Japan’s Distressed Debt Market

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International Monetary Fund
I. Why do the market bids for NPLs/SPLs matter?

Corporate restructuring requires recycling and replacement of impaired capital.

- Bank capitalization is weak (note the high level of DTAs).
- Banks do not possess the skills to turn-around distressed corporates.

Thus, market clearing price is needed to attract risk capital and accelerate corporate restructuring.

- Debt-equity swap + new capital.

However, price mismatches stall efforts to create a liquid distressed debt market.
How the market has graduated to SPLs

Japan's distressed debt market started as a market for collateral sales.

- Since 1995, strict collateral valuation, along with falling land prices, forced banks to sell collaterals.

Banks at first sold high-quality collaterals at fire-sale prices.

- Foreign distressed debt players earned 30-50% annual returns.
- Due to the complex legal systems, reference prices were not available and collaterals were priced on a bilateral basis.

Margins on collateral sales have recently become tight.

- Japanese investors entered the market with lower required returns.
- Banks learned to use competitive auctions.
- Quality of collaterals has become worse—asset deflation also reduced collateral values.

Foreign players started to move into the SPL market for higher returns.
Where do SPLs come from?

SPLs are special mention and near-bankruptcy loans.

- Failed life insurers sell SPLs
- Non-main banks sell minor stakes of SPLs
- Main bank sell SPLs when debtors file for judicial protection
- Bank sell “near-bankrupt” loans that have potential to turn into SPLs

Most SPLs traded in the market are near-bankrupt loans.
II. Why does a price mismatch exist?

Banks and investors use different valuation methods and assumptions.

Banks assume future gains from debt/collateral.

- “maturity default” is not recognized
- Impasse between main and nonmain banks on debt restructuring

Distressed investors account for future gains in equity.
Maturity Default rule is not recognized

Allowing rollover(s) of impaired loans de facto turns them into perpetual debt.

- Banks view their loans as a call option on Japan’s economic recovery.
- In default, they are legally collateralized/senior debt (and senior of equity).
- Rigid reserving rules and weak capital make banks downside sensitive.
The impasse between the main bank and the nonmain bank

Stalling debt reduction.....

Nonmain banks expect main banks to bail out SPL debtors (main yose –i.e the put option).

- Government may bail out main banks, anyway.

Main banks refuse unilateral debt reduction because they lose upside potential.

- Main banks’ upside is larger because they hold more collateral than nonmain banks.
Main bank system

Banks optimized monitoring costs by designating a main bank.

- MOF’s restrictive branching policy encouraged banks to expand credit exposures outside their territories via the main bank system.
- Main banks monitored the solvency of borrowers, not their profitability.
- Main banks bailed out nonmain banks when borrowers experienced financial problems—in turn, main banks took first-rank collaterals, which fully protected them.

Decline in land prices revealed asymmetry between main and nonmain banks in valuing loans.

- Syndicated loans had not been introduced until 1997.
Classification of SPLs – as defined in our paper (roughly in line with official classification)

- Percentages indicate the ‘loan loss provisions’ applicable in each category. SPLs are ‘special mention’ and some ‘near bankrupt’ category loans.

- Underwatch: 5%
- Special mention: 15%
- Near bankruptcy: 70%
- De facto bankruptcy: 100%
- Judicial bankruptcy: 100%

55% wedge
Bank’s view and the collateral option

- Banks seldom resort to debt-equity swaps as it requires coordination among main banks and nonmain banks—very few cases of DES
- Collateral as an option where liquidation prices is ‘strike’ price
- Debt price (including the option) is capped at par; however if potential upside gain is sufficiently large, the equity view of the SPLs should price it higher than debt
- Debt is senior to equity in bankruptcy
Cases of debt restructuring

In ? 100 million

<table>
<thead>
<tr>
<th>Name of company</th>
<th>Initial Loan</th>
<th>Present value</th>
<th>B/A</th>
<th>Debt equity swap and new capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Ichita</td>
<td>284</td>
<td>71</td>
<td>25.0%</td>
<td>5</td>
</tr>
<tr>
<td>Chiyoda Kakou Kensetsu</td>
<td>839</td>
<td>373</td>
<td>44.5%</td>
<td>18</td>
</tr>
<tr>
<td>Daikyo</td>
<td>10,729</td>
<td>5,243</td>
<td>48.9%</td>
<td>600</td>
</tr>
<tr>
<td>Mitsui Kensetsu</td>
<td>4,226</td>
<td>2,493</td>
<td>59.0%</td>
<td>205</td>
</tr>
<tr>
<td>Kumagai gumi</td>
<td>10,572</td>
<td>6,455</td>
<td>61.1%</td>
<td>200</td>
</tr>
<tr>
<td>Itsuzu Motor</td>
<td>10,682</td>
<td>6,782</td>
<td>63.5%</td>
<td>1,000</td>
</tr>
<tr>
<td>Daiei</td>
<td>25,641</td>
<td>16,948</td>
<td>66.1%</td>
<td>2,300</td>
</tr>
<tr>
<td>Sumitomo Kensetsu</td>
<td>3,149</td>
<td>2,097</td>
<td>66.6%</td>
<td>300</td>
</tr>
<tr>
<td>Hazama</td>
<td>4,224</td>
<td>2,861</td>
<td>67.7%</td>
<td>82</td>
</tr>
<tr>
<td>Hasekou</td>
<td>5,211</td>
<td>3,970</td>
<td>76.2%</td>
<td>1,500</td>
</tr>
<tr>
<td>Toyo Shutter</td>
<td>287</td>
<td>245</td>
<td>85.4%</td>
<td>10</td>
</tr>
<tr>
<td>Kenwood</td>
<td>1,224</td>
<td>1,076</td>
<td>87.9%</td>
<td>250</td>
</tr>
<tr>
<td>Dia Kensetsu</td>
<td>3,188</td>
<td>2,880</td>
<td>90.3%</td>
<td>32</td>
</tr>
<tr>
<td>Nihon Bankin</td>
<td>1,480</td>
<td>1,383</td>
<td>93.4%</td>
<td>150</td>
</tr>
</tbody>
</table>

Values (after the haircut i.e. B/A vary widely but generally in the 60-80 cents/$ range). This is the bank’s view of their restructured portfolio.
III. Equity play: Investor’s bid price

1. Leverage

Actual return on asset is not as high as publicized.

\[ r^a = (r^e + lr^b) / (1+l) \]

- \( r^a \): rate of return on assets
- \( r^b \): borrowing rate
- \( l \): leverage factor

**Average spread of distressed corporates: 600-800 bps (these are BB to C corporates)**

<table>
<thead>
<tr>
<th>Leverage =</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>When ( r^b = 4% ),</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( r^a = ) (when ( r^e = 15 ))</td>
<td>9.5</td>
<td>7.7</td>
<td>6.8</td>
</tr>
<tr>
<td>( r^a = ) (when ( r^e = 20 ))</td>
<td>12.0</td>
<td>9.3</td>
<td>8.0</td>
</tr>
</tbody>
</table>
2. Bid price \( (X_T) \), based on Internal rate of return

\[
X_T = \sum_{t=1}^{n} \frac{R}{(1+r^a)^t} + \frac{X_{T+n}}{(1+r^a)^n}
\]

\( R \): annual return
Assume \( X_T = X_{T+n} \). Then,
\[
X_T = \frac{R}{r^a}
\]

Bottom price
- Assume \( R \) is the inherited interest.....

<table>
<thead>
<tr>
<th>R [Interest rate (inherited) on books (%) ]</th>
<th>1.5</th>
<th>2</th>
<th>2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haircut to adjust for the above payment of interest (%)</td>
<td>77.9</td>
<td>70.6</td>
<td>63.2</td>
</tr>
<tr>
<td>Bid price, cents on the dollar (1 minus haircut factor)</td>
<td>22.1</td>
<td>29.4</td>
<td>36.8</td>
</tr>
</tbody>
</table>
IV. Perpetual debt play: Bank’s offer price

\[ V = \sum_{T=1}^{n} \left[ p_i (1-p_i-1)L + (1-p_i)I_i \right] / (1+r_i) \]

- \( p_i \): probability of default at period \( i \)
- \( L \): value of the loan at liquidation
- \( I_i \): income from the loan at period \( i \)
- \( r_i \): discount rate

Today’s SPL value, based on DCF
To simplify.........
We assume 5-year investment horizon and,

- \( I_i \) to be 2% of \( I \), where \( I \) is book value
- \( r \) to be zero

Assume liquidation value to be collateral value,
Max \( L = dI \),
d is collateral coverage ratio.

Then,
\[
V = [pd + 1.1*(1 - p)] I
\]
Land prices in central cities is at 20% of the peak. Hence, the collateral coverage “d” is 20%.

<table>
<thead>
<tr>
<th>Value today (SPL) (d = 0.20)</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>83.0</td>
<td>74.0</td>
<td>65.0</td>
</tr>
</tbody>
</table>
Tomorrow’s value (Potential future gain)

But, what if the economic recovery increases collateral value and lowers default probability?

(‘d’ increases by roughly 5% for 5 year (compounded) or about 30%; ‘p’ decreases by 10%)
In a future state (f), if:
- d goes up by 30%: \( d_f = 20\% \times 1.3 = 26\% \)
- p goes down by 10%: \( p_f = p - 10\% \)

### Today's Value and Potential Future Value

<table>
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<tr>
<th>p</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
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<tbody>
<tr>
<td>Value today (SPL) ( (d = 0.20) )</td>
<td>83</td>
<td>74</td>
<td>65</td>
</tr>
<tr>
<td>( P_f ) ( (d_f = 0.20 \times 1.3) )</td>
<td>93</td>
<td>85</td>
<td>76</td>
</tr>
</tbody>
</table>
Today and Tomorrow's value of impaired loan

Today's value
(Default Probability = 40%)

Tomorrow's value
(Default Probability = 30%)

Collateral value
(land price)

Book value
V. Prices that clear the ‘maket’?

Investors: Improve debtor’s cash flow
Increase their leverage?—but leverage works both ways.

Banks: Conservative default assumptions
Assume upside option value in their collateral
When an investor owns a 50% stake.....

Required earning to achieve market clearing price
($r^a = 6.8\%$, interest rate (inherited) on the books = 2\%)

<table>
<thead>
<tr>
<th>Market Clearing price</th>
<th>65</th>
<th>74</th>
<th>85</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required actual return ($R^a$) (%)</td>
<td>4.4</td>
<td>5.0</td>
<td>5.8</td>
</tr>
<tr>
<td>Required cash flow improvement (%)</td>
<td>61%</td>
<td>76%</td>
<td>95%</td>
</tr>
</tbody>
</table>
VI. Policy Suggestions

- Restrict rollover of impaired loans that results in ‘perpetual debt play’
- Swap impaired loans for equity that can be priced off the market (secondary market price of the corporates bonds, share price on the Nikkei etc)
- Reducing the impasse between the main bank and nonmain banks, especially where the latter assume an (eventual) bail-out by the government
Policy Suggestions.... continued

- Increase the use of judicial restructuring at an early stage
- Introduce a gradual scale for loan loss reserves, thereby reducing the regulatory wedge, especially that exists between ‘special mention loans’ and ‘near-bankrupt’ loans
- Upgrade loan(s) that are restructured—present regulations disallow such upgrades.
- Develop the local investor base for high yield assets (e.g. Norinchukin Bank, Daido Life and Tokyo Marine and their search for extra yield)