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July 10, 2009
Kuala Lumpur, Malaysia
Memorable Quotes, US Treasury Secretary on Japanese NPL

• “Why don’t Japanese banks _foreclose NPL properties and auction them_. Once the bottom is found, real estate prices have only one way up, and the investors will be happy to purchase them”

– US Treasury Secretary in a private meeting with economists in Tokyo, sometime during the lost decade of Japan
Outline

• Brief overview of the two crises:
  – The US financial crisis of 2008

• Comparison of the two crises
  – Bubble
  – Causes
  – Stages
  – Crisis Management
(1) Overview of the US crisis of 2008-09

- Moral hazard among mortgage originator
  - Lax borrower quality check: NINJA loans
  - Teaser rate for 2 years
- Investment banks creating CDOs, or alchemy of creating AAA out of CCC
  - Wrong assumption about returns from the pool of diversified assets
  - Senior, Mezzanine, equity
- Credit Rating Agency giving AAAs, a conflict of interest
  - Consulting how much is just enough to give AAA
- Opaque accounting of investment banks, its relation to SIV
  - No capital charge for liquidity risk
  - SIV (special investment vehicle) was not consolidated in B/S
- Financial products, too complex to understand, resulting in herd behavior or sudden stop
- Market prices cease to exist as liquidity disappeared
Subprime Loans and Securitization

Origination

Prime Loan
$7.0tril.

Alt-A Loan
$1.2tril.

Subprime Loan
$1.5tril.

Mortgage Bank

Distribution

Investment banks, and Banks

Securitize & Resecuritize

Rating

senior

mezzanine

Equity

ABCPlfinancing

Investors

Banks, Insurance, Pension funds

Hedge funds, MMFs

** Liquidity Support

* Financing

Subprime Loans and Securitization

**Origination**
- Prime Loan
  - $7.0tril.
- Alt-A Loan
  - $1.2tril.
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**Moral Hazard: originate to distribute**

**Distribution**
- Invest in mortgage banks, and Banks
- Securitize & Resecuritize
- Rating
  - senior
  - mezzanine
  - Equity

**Opaque accounting, SIV not on B/S**

**Liquidity Support**

**Investors**
- Banks, Insurance, Pension funds
- Hedge funds, MMFs

**ABCP Financing**

Too complex to understand?


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Alchemy

- How to produce AAA out of CCC
- Imagine a CCC mortgage $X(1)$ with a default probability of $\frac{1}{2}$ next period; similarly $X(2)$. Assume no correlation between prob of default of $X(1)$ and $X(2)$.
- Put $X(1)$ and $X(2)$ into a “pool”, and create a security $Y(\text{senior})$, that claims the first one payment out of the pool. Then the default prob of $Y(\text{senior})$ is $\frac{1}{4}$, instead of $\frac{1}{2}$.
- Just increase the number of Xs in the pool.
- With $\{X(1), X(2), \ldots, X(7)\}$, the default prob of $Y(\text{senior})$ is now less than 1%!
- Credit rating agency was involved in this calculation of producing AAA, rather than being objective, $\rightarrow$ a conflict of interest
Mortgage, securitized

Default prob = 1/2

Mortgage, securitized

Default prob = 1/2
No correlation → default prob of Senior will be \( \frac{1}{4} \).
Positive correlation of 1 → default prob of Senior = \( \frac{1}{2} \)
Negative correlation, -1 → default prob of Senior = 0
Crisis spread from US to the world

- **Liquidity** (cash) needed for withdrawal of funds—a run on “funds” (hedge funds; private equity funds; and mutual funds) based in the US. Not a bank run, but a fund run
- **Fund run** (not bank run). The “funds” sold all the assets to get liquidity (sell equities and other assets around the world; and exchange into the US$)
- **Deleveraging**: When losses happen, capital is lost, and the leverage ratio became higher. In order to lower the leverage ratio, both assets and liabilities were reduced. (Pay back borrowed yen; sell equities around the world)
Results of deleveraging

• yen appreciation,
• euro and emerging market currencies depreciation,
• stock prices decline all over the world,
• oil and commodity prices drop,
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US subprime/alt-A housing markets burst

Damage on US/European financial institutions B/S

De-leveraging: US institutions sell assets abroad and repatriate, US$ ↑

Real side (C and I) decline

US recession

Global spillovers

Mistrust of financial institutions, various spreads ↑

Risk spread ↑ Avoid risk

Globally Stock prices, ↓

Real side (C and I) decline

Re-coupling, globally, exports to US ↓

Global Recession !!
Then, came Lehman Bros. shock

• In March 2008, Bear Stearns was arranged to be acquired by JP Morgan Chase, with FRB guarantee of losses from Bear Stearns assets up to $29 billion.
The financial world went into a panic

- Possibility of domino failures from the Lehman, because assets were frozen
- Financial institutions became skeptical of each other on survivability → all risk spreads skyrocketed
- Buyers of risk assets (e.g. commercial papers; corporate bonds, not to mention Mortgage backed securities) disappeared → no prices
- Evaluation losses of those securities on B/S went up → mark-to-market became difficult
World wide recession

• Finally, consumption of consumer durables—autos and consumer electronics—plummeted
• Production halted
• Layoffs started
• All the negative feedbacks and vicious circle started
• Major economies plunged into negative growth
  – Japan hit hardest
  – Germany hit hard in EU
Crisis management

- TARP created to buy distressed assets
  - No financial institutions wanted to sell assets to TARP
  - Capital injection out of TARP money
    - CitiGroup
    - BankAmerica
- Full guarantees for liabilities of
  - Agency bonds (Freddie Mac, Fannie Mae)
  - Money market mutual funds
- Increase deposit insurance ceiling
- FRB purchases of various risk assets
Now US crisis in the historical perspective

• Compare to Asian Crisis and Japan’s banking crisis
First Parallel
Housing bubble and burst

- Japanese housing bubble (1980s)
  - 3-fold increase in 6 years
  - All gains were lost in the following 12 years

- Is this what will happen in US?
  - More than double in 8 years
  - Fell about 30% from the peak so far (2006:II to 2009:I)
Land price index for housing, Japan
Is US following Japanese footsteps --16 years later
Crisis Mechanism

• Bubble and Burst
  – How bubble was formed and encouraged
    • Starting point, good fundamentals
  – Why did the authorities not take actions
    • No other bad signs like inflation
    • Reason to believe good fundamentals explain a boom
(2A) Overview of the Japan’s banking crisis
Japanese banking crisis

• The Japanese banking crisis of 1997 and “lost decade”
  – Japanese boom and bubble, 1985-89
  – Policy response was too little and too late, the problem kept growing
  – Erupted into 1st banking crisis in 1997
  – Capital injection and a few failures, 1998-99
  – Complacency, 1999-2002
  – 2nd banking crisis, 2002-2003
  – Capital raising, mergers, and restructuring
  – Economy grew again, 2003-2006
Japanese bubble years

- **Strong fundamental, 1983-1989**
  - Weak yen and export boom, 1981-1985
  - Plaza accord: Sharp appreciation of the yen
    - Plaza accord
    - Low oil prices
  - Economic slump due to a sharp appreciation was short-lived
  - **But**, the interest rate was kept low until too late
    - International coordination (?), Louvre Accord
    - Precautionary against the yen appreciation (?)

- **Financial liberalization**
  - Interest rate liberalization
  - Foreign institutions entry
Japanese bubble years

• Sharp increases in stock prices and land prices
  – Initially justifiable by strong fundamentals
  – Probably, sometime around 1987-88, the bubble component became large

• Bank governance failure:
  – Lending standard deteriorated; just collateral
  – Some lending through subsidiaries and nonbanks

• Ample signs of overheating
  – Bank credit growth rate was high
  – CPI inflation was finally rising in 1989, and the interest rate was raised—too little and too late
Japanese banking crisis, Early stage

- The problem started in the weakest financial institution, 1992-1995
  - The Jusen, Housing Loan institution (nonbank)
    - Similarly in Thailand, finance companies
    - Similarly in Korea, merchant banks
  - Crisis spread to credit cooperatives
  - They were not well-supervised
  - Use of public funds proposed but voted down

- Then spread to medium-size institutions
  - 1995, signs of troubles were all over, but
  - “Zombie” firms were kept alive, and getting bigger
Policy Mis-management
Denial

• Banks, afraid of disclosure and restructuring
  – Continue lending believing the land prices will be stabilized=“ever-greening”, avoiding NPL classification
  – Basle Capital Adequacy ratio was becoming low, no room to maneuver
  – Just hope that the land price stops falling

• Regulatory forbearance:
  – No decisive policy decision to force disclosure Non-performing loans (NPL)
  – Arrange rescue mergers, with financial assistance from Deposit Insurance Corporation (DIC)
  – NPL classification was questionable and opaque accounting was allowed—a tacit approval by MOF
    • Similarly in Thailand, Korea, Indonesia
Full blown banking crisis, November 1997

• Sanyo Securities failure
  – Caused “overnight call” default
    • financial institutions became suspicious of each other
    • The call market size shrank

• Hokkaido Takushoku Bank failure
  – One of the Big 20 banks that MOF had said would not be let fail
  – Breaking Government promise
  – “Who’s next?” problem
  – Japan premium to shoot up

• Yamaichi Securities Failure
  – One of the Big Four
  – Hidden losses by “kiting”
  – “Who else is doing that?” problem

• Quite parallel to the Lehman Bros. failure Sept. 2008
Mis-management
Tentative Response to the crisis

- The November 1997 (1st banking) crisis prompted public funds for capital injection
- 1st capital injection, March 1998
  - Not assessing true picture of balance sheet; across the board;
  - Too little, because banks did not want policy intervention
- 2nd capital injection, March 1999
  - Success, since special examination of NPL implemented
  - Japan premium disappeared
- Complacency, 1999-2002
  - Force aggressive writing down NPL
  - But Tax Deferred Assets replaced most of tier I capital
- 2nd Banking crisis, 2002-2003
  - Rumors of weakening of balance sheets of large banks
  - Takenaka shock: No bank is too big to fail
  - Legislation was needed to “temporary nationalize” LTCB and NCB
  - LTCB feared to be too complex to fail, but trades were wound down before government take-over
(2B) Asian crisis, Thailand, causes of crisis

- Large current account deficits (like Mexico)
- Large (short-term) capital inflows
- Banking sector, double mismatch
  - Currency Mismatch
  - Maturity Mismatch
- Financial liberalization, 1994, leading to overheating
- Asset Price Bubble peaked in 1994-95. Asset prices (stock prices and property prices) were already in decline
  - Smaller institutions, finance companies were failing before currency attack
- Currency was attacked by speculators (hedge funds), short-selling
- Once currency was depreciated, it developed into banking crisis
- Confidence was not re-built with the IMF package (Aug 1997) as the forward contracts, disclosed by BOT, was larger than market expectation and IMF package
Overview (Ib) Asian Crisis
Thailand, crisis management

- IMF conditionality (micro)
  - Suspend more Finance companies
    - Pursue “Close and liquidate” but could not be implemented (that was done in Indonesia, with disastrous results)
  - Due diligence of assets (fall 1997), decision December 1997
    - Close insolvent finance companies,
    - Sell assets
  - Bulk sale of distress assets (Feb 1998)

- IMF conditionality (macro)
  - High interest rate
  - Fiscal surpluses (1% of GDP)
  - Both contributed to decline in the real economy
Overview (Ib) Asian Crisis
Thailand, resolution

• Finance companies and smaller banks were taken over by government
  – Socialize private debt
• More banks failed as the economic conditions became worse
• Most external debts were repaid. No defaults of bank liability
• Corporate restructuring needed because banks could not resolve NPLs
Cause: Similarities and Differences

Japan/Asia  US

• Similarities
  – Root Cause, Real Estate Bubble (strong fundamentals invite speculation)
  – Low interest rate
  – Lax Check on borrowers
  – Loan-Value (LV) ratio higher
  – “step up” loan

• Differences
  – Loans kept on banks’ balance sheet
  – Loans held by banks: “evergreening”
  – Current account surpluses

• Similarities
  – Root Cause, Housing Bubble (strong fundamentals invite speculation)
  – Low interest rate
  – Lax check on borrowers
  – LV ratio increased
  – “Teaser rate”

• Differences
  – Securitization (moral hazard “originate to securitize”)
  – Current account deficits, but capital inflows
Root of crisis (1)

• Japan
  – Real Estate Bubble and bursting bubble
    • Both housing and commercial
    • Belief in ever-increasing land prices
    • No check on borrowers because of secure collateral
    • “Step interest rate loan” to ease income constraint
    • Loan to value ratio increased

• US
  – Housing Bubble and bursting bubble
    • Mostly housing
    • Belief in ever-increasing housing prices
    • No check on borrowers because of securitization ⇔ moral hazard (originate “to” distribute)
    • Teaser rate for first two years, time bomb
    • Loan to value ratio increased
Root of Crisis (2) difference

- **Japan/Asia** No securitization
  - Banks kept loans on their balance sheet
  - Losses hid in subsidiary and creating accounting

- **US Securitization**
  - Too complex senior/mezzanine/equity, CDOs
  - Conflict of interest in credit rating
  - Hid in subsidiary: Potential losses in SIV, not on B/S of banks
Failed business models differences

• Japan, commercial banking
  – Housing Loan Companies (Jusen) to fall first
  – Smaller commercial banks failed
  – Several rescue and strategic mergers of large banks

• US, investment banking
  – Large investment bank fell
  – Crisis spread to Fannie and Freddie, MMF, insurance company (AIG), Big 3 auto companies, (and more?)
Crisis Management, common pattern

• Common pattern (S&L, Nordic, Japanese, and now the US)
  – Refuse to recognize (“No problem”)
  – Forbearance, Recognize, but regard it to be a small problem—no action
  – Try to take action, but fail to win public support (“Why tax payer’s money?”)
    • Japan, Jusen resolution
    • US, first votes on TARP
  – Action, but too little, too late
  – Big crisis happens and big action becomes possible
Also in Asia

• US advice to Asia (1997-98)
  – Implicit guarantee by the government of the banking system was one of the sources of the problem. Moral hazard in borrowing too much was caused.
  – “Liquidity support” to banks should be stopped. They may be insolvent. Due diligence is important. Introduce Mark to market accounting.
  – Do not ban short-selling. Hedge funds are good guys providing liquidity. No reason to regulate. If they attack a currency or company, there is good reason
Crisis Management

• Japan
  – Forbearance
    • Jusen problem to all banking system
  – Recognize, try to act, but no public support
    • Defeat of 685 billion yen stop gap
    • Distressed asset purchase—good bank-bad-bank model
  – Act, too little too late
    • Capital injection, No. 1
  – Big crisis, big action
    • Public money injection 40 trillion yen
    • Capital injection N0.2

• US
  – Denial
  – Forbearance
    • (Aug 2007->March 2008)
  – Recognize, try to act, but no public support
    • Bear Stearns rescue
    • Refusal of first TARP in Senate
    • TARP difficulty
  – Act, too little too late
  – Big crisis, big action
    • Change TARP to capital injection
    • Make investment bank to commercial bank (holding company)
  – Still hesitate to nationalize
A series of policy actions

• Japan (1995 – 1997)
  – Blanket deposit guarantee
  – Lax accounting standard on NPL => “evergreening”
  – No action on lack of capital shortage
  – Arrange rescue mergers
  – Blanket deposit guarantee (1995)
  – Capital injection (1998, 1999)
  – Create a legal framework to fail banks (until 1998)
  – Fail life insurance companies
  – Arrange mergers (of smaller institutions)

  – Bail out investment banks
  – FRB buys (almost) any assets, expand B/S
  – Arrange rescue mergers
  – Loss guarantee for distressed assets taken over by rescuing institutions (Bears-JPMorgan)
  – Bail out AIG
  – Explicit guarantee for Freddie and Fannie
  – Deposit guarantee (MMMF) and raise ceiling (FDIC)
  – Stop mark-to-market accounting
Key moments, crisis management

Japan

- November 1997
- Failures of Sanyo Securities, Hokkaido Takushoku Bank, and Yamaichi Securities
  - Sanyo default in the call market
  - Financial institutions become skeptical each other
  - Freeze of the call market
  - Japan premium
- Legal framework was not ready (supervision mistake)

US

- September 2008
- Lehman failure
  - Financial institutions become skeptical each other
  - Freeze of money markets
  - Western Premium
- Legal framework was not ready (Lehman could not be bailed out—really?)
- Failed business model of investment banks (supervision mistake)
Key Moments: deposit guarantee

Japan

• Blanket deposit guarantee, 1995-2003
• Banks reluctant to take it
• Arrange rescue mergers
  – Many regional banks
• Temporary nationalization of banks, 1998-2003
  – LTCB, 1998
  – NCB, 1998
  – Resona, 2003

US

• Deposit guarantee ceiling raised from $100,000 to $250,000, proposed
• Capital injection into banks by the government, fall 2008
• Banks eager to repay
• Arrange rescue mergers
  – Bear and Stearns
  – Bank of America and Merril Lynch
• Nationalization?
  – AIG
Key moments: Capital injection

**Japan**

- Denial of capital injection, Feb 1995
- 685 billion yen to help resolve Jusen companies (small housing finance companies) were denied in the budget process
- Two years later, 40 trillion yen was needed to help large banks
- Capital injection to large banks, March 1998 and March 1999
- Capital injection first resisted by banks for fear of dismissal of management
  - In the end, no management responsibility pursued

**US**

- TARP was first voted down by the House of Representatives
- One week later, TARP was passed
- A few weeks later, an aim of TARP changed from purchasing distressed assets to injecting capital (preferred shares) to large banks
- Capital injection first resisted by banks for fear of dismissal of management
  - In the end, management pay restriction
Policy role: Monetary policy

Japan

• Was monetary policy responsible for creating a bubble?
  – Low interest rate, 1987-89

• Was monetary policy too tight for mitigating the damage from a bursting bubble?
  – Too slow cutting the interest rate, 1992-1999
  – Should BOJ have adopted the ZIRP (maybe 1995?)

US

• Was monetary policy responsible for creating a tech bubble, 93-99?

• FRB learned from the Japanese mistake of bursting a bubble too aggressively, so massive cut in the interest rate 2001-02

• Responsible for creating a housing bubble, 2003-07?
  – Too low interest rate to manage the tech bubble burst?
  – Too slow in increasing the interest rate to prevent the next bubble?

• FRB is again cutting the interest rate very quickly, 2007-2008
• FRB adopted the ZIRP, 0-2.5%.
Regulatory Reform

- Main regulator: MOF $\rightarrow$ FSA
  - 1998

- Main regulator: fragmented $\rightarrow$ FRB
  - Proposed 2009
TARP (Troubled Assets Relief Program)

• Role of Asset Purchase
  – For what?
    • Help banks (if purchase price > market/fair price)
    • Loss cut. Prevent further/future losses
    • To create markets (S&L bulk sales, not this crisis)
  – Who funds it?
    • Banks’ own money (initially in Japan) → no advantage (except for tax) to banks
    • Tax payers’ money → will work but, bad publicity to the voters
  – It is difficult to convince (not failed) banks to sell assets
  – Original TARP failed → PPIP proposed

• Done much forcibly in Asia by IMF
  – Distressed assets separated from failed banks
  – Asset Management Companies operated for several years to sell distressed assets: Thailand, Indonesia, Korea
Will TARP work?
Japanese and Asian experiences

• Easier, faster to do capital injection and/or nationalization, if banks’ capital is too small.
• Evaluation of fair prices to purchase takes time.
• Legal power to “threaten” banks is a key.
• Temporary nationalization (wipe out shareholders’ equity and change of management) is faster, better solution for really distressed banks—then take time to evaluate and sell assets.
• Corporate restructuring (ICRJ) has to go with bank restructuring.
Summary

• US is making the same mistakes of Japan and Asian countries
  – Overlooked signs of a bubble
  – Once crisis occurred, policy reactions were too little and too late
  – Failed to convince the legislature to approve enough public funds
  – Capital injection
  – Key failure. Not tough enough to banks to force restructuring and force them to sell distressed assets to TARP
  – Key failure. Nationalization hesitated
Comparison, summary

• Similarities
  – Rejection of using tax payer's money, and regrets
  – Capital injection into bank
    • Reluctance on the part of banks due to string attached
    • Then, force down the throat, and across-the-board
  – Accounting, mark-to-market suspended
  – Lack of capital
  – Nationalization (faster way of restructuring)
  – Loss guarantee (to white knights)
  – 1st capital injection without due diligence (stress testing), to be corrected later
  – Create a new regime for financial supervision

• Differences
  – Speed, “dog year” difference (Japan’s 10 years vs. US 10 quarters)
  – Central bank purchase of assets, more aggressive in US
  – Japan, Nationalization after capital injection; US, avoids nationalization
US advices (in 1997-98) should be now directed to US itself

- All the US advices to Japan (1997-2003) and Asia (1997-98) have to be taken seriously—for the US itself
  - Avoiding moral hazard
  - Stick to mark-to-market; transparency of balance sheet is important
  - Hedge funds should be regulated
  - Management should be purged immediately, when an institution essentially fails
  - Keep pumping in capital to insolvent institutions and create a “zombie” is a bad solution
  - “To big to fail” should be avoided
Concluding words

• Maybe it is human nature to be objective and critical to others, but to be protective and optimistic to oneself