

ME

7/10/09

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# Outline

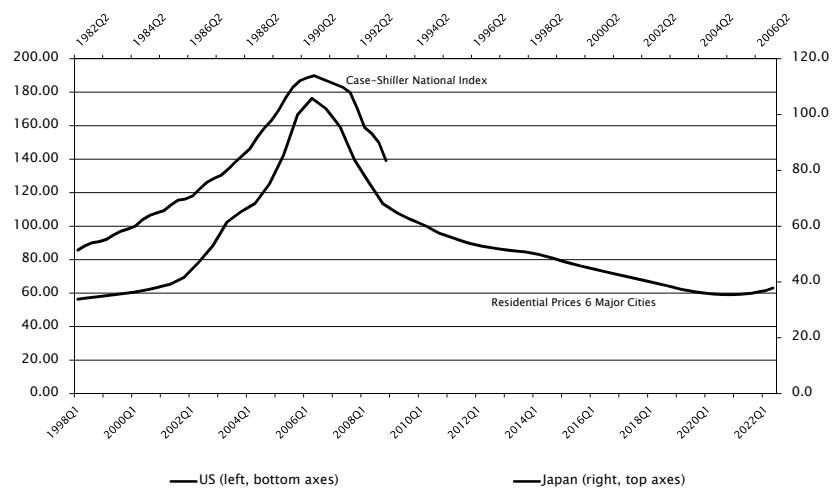
1. Some similarities between the U.S. and Japan
  - 1997–1999 in Japan = Fall 2008–2009 in the U.S.
2. Lessons from the Japanese asset purchase and capital injection experience
3. Preliminary assessment of U.S. programs

Bank Recapitalization:  
Lessons from Japan July 10, 2009

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# Housing prices

Land Prices in the U.S. and Japan

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2008-2009 in the U.S.	1997-1999 in Japan
<ul style="list-style-type: none"> <li>▶ Unexpected failure of large institutions (Mar and Sep 2008)</li> <li>▶ Spike in the interbank borrowing rate, sharp rise in the cost of insuring debts, frozen capital markets</li> <li>▶ Call for suspending mark-to-market accounting, restriction on short sales (Sep 2008)</li> <li>▶ Original TARP (Oct 3, 2008)</li> <li>▶ Capital Purchase Program (Oct 14, 2008)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Unexpected failure of large institutions (Nov 1997)</li> <li>▶ Spike in the interbank borrowing rate</li> <li>▶ New accounting to cover up problems (Jan 1998)</li> <li>▶ Half-hearted recapitalization (Mar 1998) <ul style="list-style-type: none"> <li>◦ All banks get the same injection = amount desired by the strongest bank</li> </ul> </li> </ul>

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2008-2009 in the U.S.	1997-1999 in Japan
<ul style="list-style-type: none"> <li>▶ Republicans lost big, new President chosen (Nov 2008)</li> <li>▶ 2<sup>nd</sup> capital injections to Citigroup, Bank of America</li> <li>▶ Freefall of bank stock prices</li> <li>▶ Geithner Plan (From Feb 2009) <ul style="list-style-type: none"> <li>◦ Stress tests and capital assistance</li> <li>◦ Private/Public Investment Plan (PPIP)</li> <li>◦ Expansion of TALF</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▶ Freefall of bank stock prices</li> <li>▶ LDP loses election, government resigns (June 1998)</li> <li>▶ Second round crisis legislation (Oct 1998)</li> <li>▶ Several major financial firms nationalized (Nov 1998)</li> <li>▶ Second round recapitalization (Mar 1999) <ul style="list-style-type: none"> <li>◦ MOF official declares crisis “will be over in 2 weeks” (Feb 1999)</li> </ul> </li> </ul>

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## How Big was the Problem in Japan? (All banks, ¥ trillion)

End of	Loan Losses	Cumulative Loan Losses since 4/1992	Number of Major Banks
3/1994	3.872	5.512	21
3/1995	5.232	10.744	21
3/1996	13.369	24.113	20
3/1997	7.763	31.877	20
3/1998	13.258	45.135	20
3/1999	13.631	58.766	17
3/2000	6.944	65.710	18
3/2001	6.108	71.818	18
3/2002	9.722	81.540	15
3/2003	6.658	88.198	13
3/2004	5.374	93.572	13
3/2005	2.848	96.420	13
3/2006	0.363	96.783	11
3/2007	1.046	97.829	11
3/2008	1.124	98.953	11

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≈19%  
of  
GDP

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## Asset Management Companies in Japan

Name	Dates (purchases)	Target Purchases	Amount Spent (¥ Trillion)	Amount Collected (¥ Trillion)	Comments
Cooperative Credit Purchasing Co. (CCPC)	12/1992-3/2001	Non-performing loans with land collateral of contributing banks	5.8 (market) [=15.4 book]		Bank financed, created tax benefits by buying loans Liquidated in 3/2004
Tokyo Kyodo Bank	1/1995-4/1999	Initially assets of failed credit unions, later assets of any failed banks	4.718	5.362	Reorganized as Resolution and Collection Bank (RCB) in 9/1996
Housing Loan and Administration Corp. (HLAC)	7/1996-4/1999	Loans of failed <i>jusen</i> (specialty housing loan companies)	4.656 (market)	3.233	Financed with mix of public and private money
Resolution and Collection Corp.	4/1999-6/2005	Combined RCB and HLAC, mandate extended to allow purchases of assets from solvent banks	0.356 (market) [=4.046 book] (beyond earlier HLAC and RCB spending)	0.649	Starting in 2001 also reorganized loans, ultimately involved in restructuring 577 borrowers
Industrial Revitalization Corp. of Japan	5/2003-3/2005	Buy non-performing loans through 2005, restructure them within 3 years	0.53 (market) [=0.97 (book)]	NA [0.094 surplus as of 5/2007]	Restructured 41 borrowers with 4 trillion total debt Closed in 5/2007

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# Recapitalizations in Japan

Legislation	Date	Securities Used	Number of financial institutions (# with nonzero outstanding balance)	Amount Injected (Trillion ¥)	Amount Sold or Collected to date (as of September 2008) (Trillion ¥)
Financial Function Stabilization Act	3/1998	Preferred shares, subordinated debts	21 (2)	1.816	1.653 [1.626 (book)]
Prompt Recapitalization Act	3/1999 – 3/2002	Preferred shares, subordinated debts	32 (10)	8.605	8.820 [7.556 (book)]
Financial Reorganization Promotion Act	9/2003	Subordinated debts	1 (0)	0.006	0.006 [0.006 (book)]
Deposit Insurance Act (Article 102-1)	6/2003	Common shares, preferred shares	1 (1)	1.960	0.611 [0.017 (book)]
Act for Strengthening Financial Functions	11/2006-12/2006	Preferred shares	2 (2)	0.041	0.000

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1998 Capital Injections	S&P Rating	Total Funds	Preferred Shares					Subordinated loans/debts			
			Type	Amount	dividend rate	Conversion start	Forced conversion	Type	Amount	yield for 5 years	yield after 6th year
City banks											
Dai-Ichi Kangyo	BBB+	99	CPS	99	0.75	7/1/1998	8/1/2005	SDP	100	L+1.10	L+2.60
Fuji	BBB+	100						SDP	100	L+1.20	L+2.70
Sakura	BBB	100						SDP	100	L+1.20	L+2.70
Sanwa	A-	100						SDP	100	L+0.55	L+1.25
Sumitomo	A-	100						SDP	100	L+0.90	L+2.40
Tokyo Mitsubishi	A	100						SDP	100	L+0.90	L+2.40
Asahi	BBB+	100						SLP	100	L+1.00	L+2.50
Daiwa	BBB-	100						SLP	100	L+2.70	L+2.70
Tokai	BBB+	100						SDP	100	L+0.90	L+2.40
Long-term Credit bank											
Ind. Bank of Japan	A-	100						SDP	100	L+0.55	L+1.25
LTCB	BBB-	177.6	CPS	130	1.00	10/1/1998	4/1/2008	SLP	46.6	L+2.45	L+3.95
Nippon Credit Bank	NR	60	CPS	60	1.00	10/1/1998	4/1/2018				
Trust banks											
Mitsubishi Trust	A-	50						SDP	50	L+1.10	L+2.60
Sumitomo Trust	A-	100						SDP	100	L+1.10	L+2.60
Mitsui Trust	BBB+	100						SDP	100	L+1.45	L+2.95
Chuo Trust	NR	60	CPS	32	2.50	7/1/1998	8/1/2018	SLP	28	L+2.45	L+3.95
Toyo Trust	NR	50						SDP	50	L+1.10	L+2.60
Regional Bank											
Bank of Yokohama	BBB	20						SLP	20	L+1.10	L+2.60
Hokuriku Bank	NR	20						SLP	20	L+2.45	L+3.95
Ashikaga Bank	NR	30						SDP	30	L+2.95	L+4.45

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March 1999 injections			Preferred shares					Subordinated debt/loans				
	S&P Rating	Total	Type	Amt	div. rate	Conversion start date	Forced conversion	Type	Amt	yield	after step-up	step-up date
Dai-ichi Kangyo	BBB	900	CPS	200	0.41	8/1/2004	8/1/2006	SD10	100	L+0.75	L+1.25	4/1/2004
			CPS	200	0.70	8/1/2005	8/1/2008	SD11	100	L+0.75	L+1.25	4/1/2005
			NCPS	300	2.38							
Fuji	BBB+	1,000	CPS	250	0.40	10/1/2004	2/1/2009	SDP	200	L+0.65	L+1.35	4/1/2004
			CPS	250	0.55	10/1/2006	2/1/2011					4/1/2009
			NCPS	300	2.10							
Sakura	BBB	800	CPS	800	1.37	10/1/2002	10/1/2009					
Sanwa	BBB+	700	CPS	600	0.53	7/1/2001	8/1/2008	SDP	100	L+0.34	L+1.34	10/1/2004
Sumitomo	BBB+	501	CPS	201	0.35	5/1/2002	2/27/2009					
			CPS	300	0.95	8/1/2005	2/27/2009					
Asahi	BBB+	500	CPS	300	1.15	7/1/2002	12/1/2009	SLP	100	L+1.04	L+2.54	4/1/2009
			CPS	100	1.48	7/1/2003	12/1/2014					
Daiwa	BB+	408	CPS	408	1.06	6/30/1999	4/1/2009					
Tokai	BBB-	600	CPS	300	0.93	7/1/2002	3/31/2009					
			CPS	300	0.97	7/1/2003	3/31/2009					
Industrial Bank of Japan	BBB+	600	CPS	175	0.43	7/1/2003	9/1/2009	SDP	250	L+0.98	L+1.48	4/1/2004
			CPS	175	1.40	9/1/2003	9/1/2009					
Mitsubishi Trust	BBB	300	CPS	200	0.81	7/31/2003	8/1/2008	SDP	100	L+1.75	L+2.25	4/1/2004
Sumitomo Trust	BBB	200	CPS	100	0.76	4/1/2001	3/31/2009	SD12	100	L+1.53	L+2.03	4/1/2006
Mitsui Trust	BBB-	400	CPS	250.3	1.25	7/1/1999	8/1/2009	SLP	150	L+1.49	L+1.99	3/31/2004
Chuo Trust	NR	150	CPS	150	0.90	7/1/1999	8/1/2009					
Toyo Trust	NR	200	CPS	200	1.15	7/1/1999	8/1/2009					
Bank of Yokohama	BBB	200	CPS	70	1.13	8/1/2001	7/31/2009	SDP	50	L+1.65	L+2.15	4/1/2004
			CPS	30	1.89	8/1/2004	7/31/2009	SL10	50	L+1.07	L+1.57	4/1/2004

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Date	Official Core capital	Deferred Tax Assets	Estimated Under-reserving	Modified Capital	Capital held by gov't	Bank Assets	Capital Gap
	A	B	C	D=A-B-C	E	F	G=0.03*F-D
Mar-96	27.9	0.0	NA	27.9	0.0	846.5	-2.5
Mar-97	28.5	0.0	15.0	13.5	0.0	856.0	12.2
Mar-98	24.3	0.0	4.9	19.4	0.3	848.0	6.0
Mar-99	33.7	8.4	4.0	21.3	6.3	759.7	1.5
Mar-00	35.6	8.2	5.8	21.6	6.9	737.2	0.5
Mar-01	37.6	7.1	7.5	23.0	7.1	804.3	1.1
Mar-02	30.2	10.6	6.8	12.8	7.2	756.1	9.9
Mar-03	24.8	10.6	5.4	8.8	7.3	746.3	13.6
Mar-04	29.0	7.2	5.7	16.1	8.9	746.7	6.3
Mar-05	31.4	5.7	6.9	18.8	8.1	745.9	3.6
Mar-06	37.3	2.3	8.3	26.7	5.2	766.9	-3.7
Mar-07	40.0	1.3	9.4	29.4	3.5	761.1	-6.5
Mar-08	34.8	3.6	10.2	21.0	3.1	780.7	2.4

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## Creation of Zombies

- ▶ Another problem in the Japanese responses:  
Encouraged banks to support non-viable  
firms (to protect employment, etc.)
- ▶ The zombie firms prevented entry/expansion  
of more productive firms

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## Cross-section regression of NPL ratio

Independent variable	Year	Lag 1	Lag 4	Year	Lag1	Lag4
Real estate loan	1998	.348 (.083)	.312 (.065)	2002	.242 (.079)	.213 (.069)
SME loan		.038 (.026)	.027 (.021)		.111 (.024)	.062 (.032)
Real estate loan	1999	.653 (.174)	.684 (.165)	2003	.141 (.056)	.134 (.059)
SME loan		-.021 (.041)	-.051 (.053)		.108 (.018)	.083 (.019)
Real estate loan	2000	<b>1.534</b> (.573)	<b>1.132</b> (.553)	2004	.009 (.044)	.045 (.048)
SME loan		-.082 (.114)	-.029 (.108)		.101 (.014)	.097 (.017)
Real estate loan	2001	.430 (.164)	.388 (.233)	2005	.006 (.054)	-.039 (.054)
SME loan		.201 (.083)	.075 (.041)		.066 (.017)	.085 (.018)

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## How the bank capital was restored ?

- ▶ Recapitalization attempts in 1998 and 1999 did not have sustained impacts
- ▶ From late 2001 to early 2002, the FSA conducted “special inspections” but announced all the banks were well capitalized and did not need capital injection
- ▶ Eventually, the financial health of major banks were restored by:
  1. Takenaka plan
  2. Macroeconomic recovery

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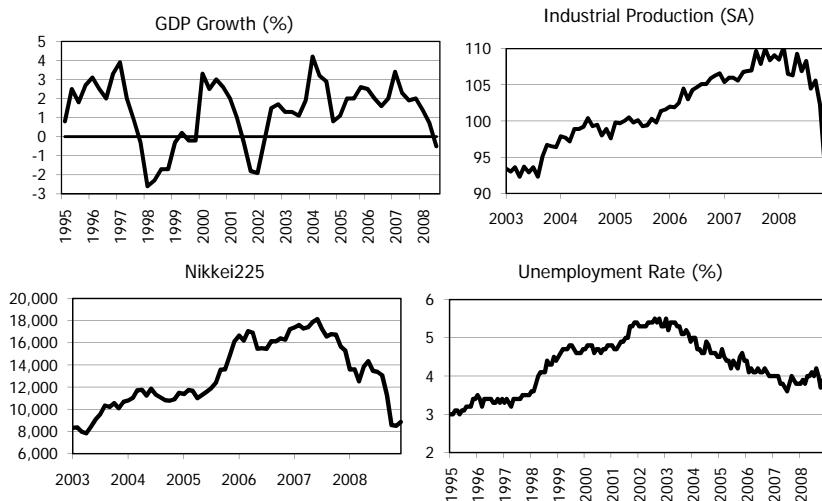
## Takenaka Plan

1. Have banks make more rigorous evaluation of assets using discounted expected cash flows or market prices of non-performing loans
2. Check cross-bank consistency in classifying loans to large debtors
3. Publicize the discrepancy between the banks’ self evaluations and the FSA’s evaluations
4. Be prepared to inject public funds if necessary
5. Prohibit banks from declaring unrealistically large deferred tax assets
6. Impose business improvement orders for banks that substantially underachieved the revitalization plans.

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## Macroeconomic recovery



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## Capital Evolution for Japanese Banks 2003 to 2007 (¥ trillion)

	March-07	March-03	Change	Percent contribution to change
<b>Official Capital</b>	<b>40.0</b>	<b>24.8</b>	<b>15.2</b>	<b>100.00%</b>
Common stock	9.3	10.2	-0.9	-6.13%
Capital surplus	8.7	8.6	0.1	0.39%
Retained earnings	13.4	4.4	9.0	59.07%
Net unrealized gains on stocks and others	8.2	0.1	8.1	53.25%
Revaluation reserve for land	1.0	1.5	-0.6	-3.70%
Net deferred gains on hedging instruments	-0.3	0	-0.3	-2.07%

Note: Some small components have been omitted and because of this and rounding columns may not sum to totals.

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## Conclusions: Lessons from Japan

1. Banks may refuse public funds (fear of signaling troubled situation; creation of claims senior to the existing shares)
2. Buying troubled assets alone is not likely to solve the capital shortage. Assets purchase program must be combined with recapitalization program – could be privately funded.
3. Programs must be big enough.
4. Programs must be preceded by rigorous inspection (to determine the size of the problem)
5. Troubled assets purchased by AMCs should be put back into the private sector or restructured swiftly.
6. Nationalization can be useful to wind down systemically important banks.
7. Targeting total lending or lending to specific sectors can be counter-productive.
8. Recapitalization ultimately driven by macroeconomic recovery

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## Stress Test (May 2009)

- ▶ **Total Estimated Losses for 2009 and 2010  
\$599.2 billion**
- ▶ **SCAP (Supervisory Capital Assessment Program) Buffer as of December 31, 2008  
\$185.0 billion**
- ▶ **Less: Capital Actions and Effects of Q1 2009 Results  
\$110.4 billion**
- ▶ **SCAP Buffer  
\$74.6 billion**

Final (2010 Year End) Tangible Common Equity

= Initial TCE + Operating Earnings (for 2 Years) – Net Chargeoffs –  
Change in Reserves – Preferred & Common Dividend

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## Stress Test “More Adverse” Scenario

	Scenario	2009	2010
Real GDP Growth	Baseline	-2.0%	2.1%
	Adverse	-3.3%	0.5%
Unemployment rate	Baseline	8.4%	8.8%
	Adverse	8.9%	10.3%
House price	Baseline	-14%	4%
	Adverse	-22%	-7%

- ▶ May not be sufficiently be “adverse”
- ▶ Assume that loan loss rates come back down to normal from 2011 on

## What are still missing?

1. Tougher stress test?
2. Removal of troubled loans and securities (success of PPIP not clear. 100 of applications but no deals, yet)
3. Mechanism to close (or nationalize) systemic important financial institutions (included in the financial regulatory reform plan published by the Treasury in June 2009)
4. Mechanism to restructure troubled loans