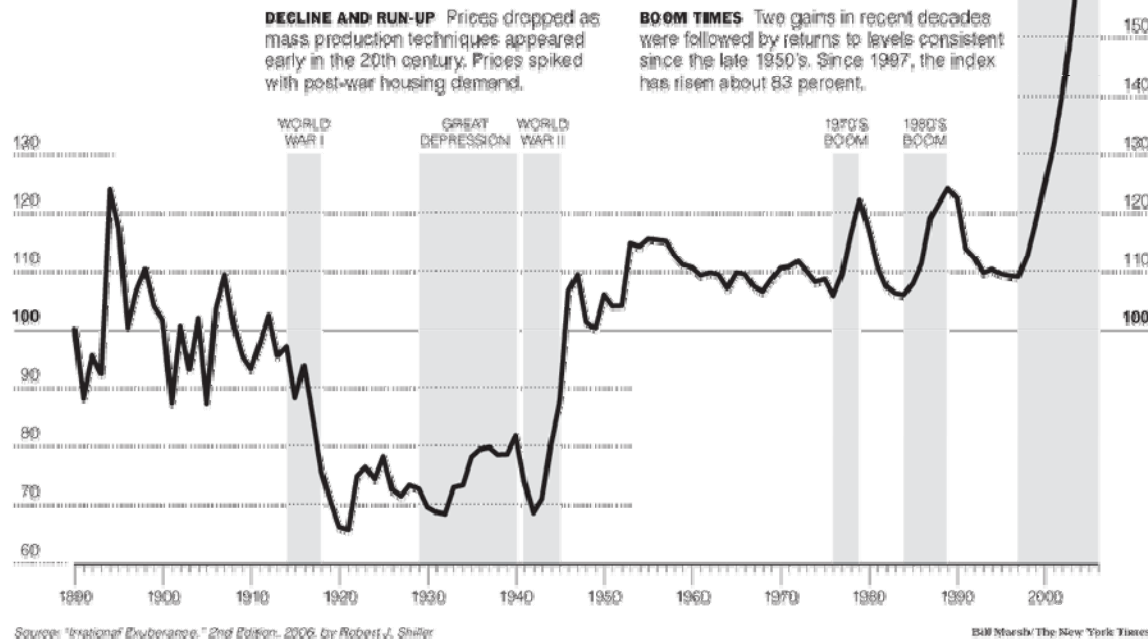
- (1) In terms of commercial land price, the appreciation rate in the U.S. is about half of that in Japan.
- (2) In Japan the size of excessive bank loans was some 30-40% of its GDP while that in the U.S. is about 20-30%.
- (3) Due to the collapse of the land bubble the land price in Japan went down by 60% and it took 15 years before its price bottomed out. How will these be in the U.S.?
- (4) In Japan two kinds of bubbles, stock prices and land prices, emerged and collapsed almost simultaneously (“concurrent bubbles”). In the U.S. despite the collapse of stock prices (IT bubble) housing prices continued to climb (“staggered bubbles with time lag in-between”).

(Chart 1) Transition of Real Housing Prices in U.S.

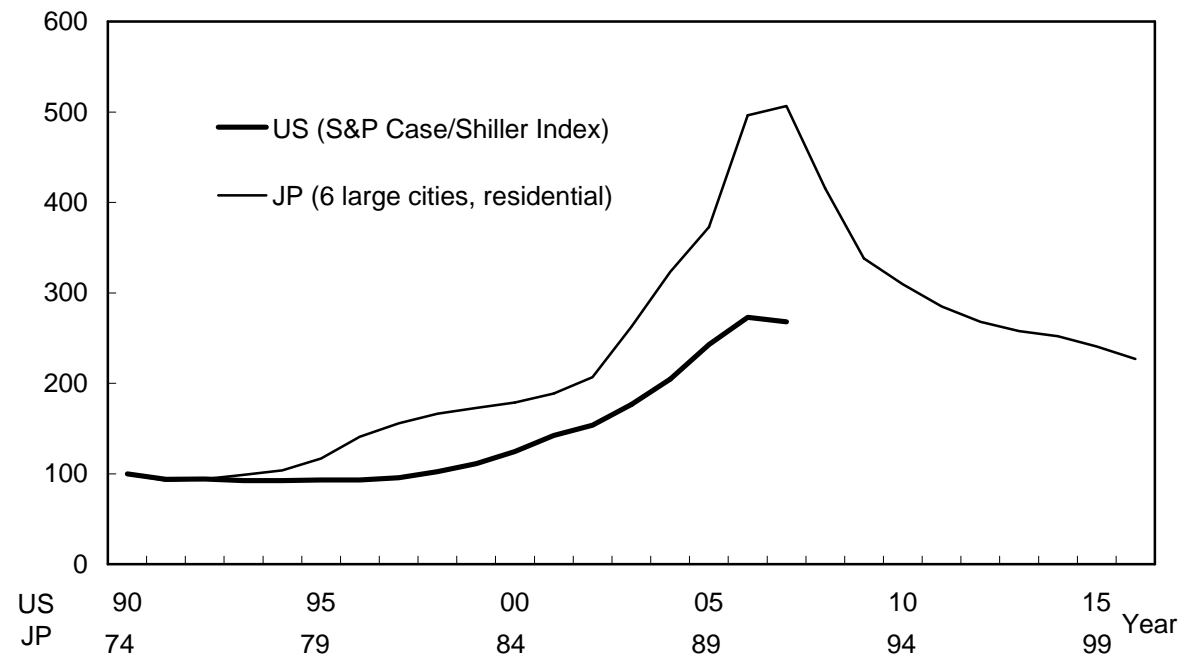
A History of Home Values

The Yale economist Robert J. Shiller created an index of American housing prices going back to 1890. It is based on sale prices of standard existing houses, not new construction, to track the value of housing as an investment over time. It presents housing values in consistent terms over 116 years, factoring out the effects of inflation.

The 1890 benchmark is 100 on the chart. If a standard house sold in 1890 for \$100,000 (inflation-adjusted to today's dollars), an equivalent standard house would have sold for \$66,000 in 1920 (66 on the index scale) and \$199,000 in 2006 (199 on the index scale, or 99 percent higher than 1890).

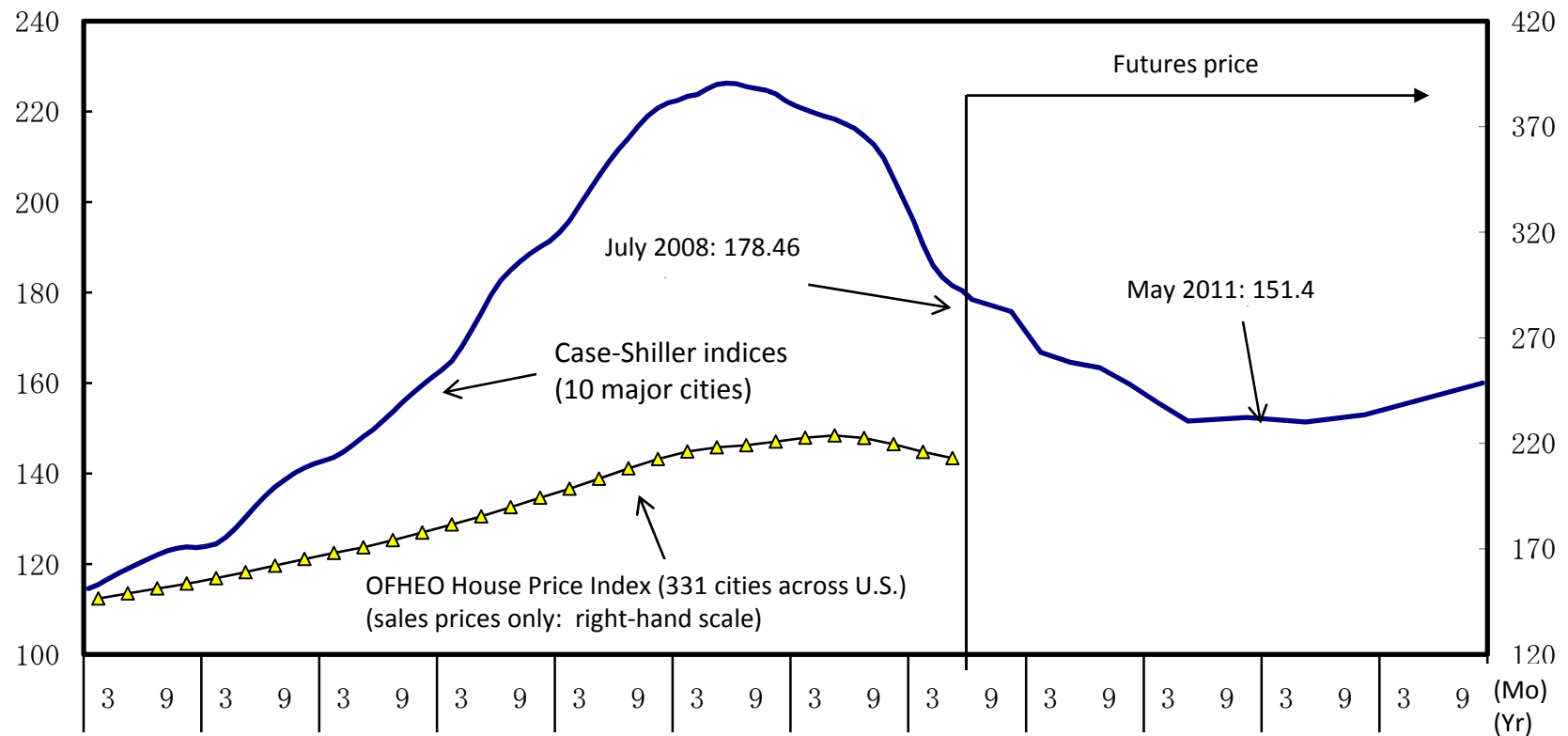


(Chart 2) Housing Prices in U.S. and Land Prices in Japan

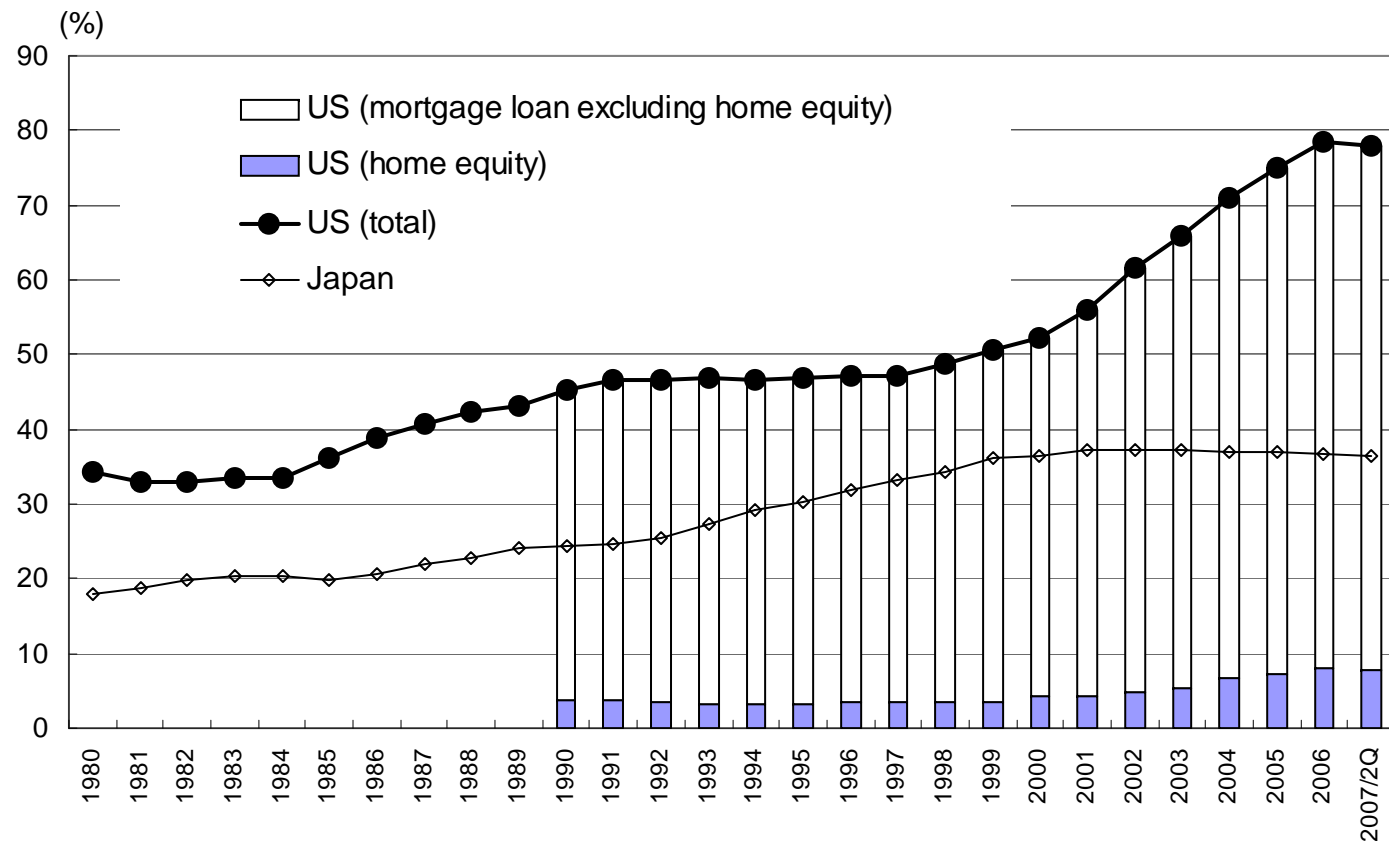


S&P, Japan Real Estate Institute

(Chart 3) Movement of Case-Shiller Home Price Indices

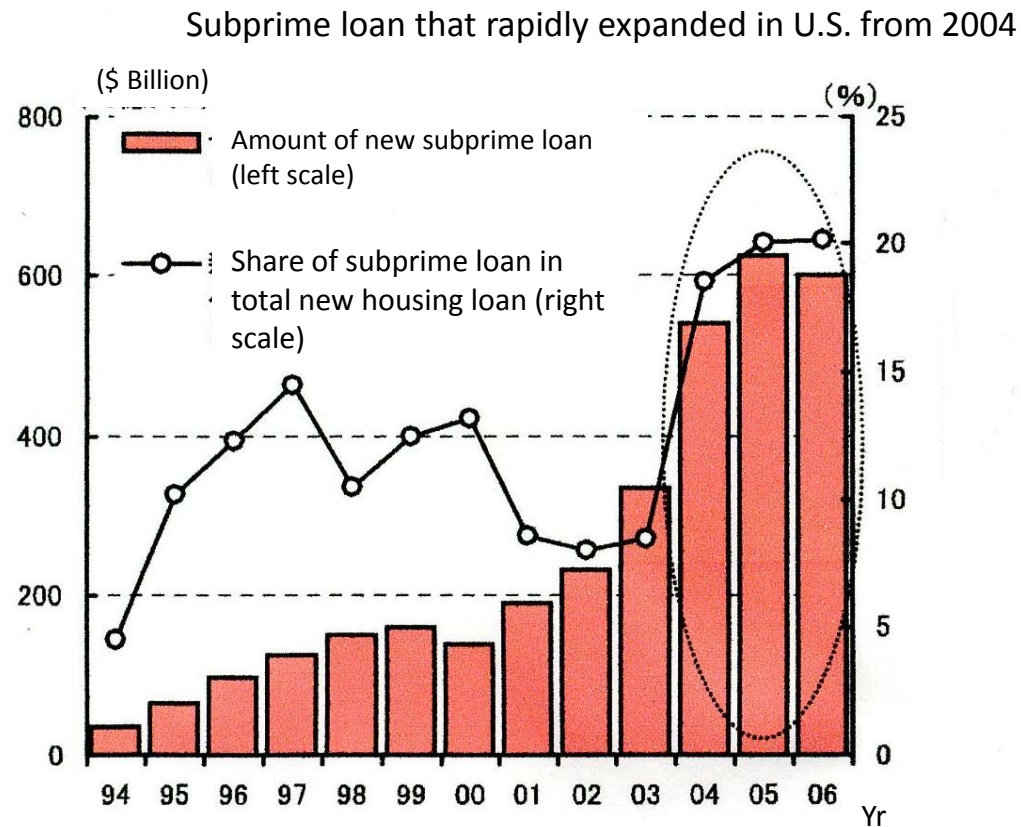


(Chart 4) Ratio of Housing Loan Against GDP



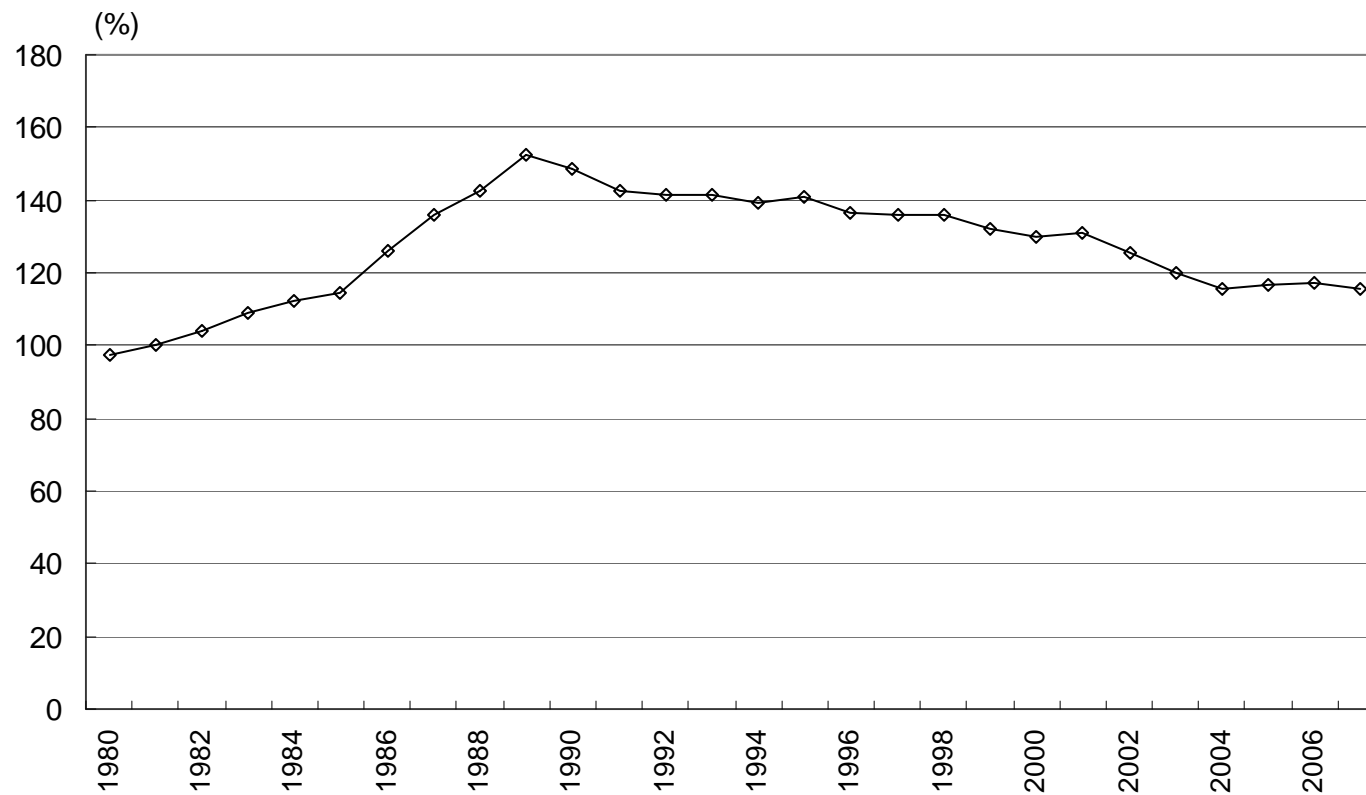
Bank of Japan, FRB

(Chart 5) Expansion of Subprime Loan



(Data) Mortgage Statistical Annual, March 2004 and April 2007,
Inside Mortgage Finance
JSOL

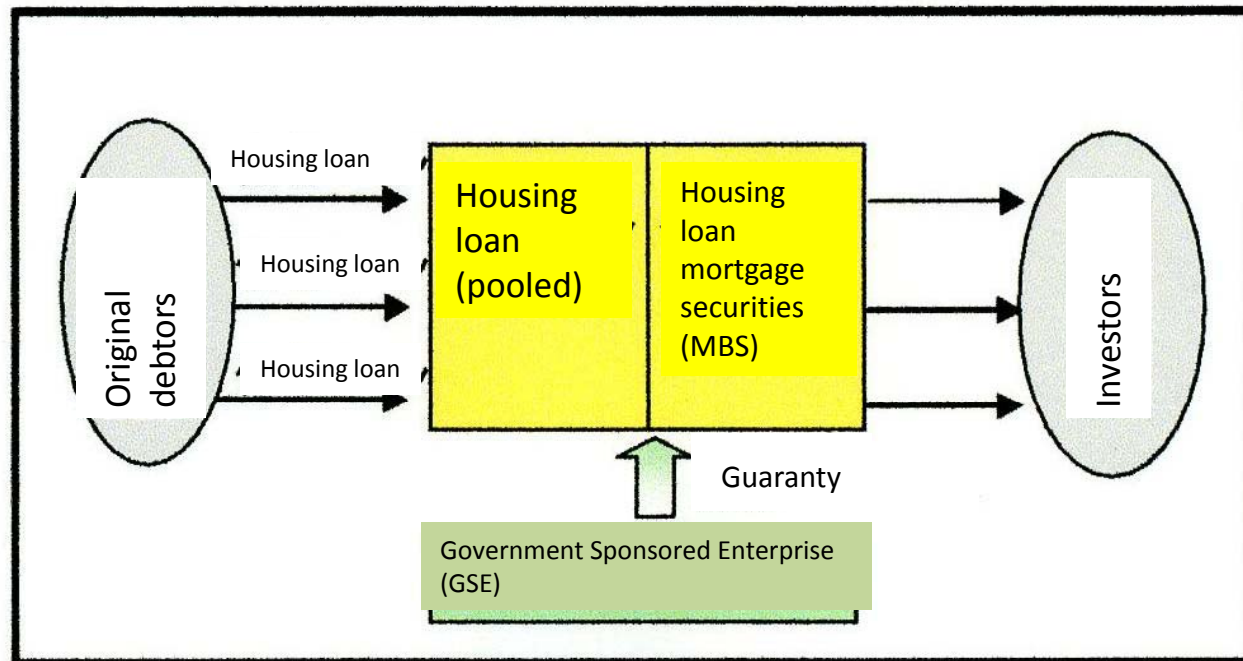
(Chart 6) Ratio of Bank Loans Against GDP (Japan)



Bank of Japan

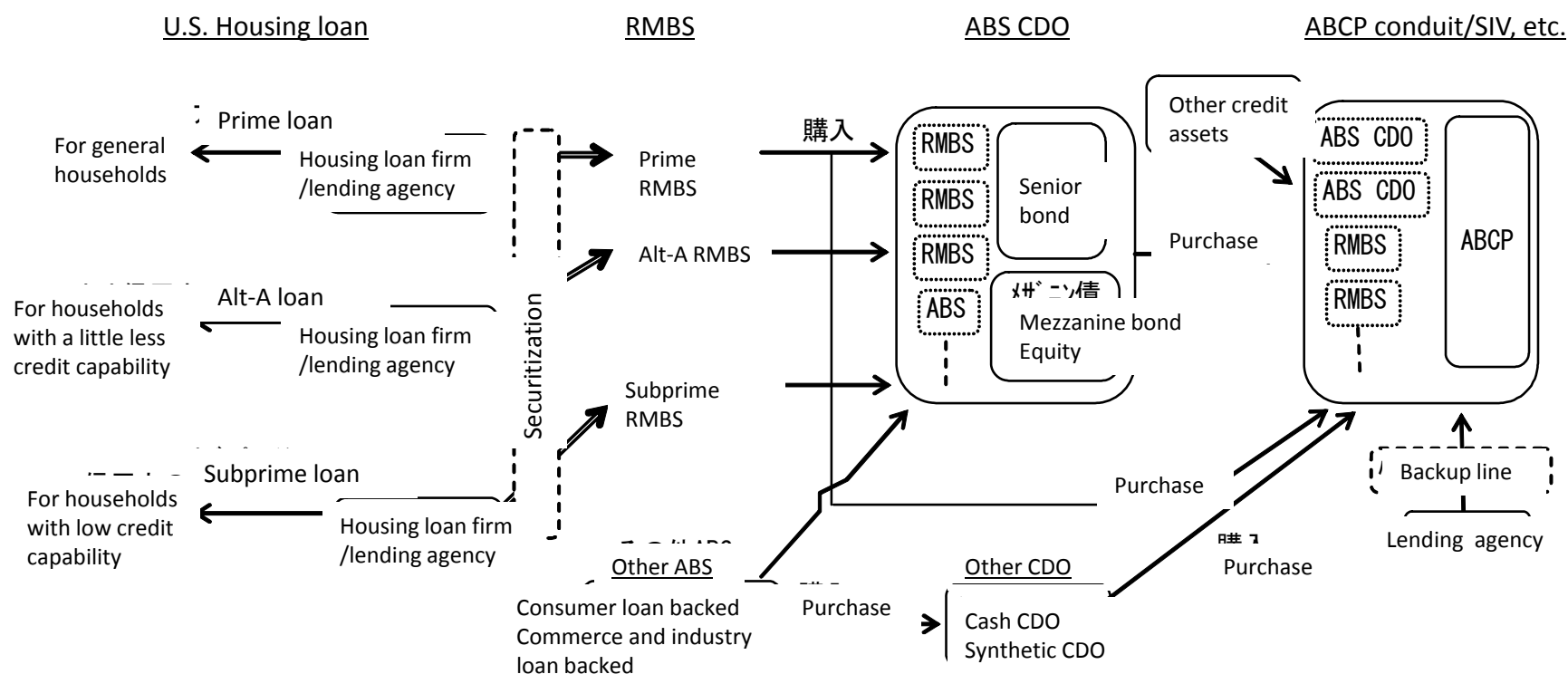
(Chart 7) Structure of Securitization and Role of Government Sponsored Enterprises

Structure of Mortgage-Backed Securities (MBS) in U.S.



(Data) Prepared by Japan Research Institute

(Chart 8) Composite Sales Flow: Shadow Banking System



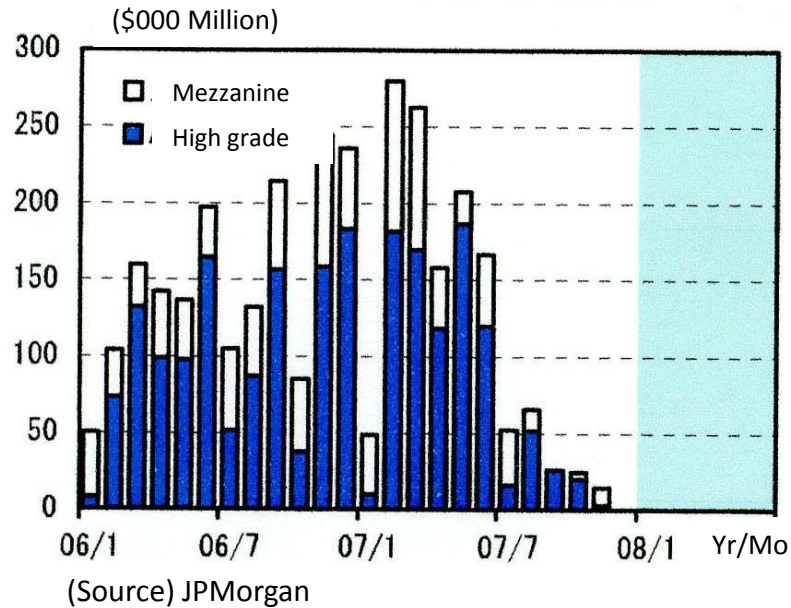
4. Emergence of Crisis

Liquidity crisis in August 2007

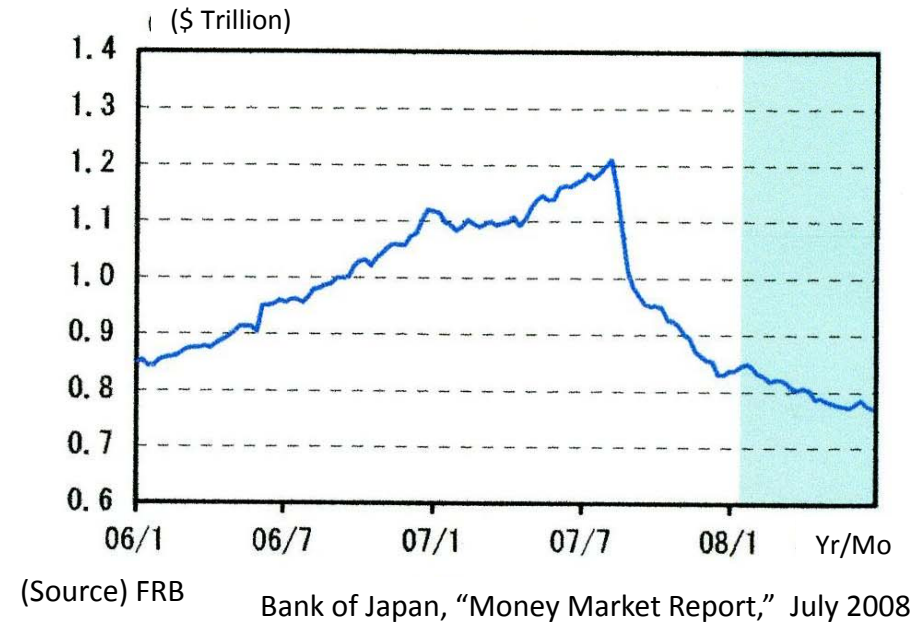
- The American housing price peaked out in summer of 2006; an extent of reduction till September 2008 was about 20% already. In futures market it is forecasted to keep on falling until the early 2010 for an additional 15%.
- The securitization market began to show strange signs in February 2007.
- In August 2007, the ABCP market sharply shrank and refinancing (rollover) became difficult. (Federal Home Loan Banks accepted a great deal of ABCPs during this period.)
- Due to distrust in trading partners, the difference between the interbank offered rate and the interest rate of Treasury bill (TED spread) expanded, which largely exceeded the size of “Japan premium” for 1997-98 (70-100bp). A “black swan” flew into the money market and is flapping the wings now.
- The foreign currency swap market/LBO market turned dysfunctional.
- BNP Paribas suspended business transactions with affiliated funds, and other European institutions confronted with liquidity crises were Germany’s state-run Sachsen LB and Deutsche Industriebank, and Northern Rock Bank in the U.K.

(Chart 9) CDO Market and ABCP Market

(Chart I -2-4) Amount of Issue of U.S. CDO



(Chart I -2-5) Outstanding Issue of U.S. ABCP



(Reference) From Liquidity Crisis to Systemic Risk

From Bank of Japan's home page

Systemic Risk:

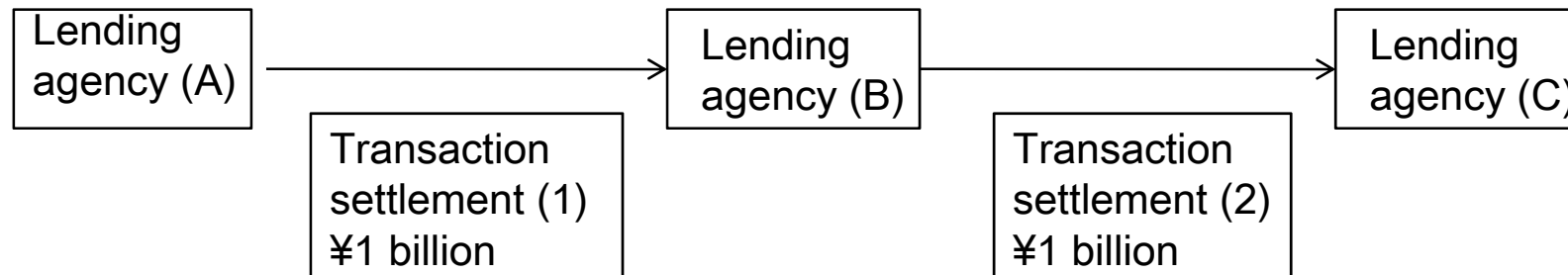
It refers to the risk in which insolvency of an individual financial institution and dysfunction of a specific market or the settlement system spread to other financial institutions, other markets, or the financial system as a whole.

Particularly in the financial system each financial institution is mutually linked like a finely meshed pattern through fund settlements in various transactions and settlement networks. Therefore an effect like insolvency that emerged at one spot involves a risk which spreads in a flash just like domino toppling through the settlement system and market.

(Reference) Example of Systemic Risk: Liquidity Supply as Public Goods

From Bank of Japan's home page

One example of a systemic risk

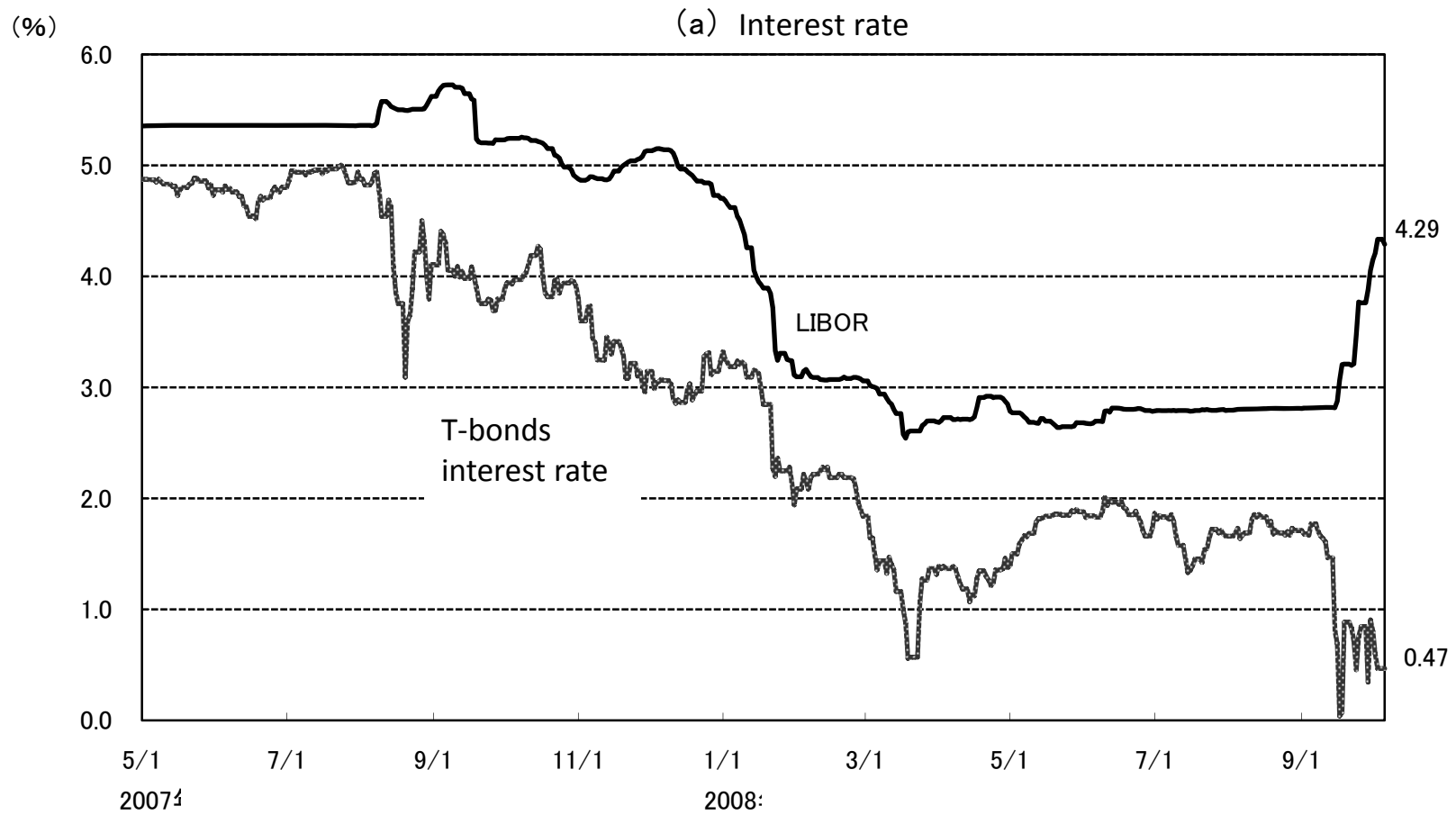


Step 1: (A) became unable to raise funds and to pay a settlement amount of ¥1 billion for the transaction with (B) (nonfulfillment of the transaction settlement (1)).

Step 2: While (B) had planned to apply ¥1 billion to be paid by (A) to paying (C), as the transaction settlement (1) became executory, (B) became unable to pay (C) (nonfulfillment of the transaction settlement (2)).

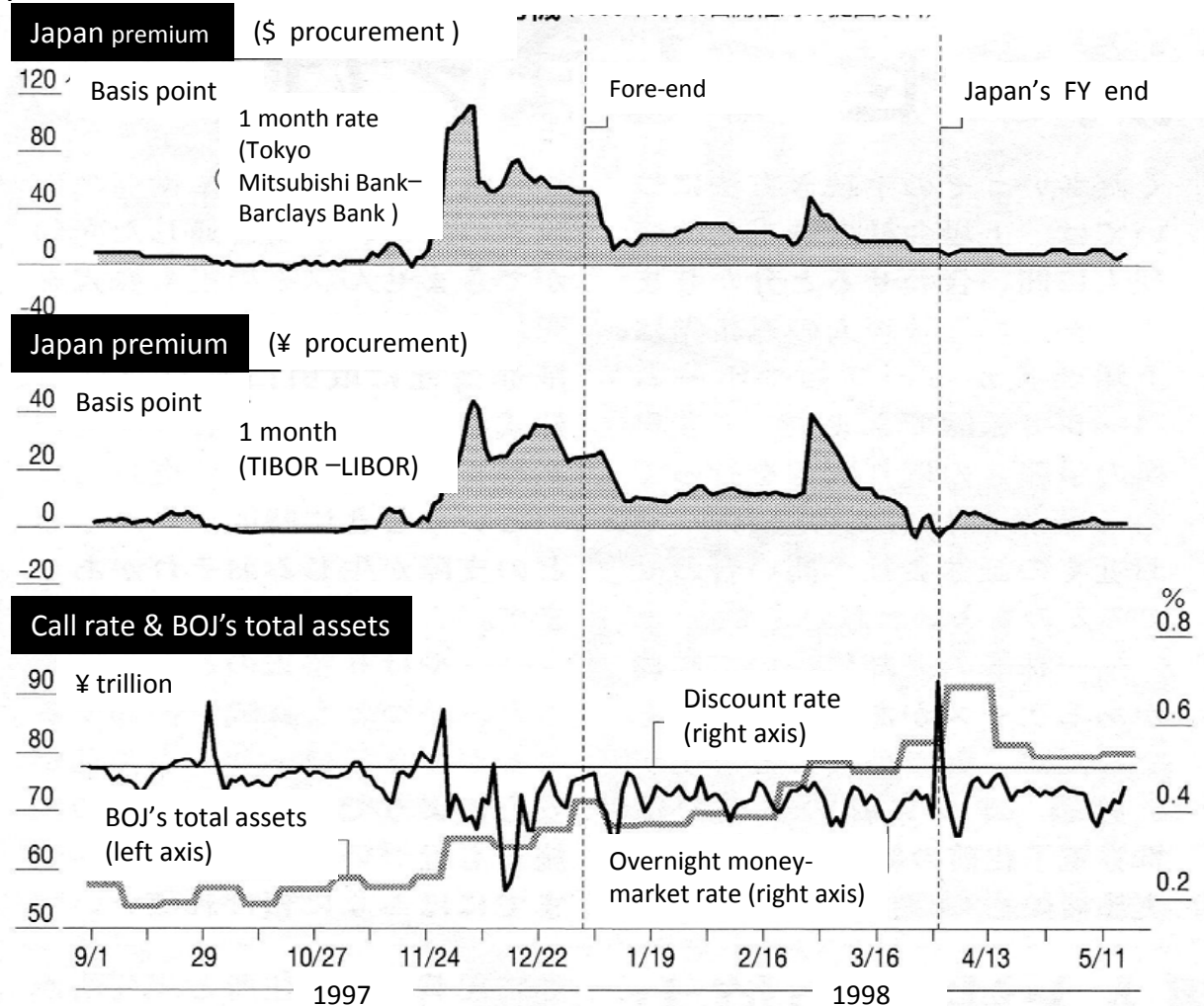
Step 3: These go on meanderingly dragging in other financial institutions (= actualization of the systemic risk).

(Chart 10) TED Spread

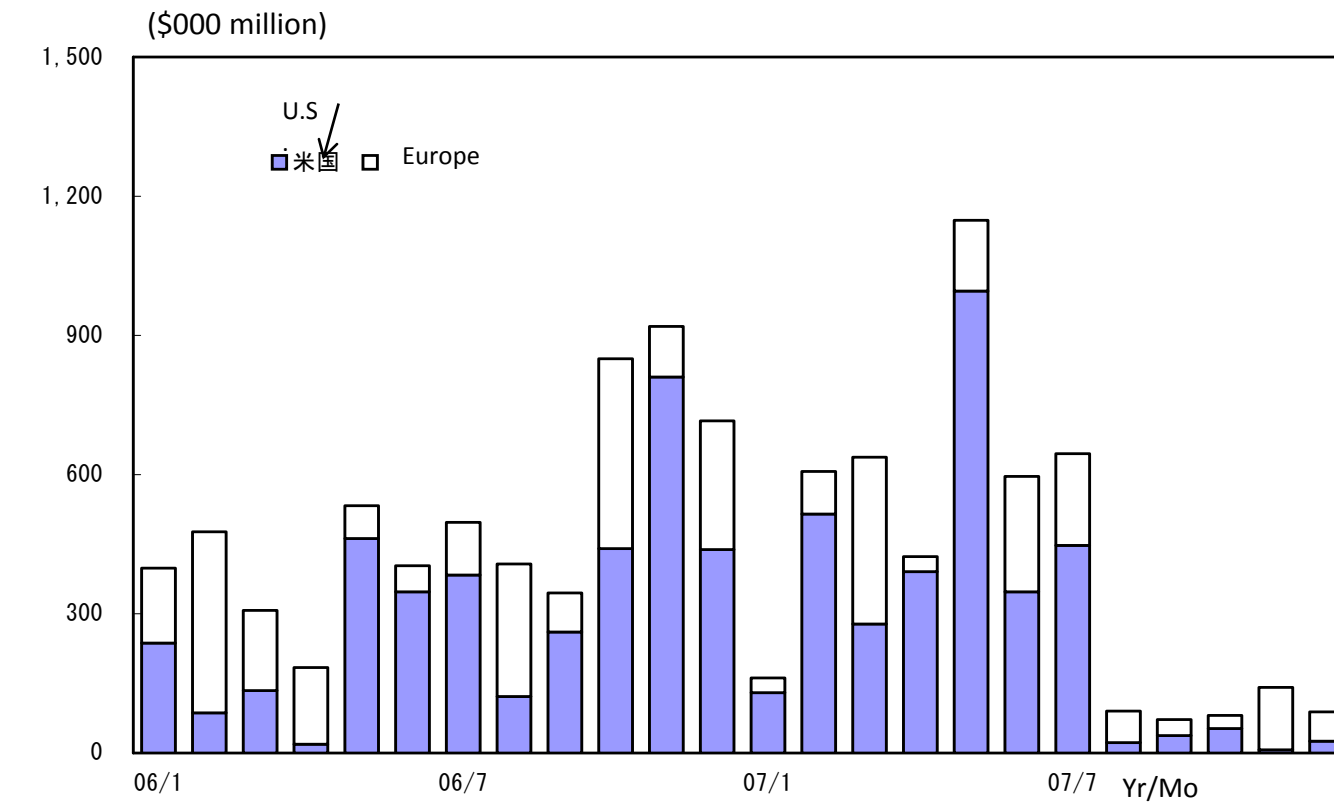


(Chart 11) Japan Premium

Japanese Financial Crisis Discussed in FOMC (data submitted in session on 5/19/1998)



(Chart 12) Transition of LBO



(Source) Thomson Financial

5. Spread of Crises

Extension to credit and securitized products market:

In addition to subprime-related matters, an upswing of arrears in LBO, other housing mortgages and personal loans, worsening of the performance of commercial real estate loans, and falling in prices of securitized products are underway.

About \$1.8 trillion is the size of CDO market that re-securitized securitized products.

Subprime-loan related products are scattered among them. There are cases CDOs get packaged again (CDO Square).

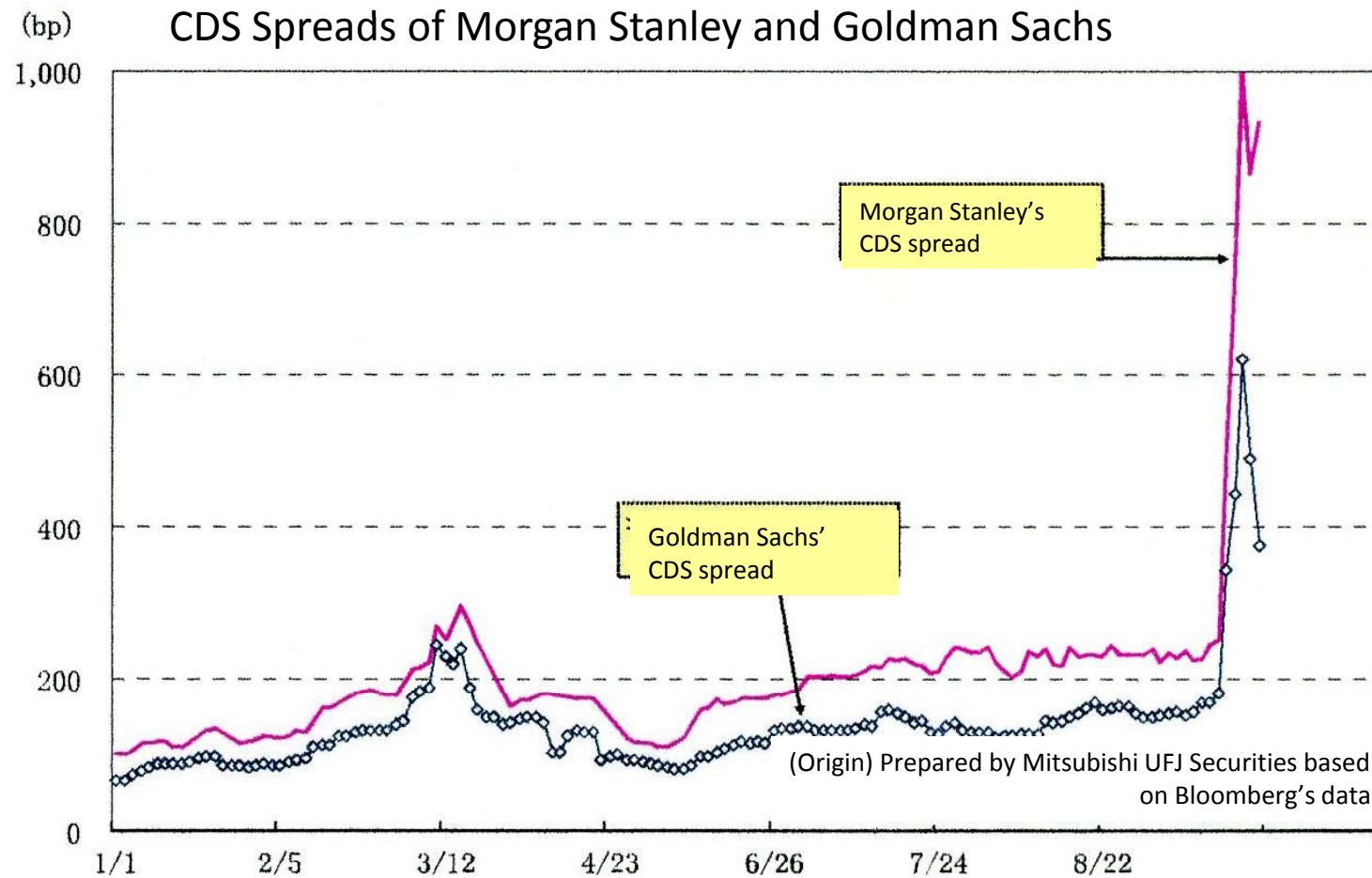
The size of CDS is \$57 trillion.

There is CDS which gets composed of earnings from synthetic CDS into synthetic CDO.

Monoline warranted local bonds.

When local bonds are converted to short-term bonds for sale to MMF, due to downgrading/price fall of short-term bonds caused by downgrading of Monoline, banks being the sponsor are likely to be forced to supply liquidity and inject capital to MMF. Further, ARS warranted by Monoline fails to achieve the bid rate and the interest rate is rising sharply. As for the downgrading of Monoline, banks that insured credit risk are required to increase a “reserve” and the loss on current prices of local bonds will transpires.

(Chart 13) Price of Credit Risk



6. Expansion of Loss

Loss expansion in banking sector/financial institutions:

- At first, Federal Reserve Board estimated the loss of financial institutions at \$100 billion or \$150 billion, while OECD estimated it to be \$300 billion.
- IMF forecasted the loss of banking sector including funds to be \$200 billion at first, subsequently made an upward revision to from \$945 billion to \$1.2 trillion, then to \$1.4 trillion recently.
- Professor Nouriel Roubini of New York University estimated \$1–2 trillion from the beginning.

Capital reinforcement of financial institutions: the increase in capital of \$360 billion out of the loss of \$510 billion, financing by the procurement in market and SWF.

¥117 trillion was the loss of Japanese financial institutions accompanied with write-offs of bad loans. The loss this time is limited compared with financial institutions in Europe and the U.S. (¥2.5 trillion including direct and indirect losses).

(Chart 14) Loss of Financial Institutions (Estimation)

Amount of Loss and Raised Capital

\$ Billion

	Amount of Loss	Amount of Capital Raised	Difference
World	510.4	358.9	151.5
North America	260.5	183.9	76.6
Europe	226.1	153.1	73.0
Asia	23.9	21.9	2.0

(Note) As of Sep. 10, 2008

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