

**The Age of Balance Sheet Recessions:
What Post-2008 U.S., Europe and China
Can Learn from Japan 1990-2005**

Richard C. Koo

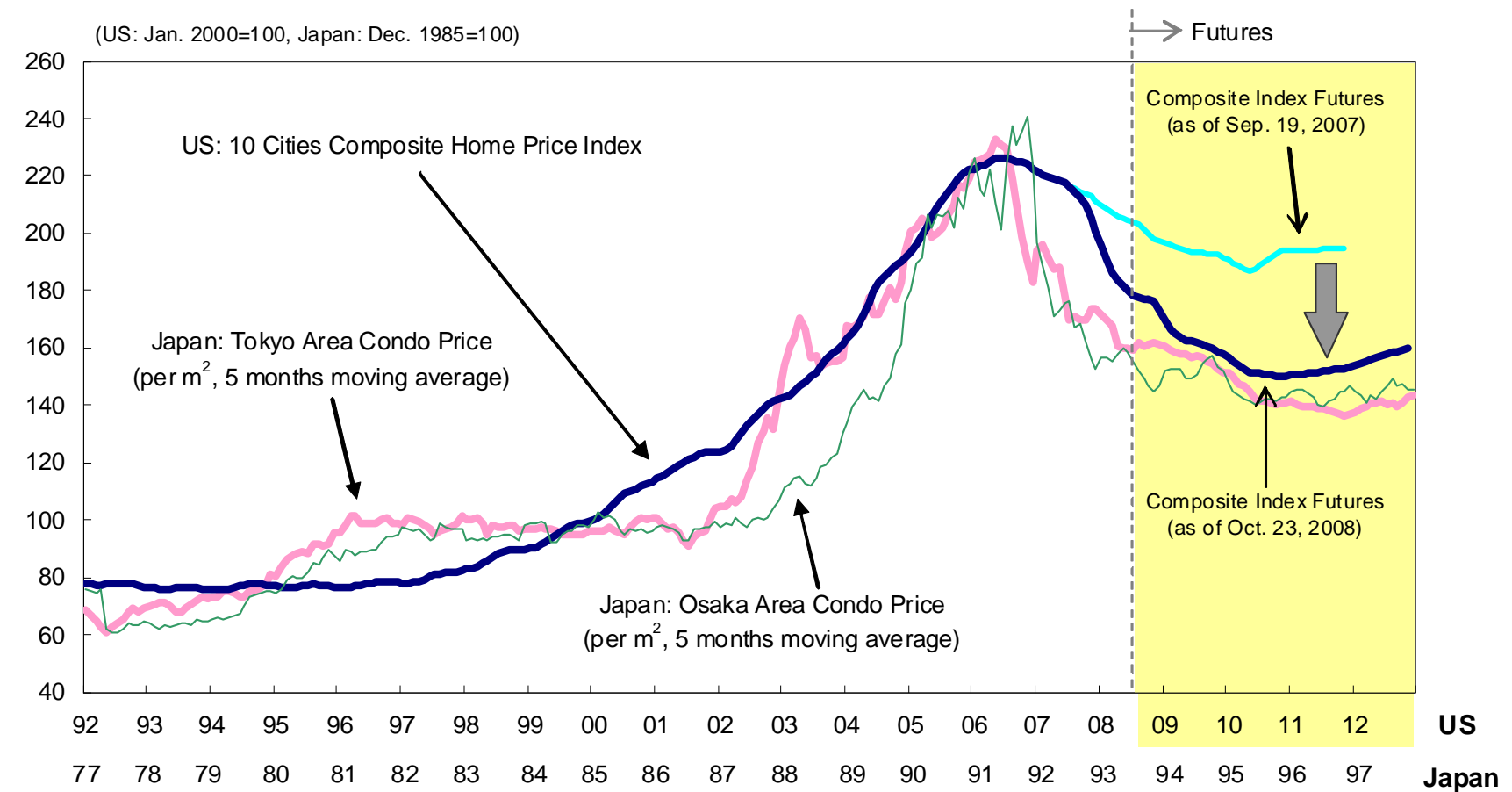
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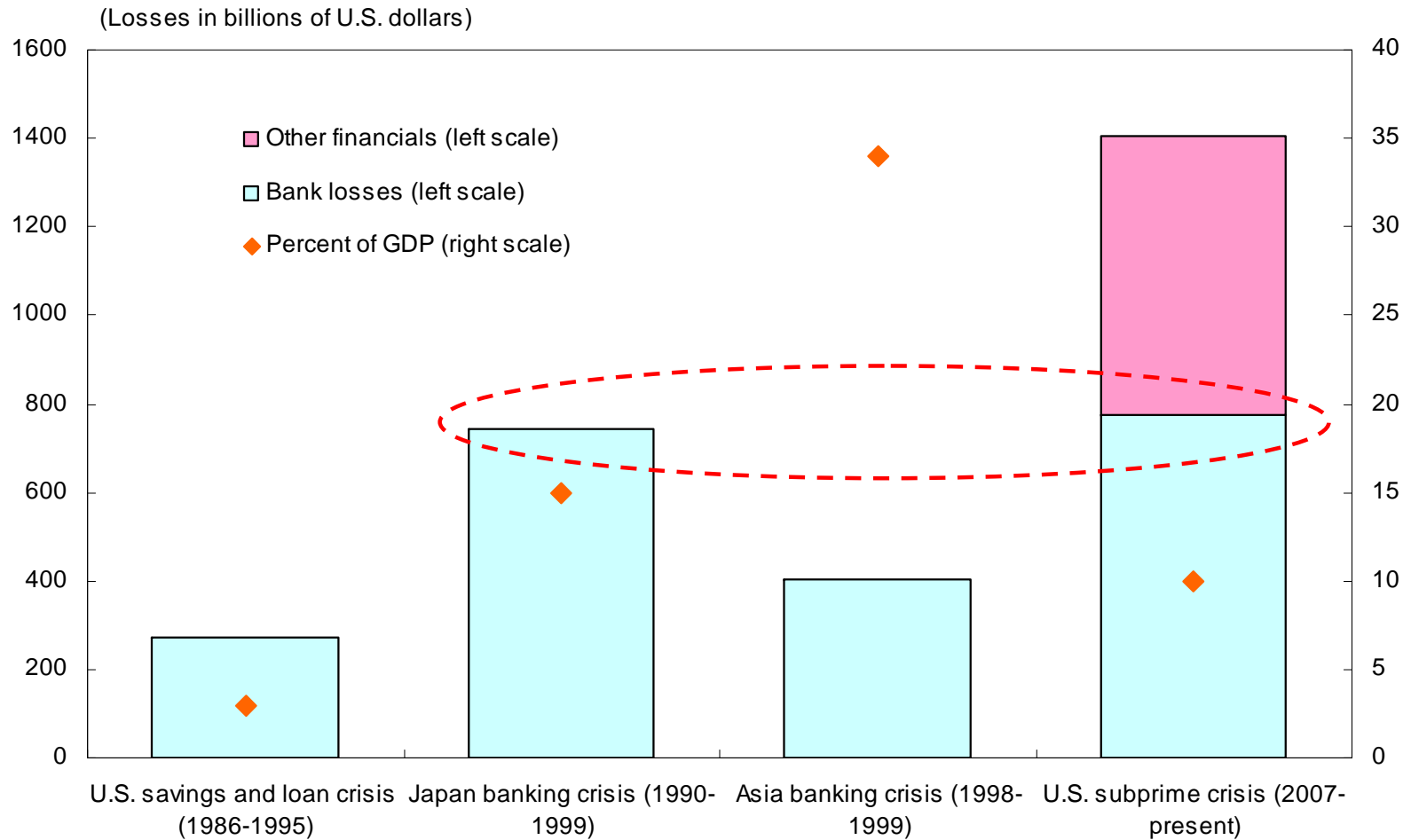
October 2008

Exhibit 1. US Housing Price Futures Moving Closer to the Japanese Experience



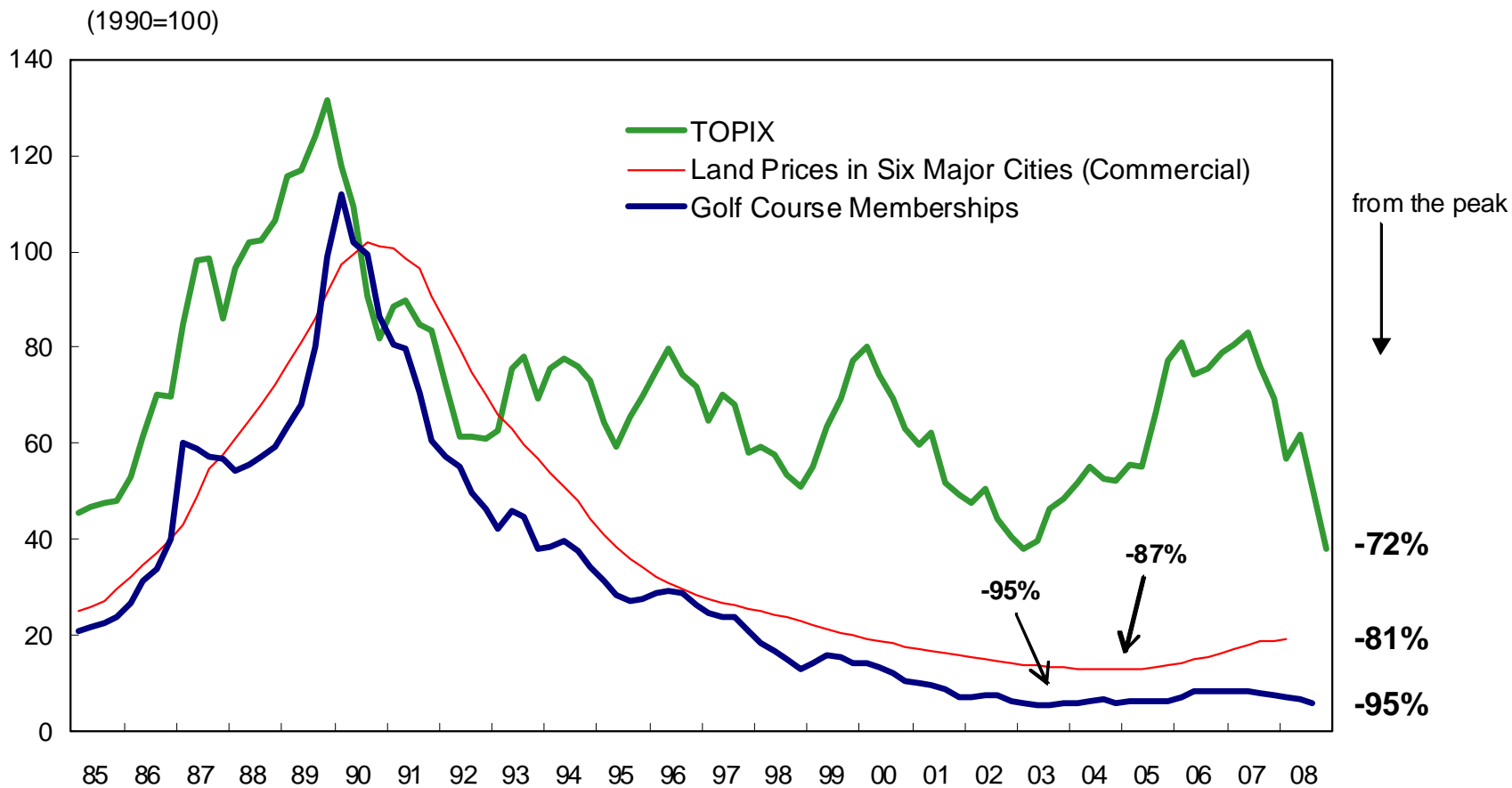
Sources: Bloomberg, Real Estate Economic Institute, Japan, S&P "S&P/Case-Shiller® Home Price Indices", as of Oct. 23, 2008.

Exhibit 2. Japanese Banking Crisis and US Subprime Crisis Resulting in Similar Bank Losses



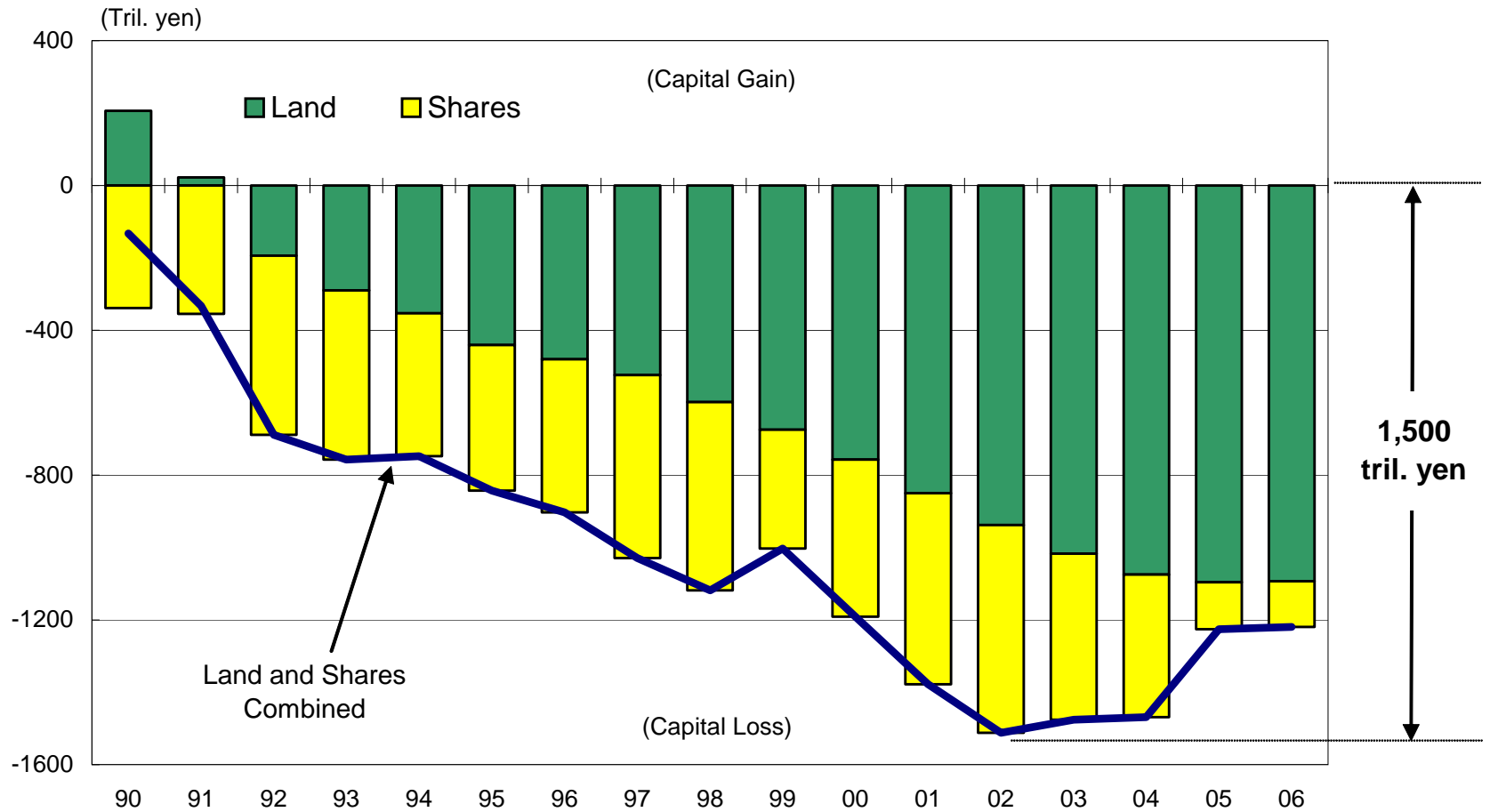
Source: IMF, *Global Financial Stability Report (October 2008)*, p.16

Exhibit 3. Japanese Asset Prices Collapsed after 1990



Sources: Tokyo Stock Exchange, Japan Real Estate Institute, *Nikkei Sangyo Shimbun*

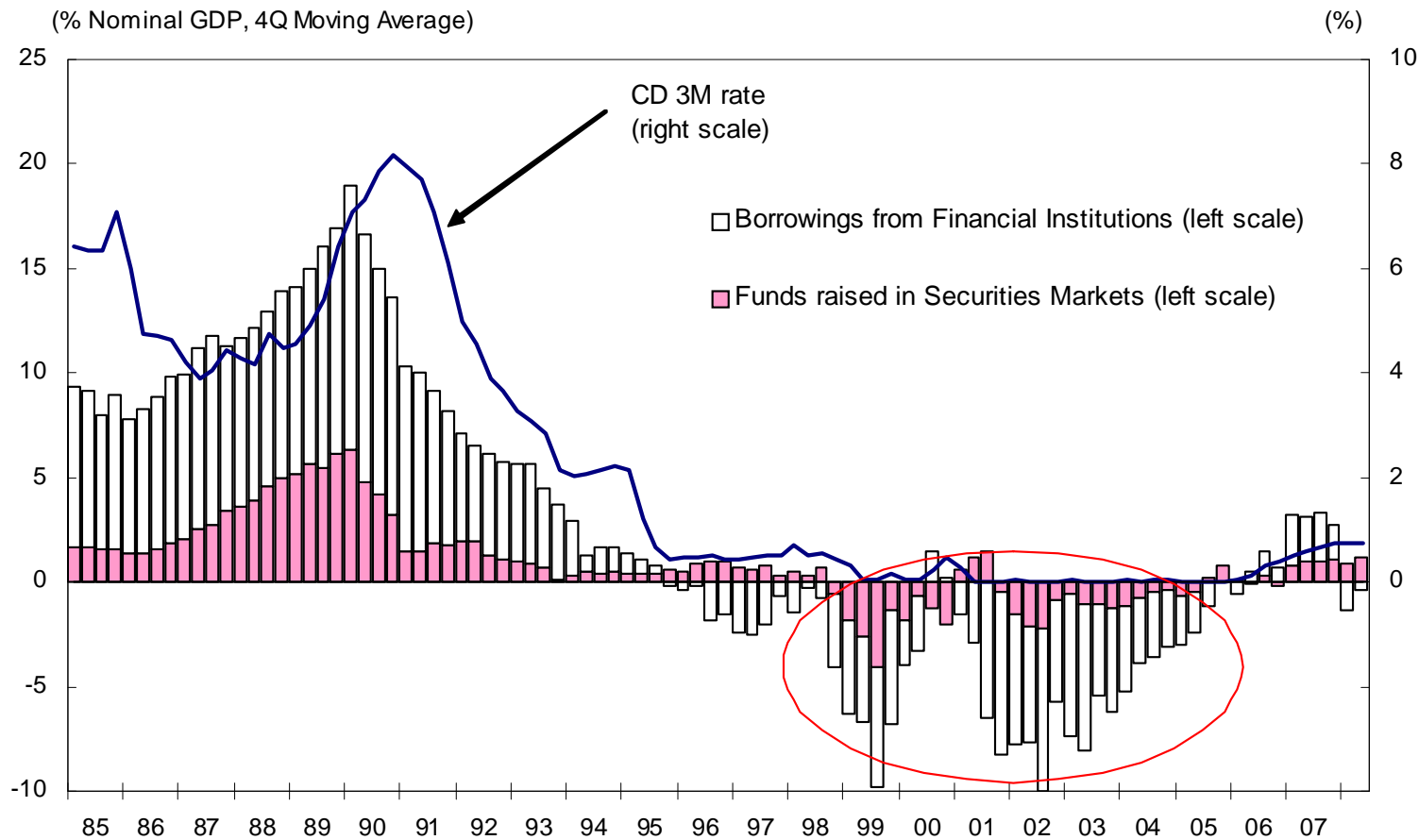
Exhibit 4. Cumulative Capital Losses on Shares and Land since 1990 Reached \$15 Trillion or 3 Years Worth of Japan's GDP



Source: Cabinet Office, Japan "National Accounts"

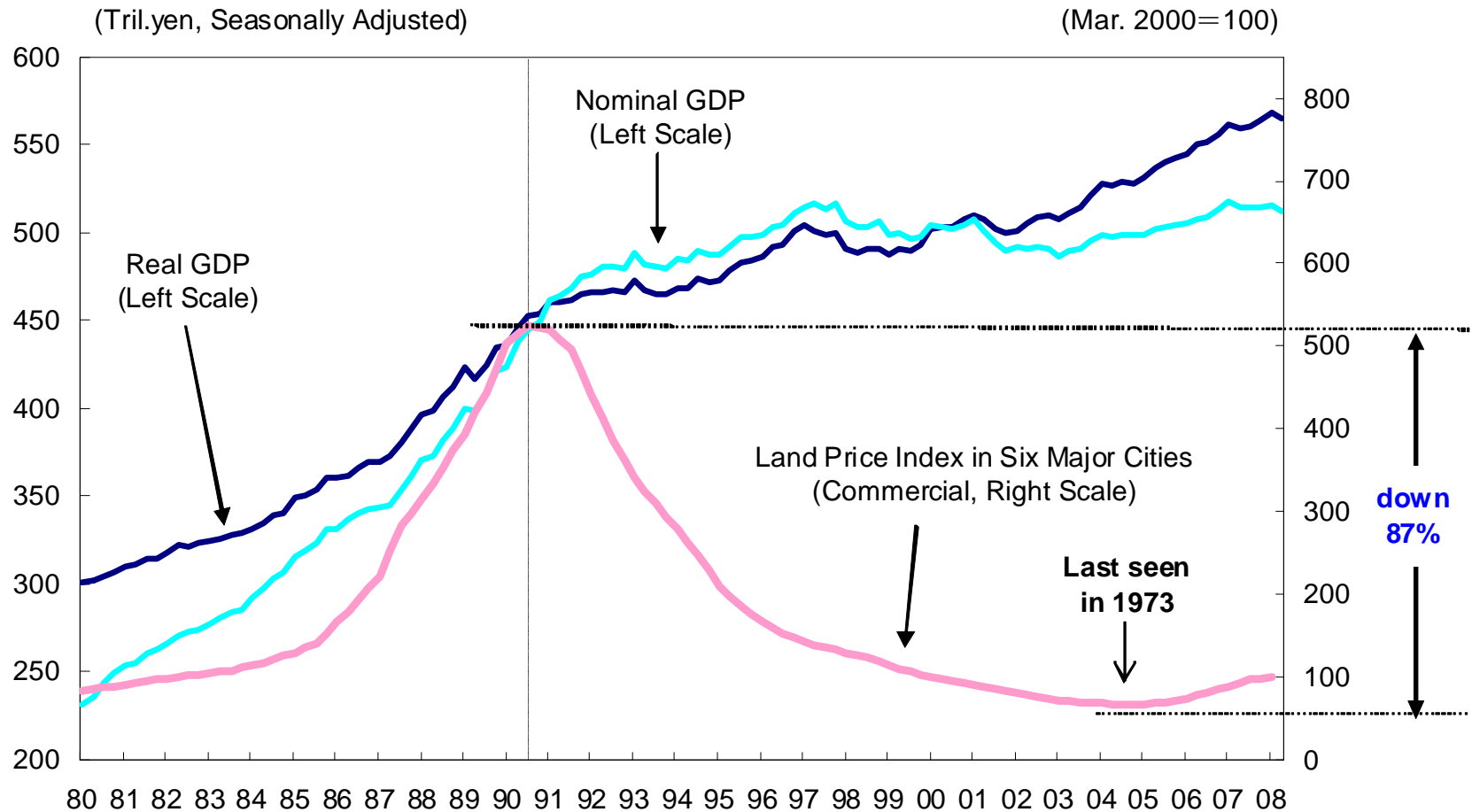
Exhibit 5. Balance Sheet Problems Forced Japanese Businesses to Pay Down Debt even with Zero Interest Rates

Funds Raised by Non-Financial Corporate Sector



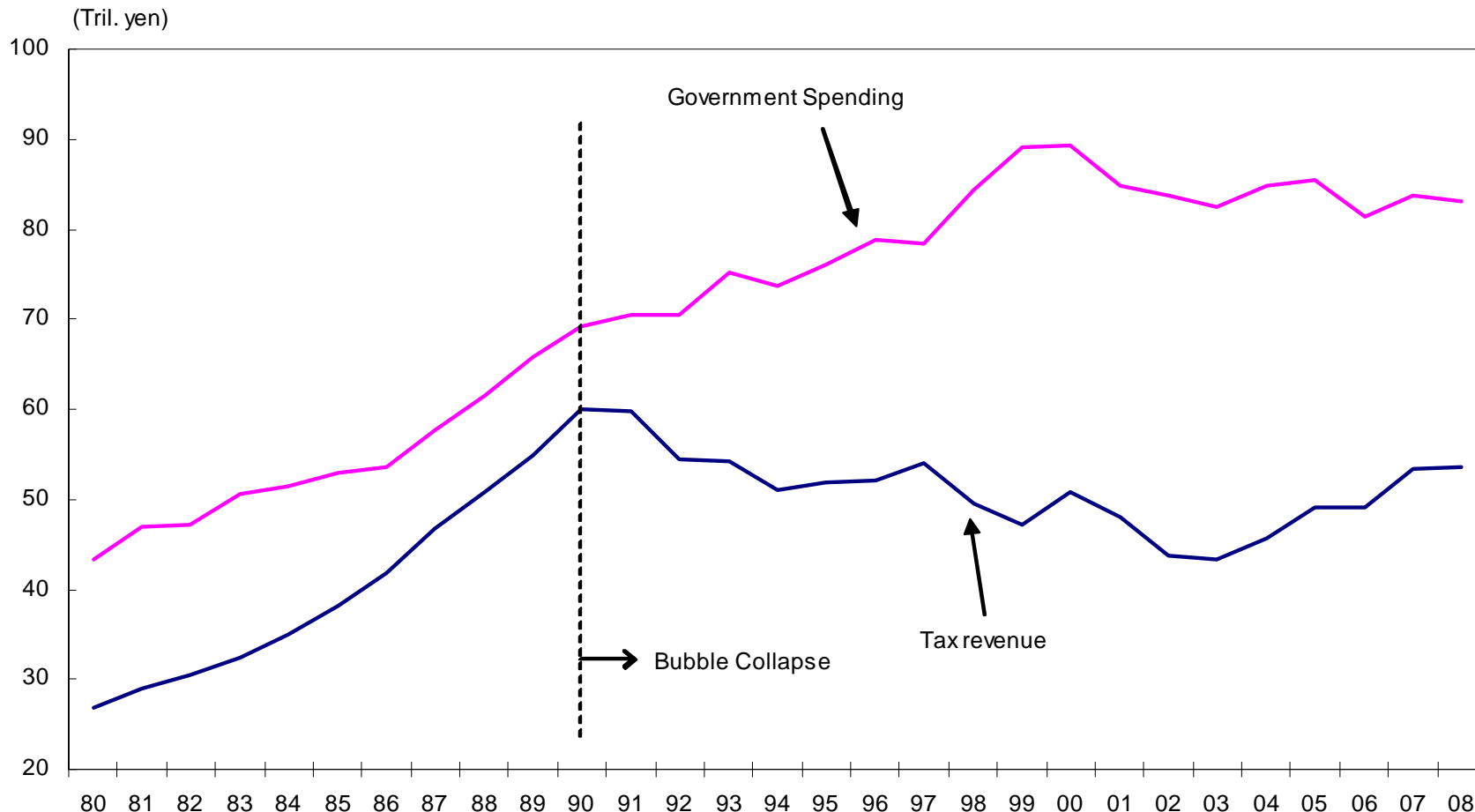
Sources: Bank of Japan, Cabinet Office, Japan

Exhibit 6. Japan's GDP Grew even after Massive Loss of Wealth and Private Sector Rushing to Pay Down Debt



Sources: Cabinet Office, Japan Real Estate Institute

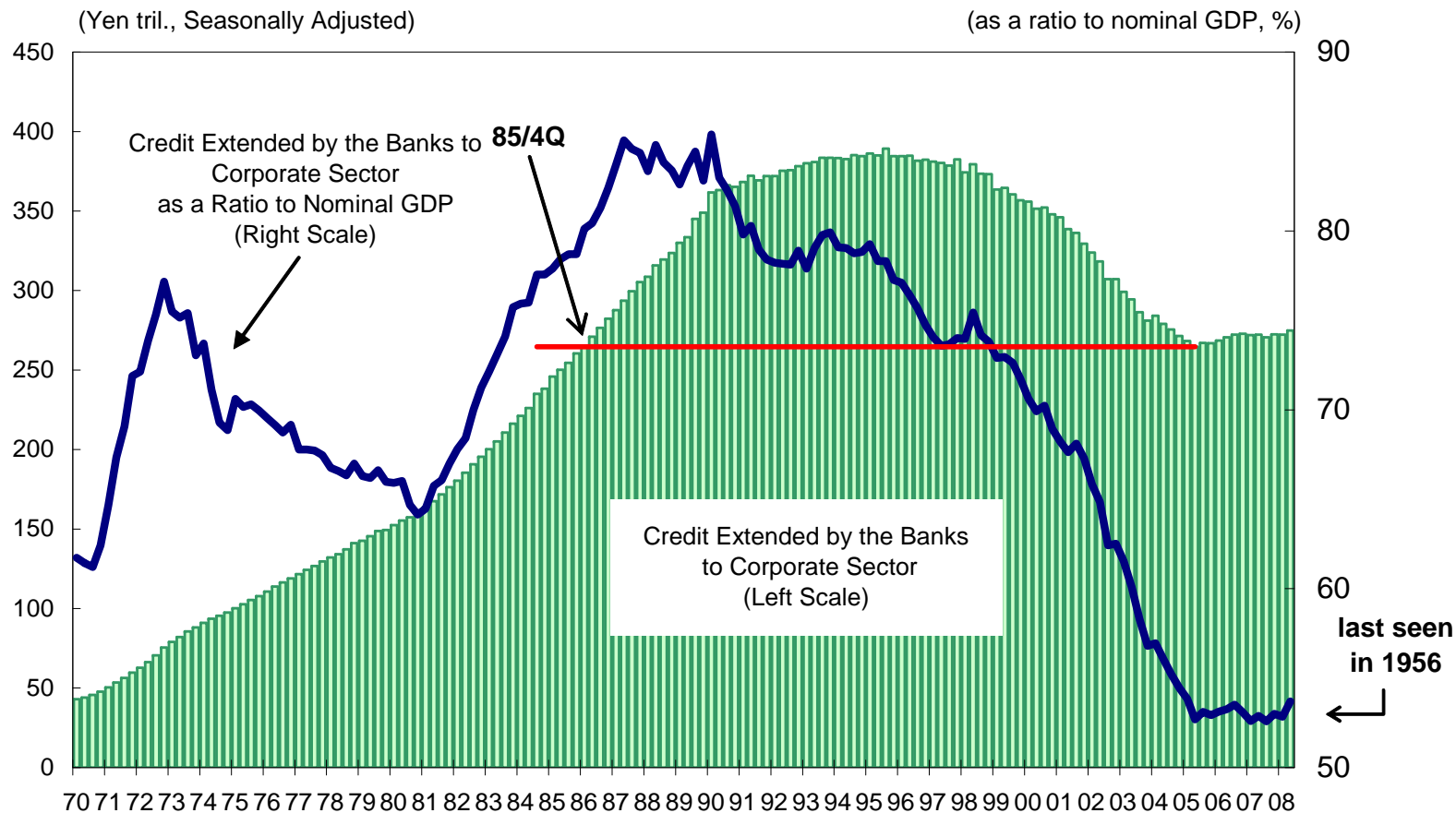
Exhibit 7. Japanese Government Borrowed and Spent the Excess Savings of the Private Sector to Sustain GDP



Source: Ministry of Finance, Japan

Note: FY 2007 includes supplementary budget, and FY 2008 is just initial budget.

Exhibit 8. Japanese Companies Made Huge Progress in Reducing Debt Overhang

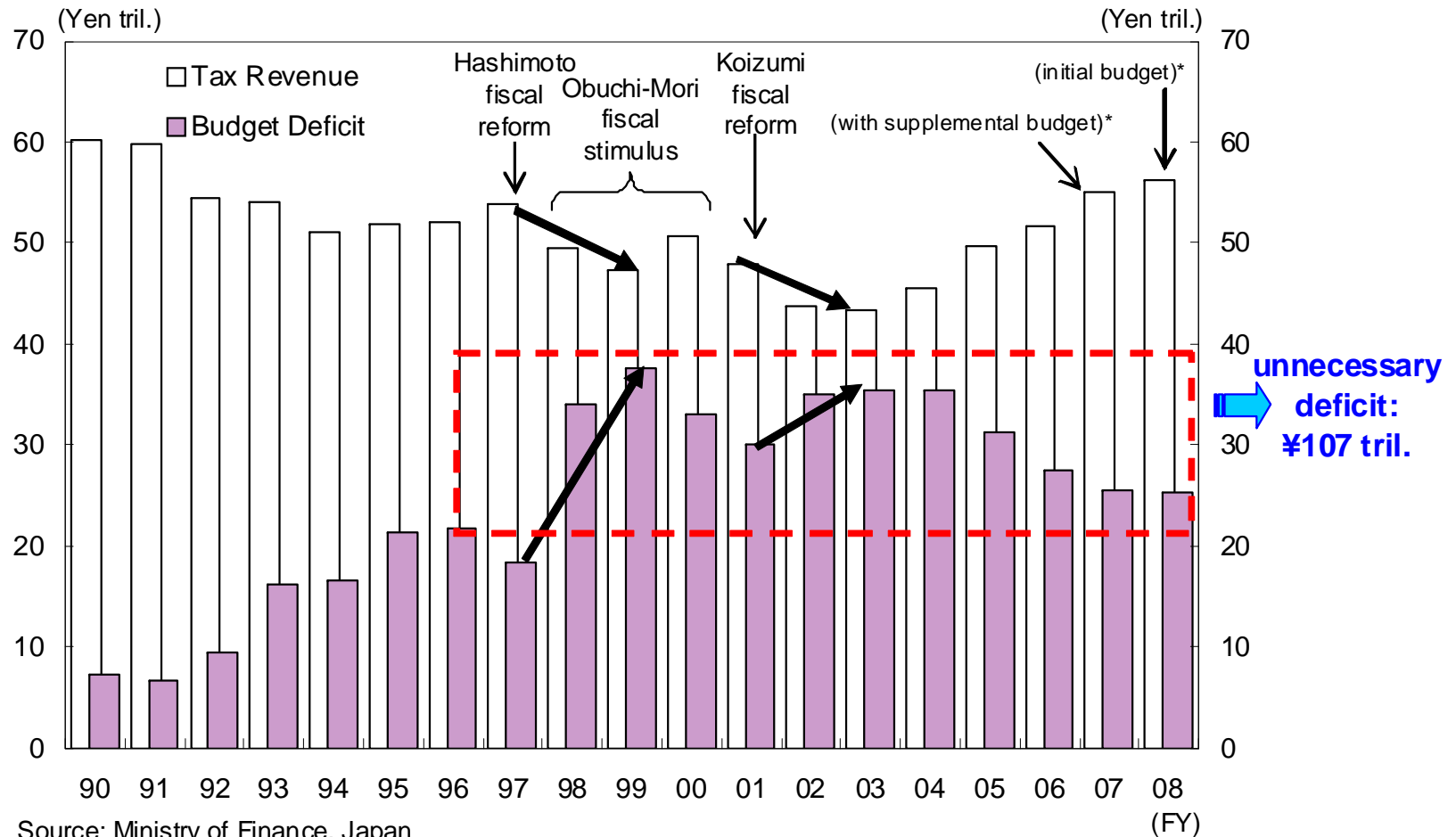


Sources : Bank of Japan, "Loans and Discounts Outstanding by Sector" "Loans to Individuals", Cabinet Office, Japan "National Accounts"

Notes: 1. 'Credit Extended by the Banks to Corporation' is extended to 1970 by NRI after adjustment for discontinuities in statistics in 1993 and again in 1975.

2. As a percentage of nominal GDP. For GDP statistics before 1979, 68 SNA is used.

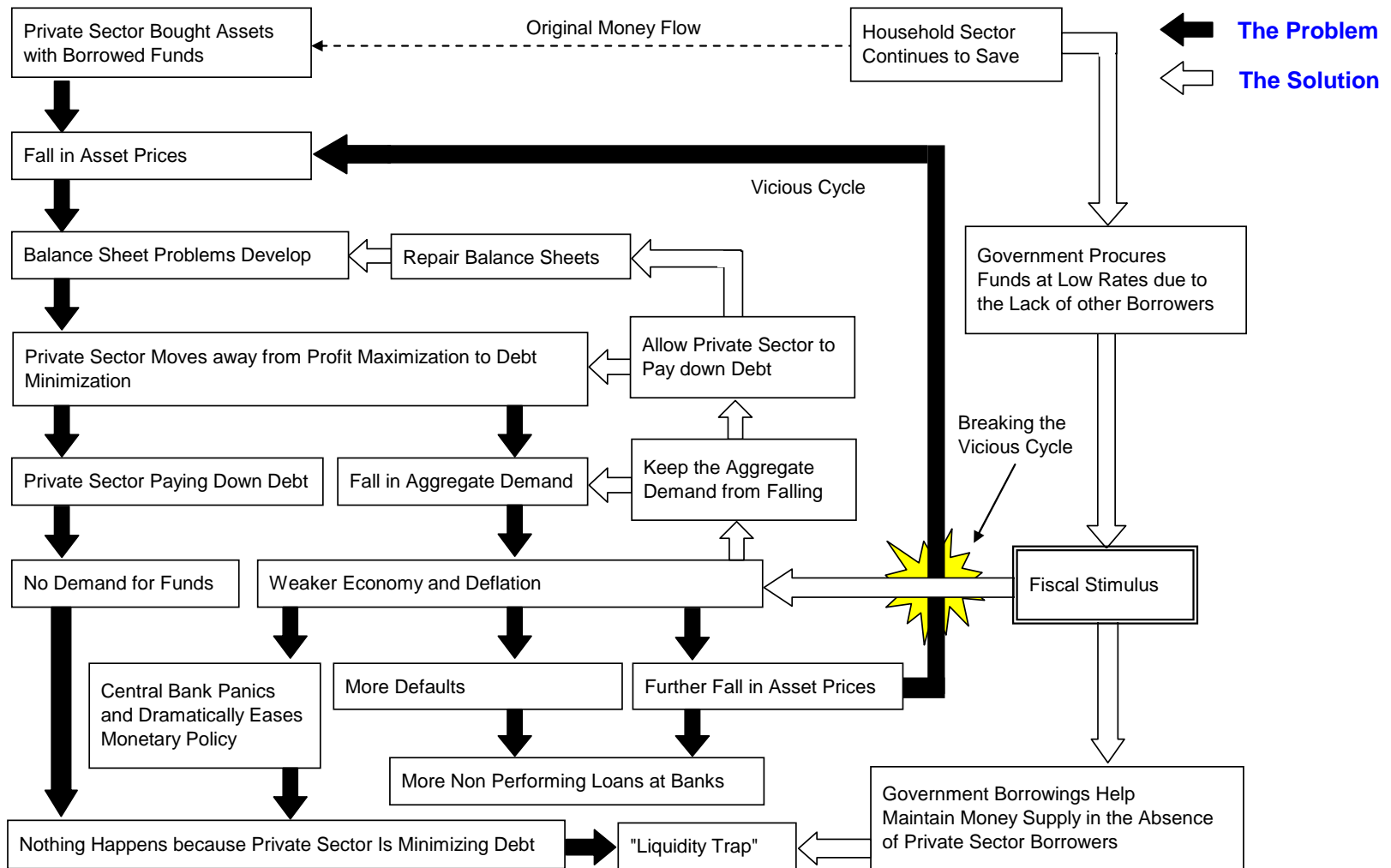
Exhibit 9. Premature Fiscal Reforms in 1997 and 2001 Weakened Economy, Reduced Tax Revenue and Increased Deficit



Source: Ministry of Finance, Japan

*: estimated by MOF

Exhibit 10. The Anatomy of Balance Sheet Recession and Its Cure



Source: Richard Koo, *Balance Sheet Recession: Japan's Struggle with Uncharted Economics and its Global Implications*, John Wiley & Sons, Singapore 2003

Exhibit 11. Four Kinds of Banking Crises and Their Remedies

		Yang Normal demand for funds	Yin Weak or non-existent demand for funds
		Banking Crisis	Localized
Systemic	(II) Slow NPL disposal Fat spread		(IV) Slow NPL disposal Capital injection

Type (I): 1989 S&L crisis

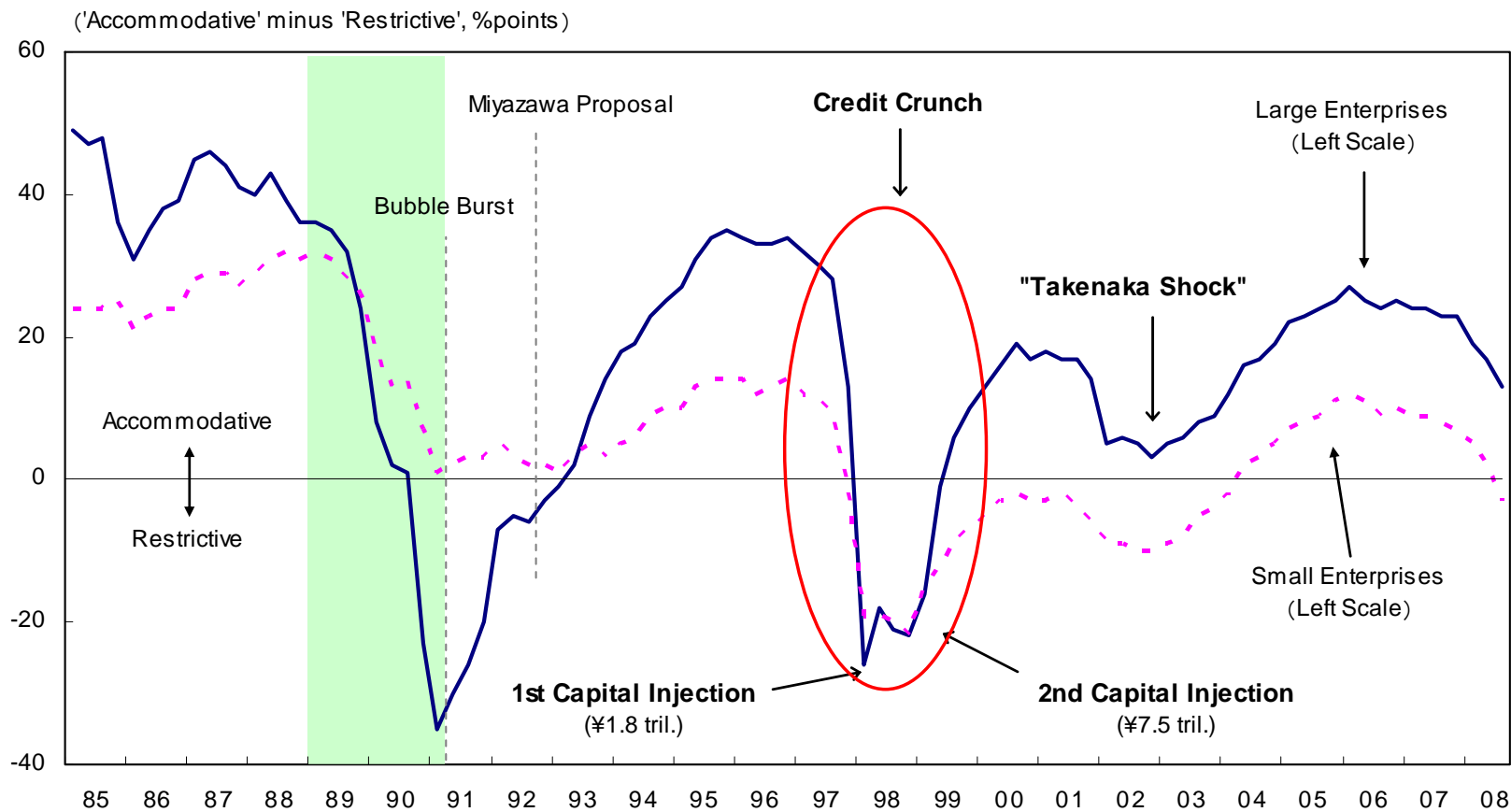
Type (II): 1982 Latin America debt crisis, nationwide credit crunch in the US between 1991 and 1993, and the Nordic banking crisis in the early 1990s

Type (III): Japan prior to 1995 (for example, problems at two credit cooperatives)

Type (IV): Japan since 1996, Taiwan since 2000, the US Great Depression of the 1930s, and US and UK subprime crisis since 2007

Exhibit 12. Two Capital Injections Ended the Credit Crunch in Japan

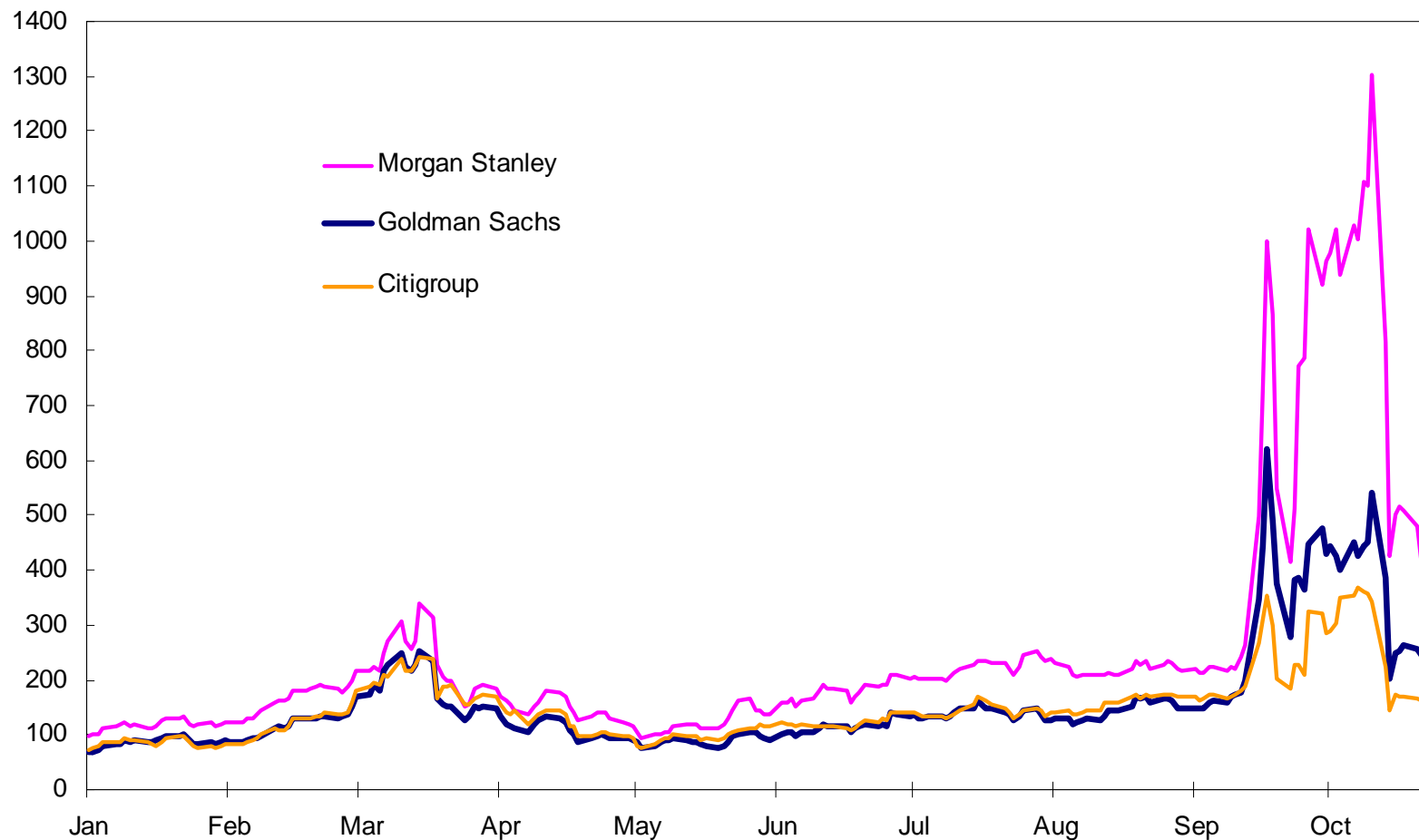
Bankers' Willingness to Lend as Seen by the Borrowers, and the Actual Credit Extended by the Banks



(Shaded areas indicate periods of BOJ monetary tightening)

Source: Bank of Japan, "Tankan".

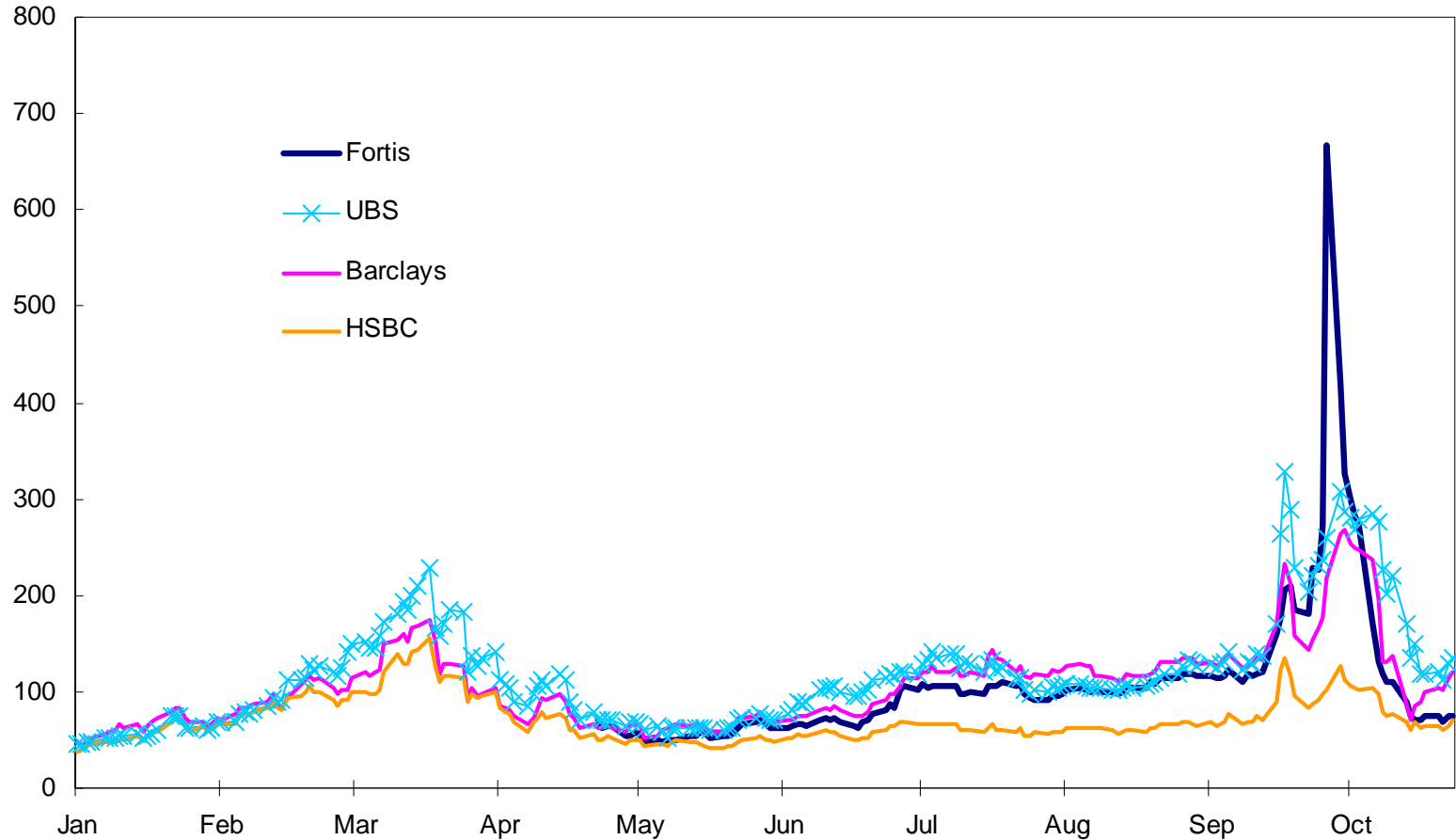
Exhibit 13. CDS Spreads of US Banks Have Shrunk after Capital Injection



Source: Bloomberg

Note: As of Oct. 23, 2008.

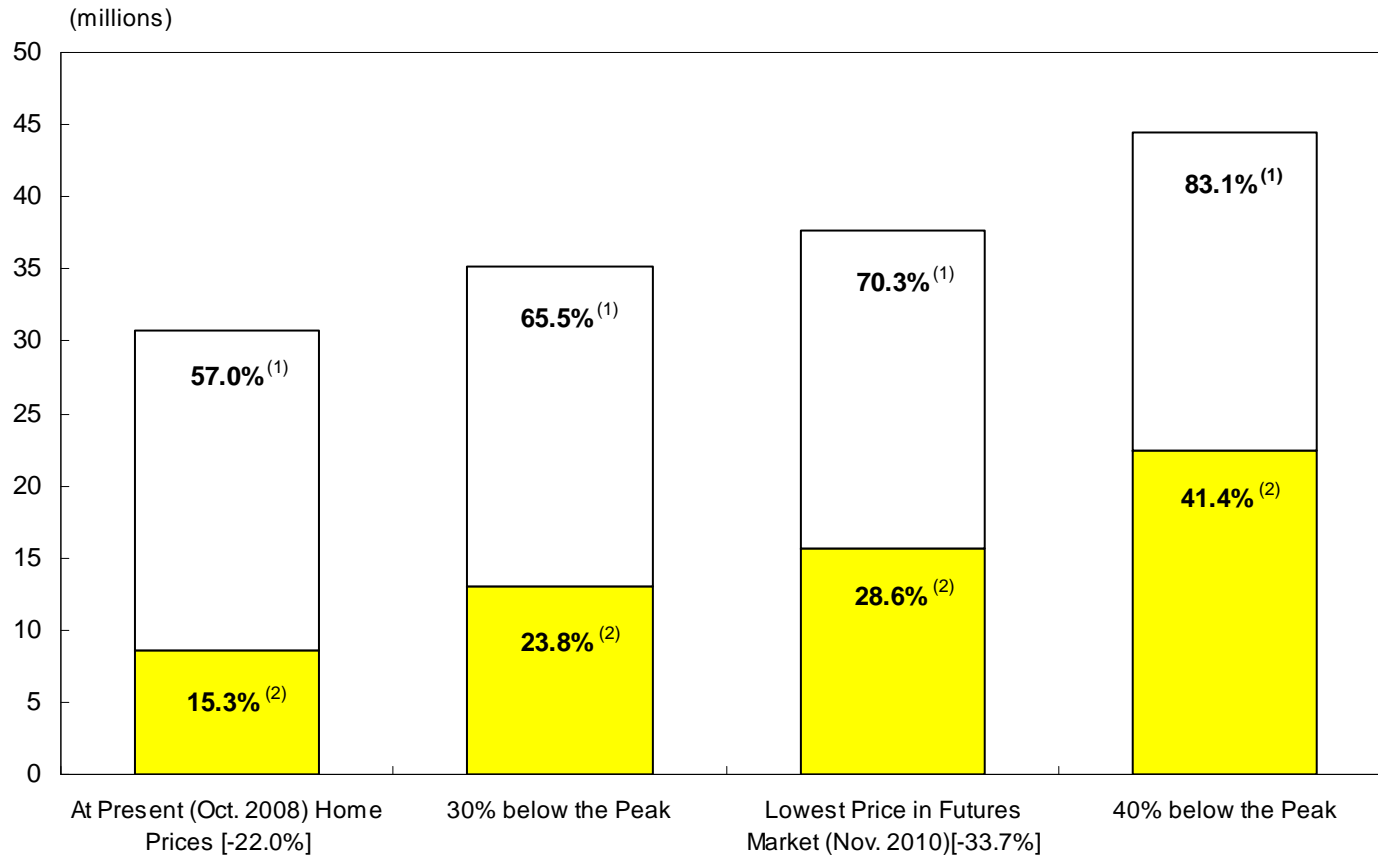
Exhibit 14. CDS Spreads of European Banks Have Shrunk after Capital Injection



Source: Bloomberg
Note: As of Oct. 23, 2008.

Exhibit 15. Percentage of House Purchases that May Lead to “Return the Key”

For Houses Bought before August 2008

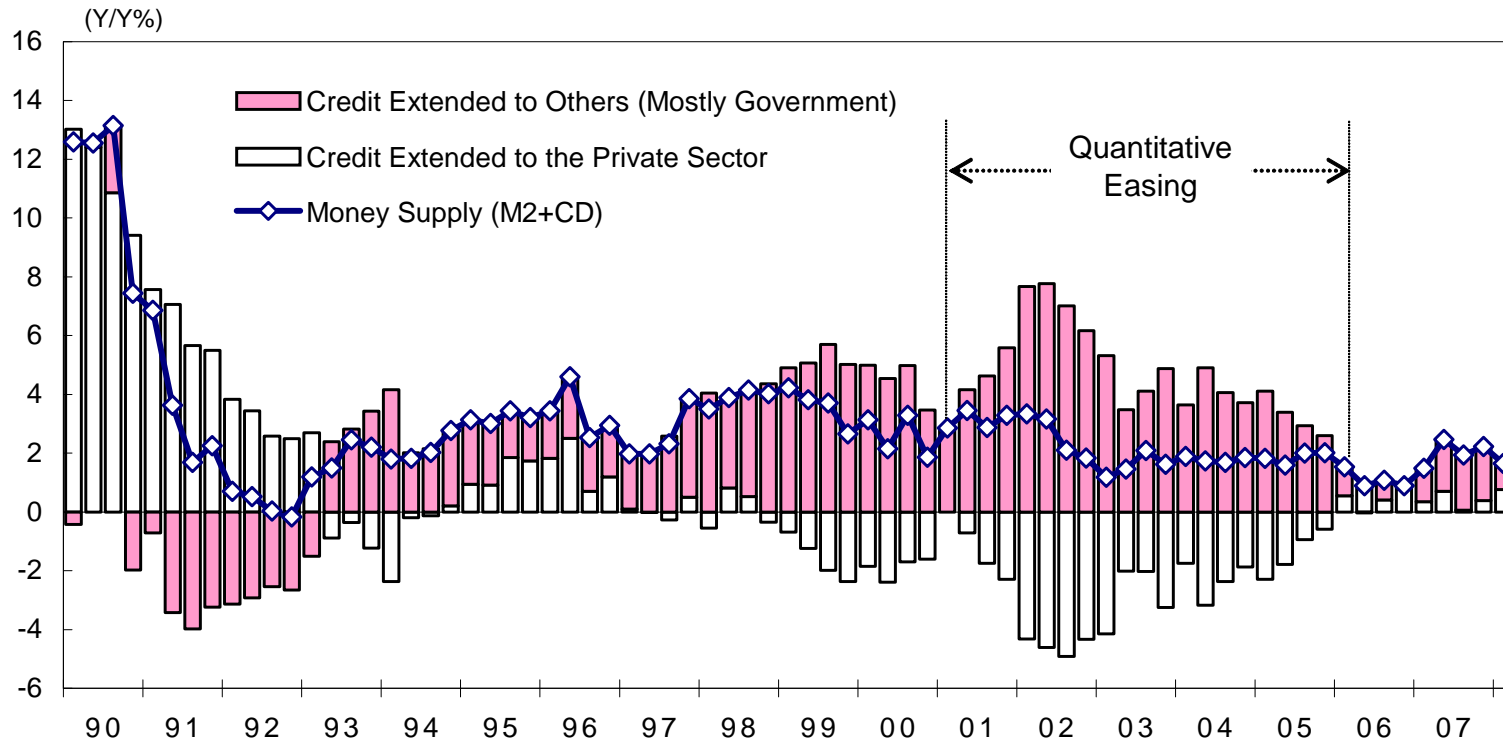


Source: Nomura Research Institute estimates from the data of US Department of Commerce, National Association of Realtors, S&P "S&P/Case-Shiller® Home Price Indices", and Bloomberg (as of Oct. 23, 2008).

Notes: (1) Maximum share of underwater mortgages assuming that the total number of mortgages is 53 million.

(2) As (1), but with a 10% downpayment.

Exhibit 16. Japan's Money Supply Has Been Kept Up by Government Borrowings (I)



Sources: Bank of Japan "Monetary Survey", "Changes in Money Stock (M2+CD), and Credit Statistics"

Notes: "Credit extended to others"= (1) public sector + (2) foreign assets (net) + (3) others.

(1) Public Sector = credit to the government (net) + credit to regional public sector bodies + credit to public corporations

(3) Others= (money + quasi-money + CD) - (foreign assets (net) + domestic credit).

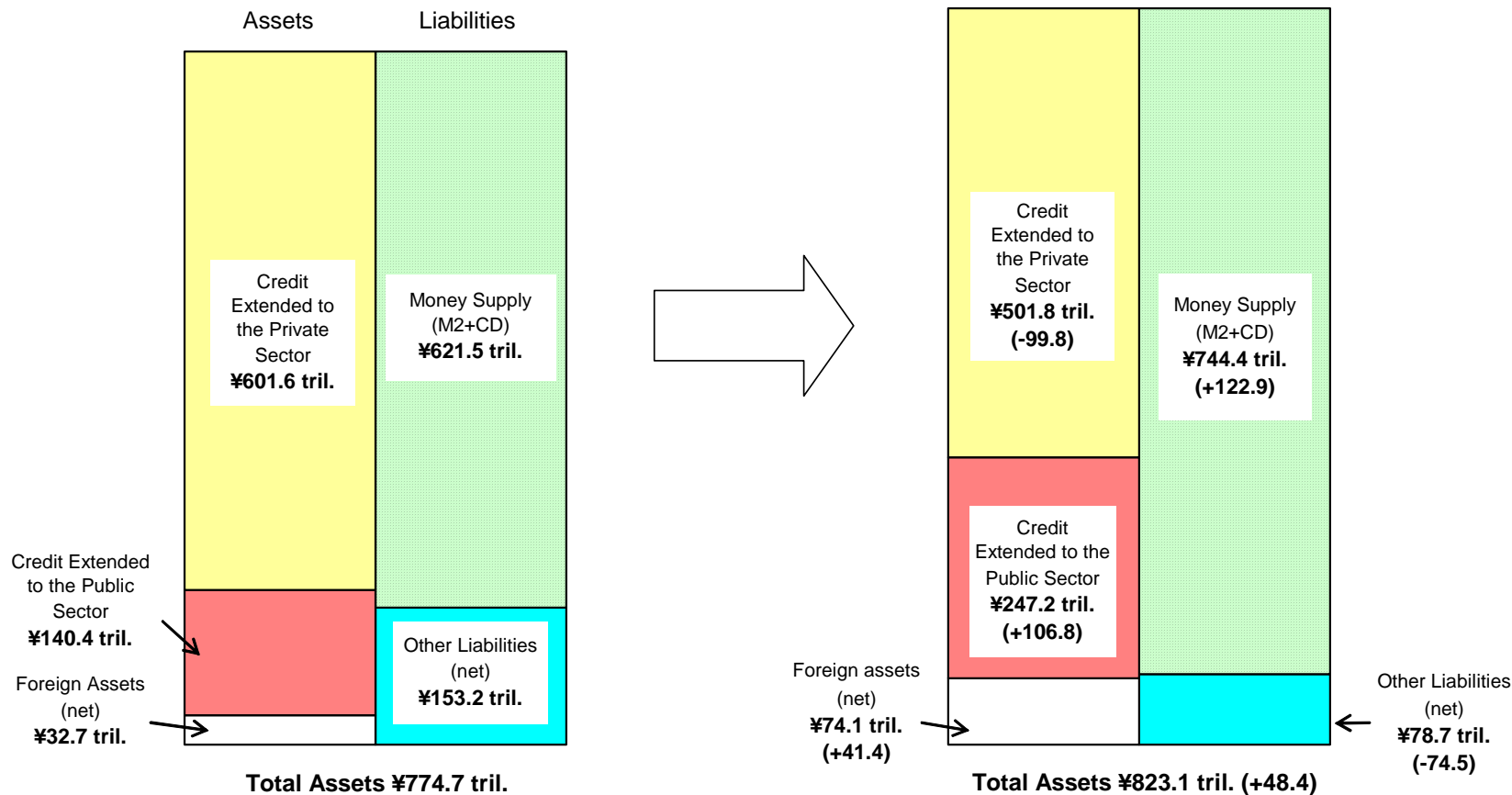
Therefore, increase or decrease in "Credit extended to others" will include impact of increase/decrease in public sector debt, increase/decrease in bank debentures issued by private sector banks and deposits of financial institutions, and errors in data.

Exhibit 17. Japan's Money Supply Has Been Kept Up by Government Borrowings (II)

Balance Sheets of Banks in Japan

December 1998

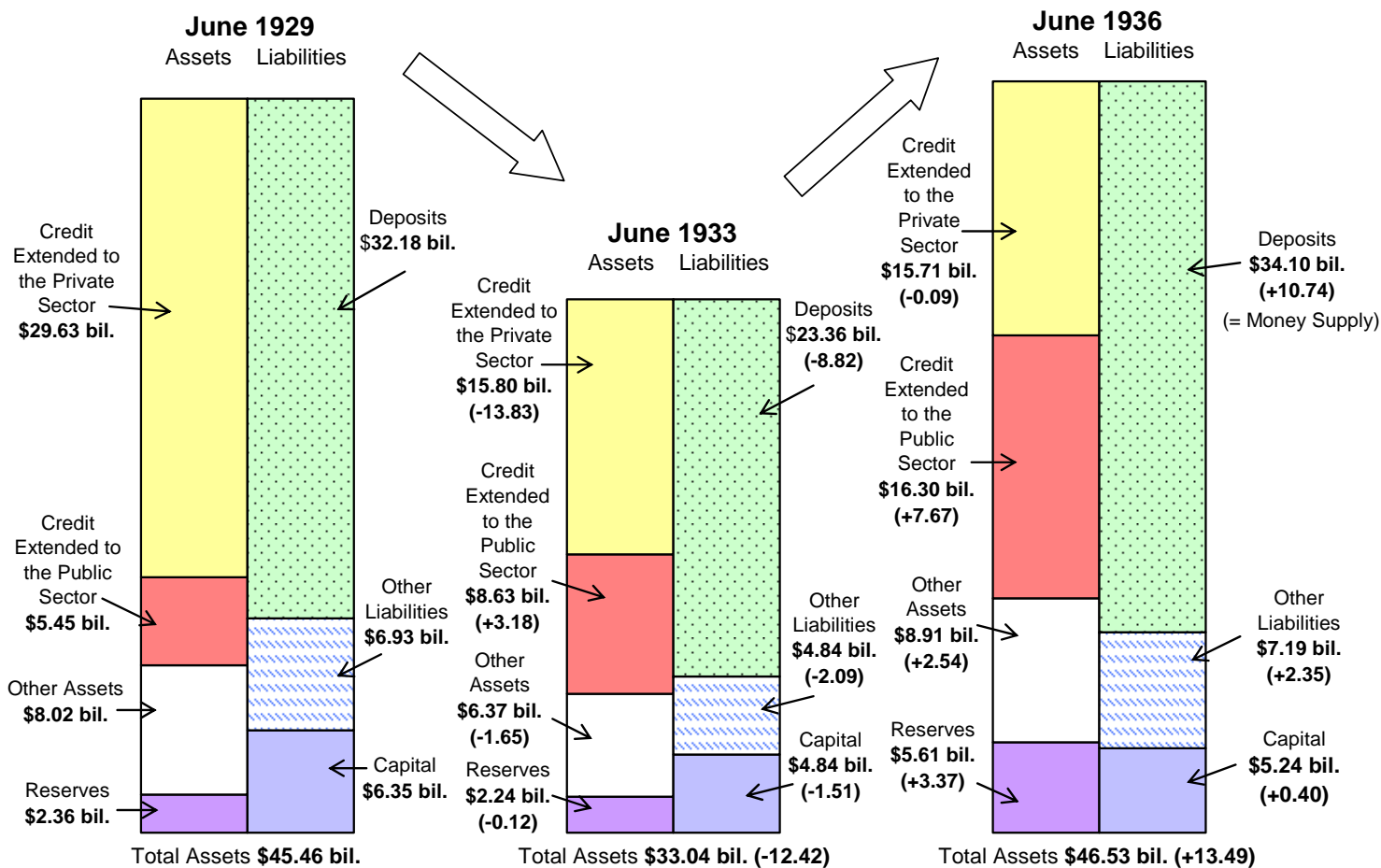
December 2007



Source: Bank of Japan "Monetary Survey"

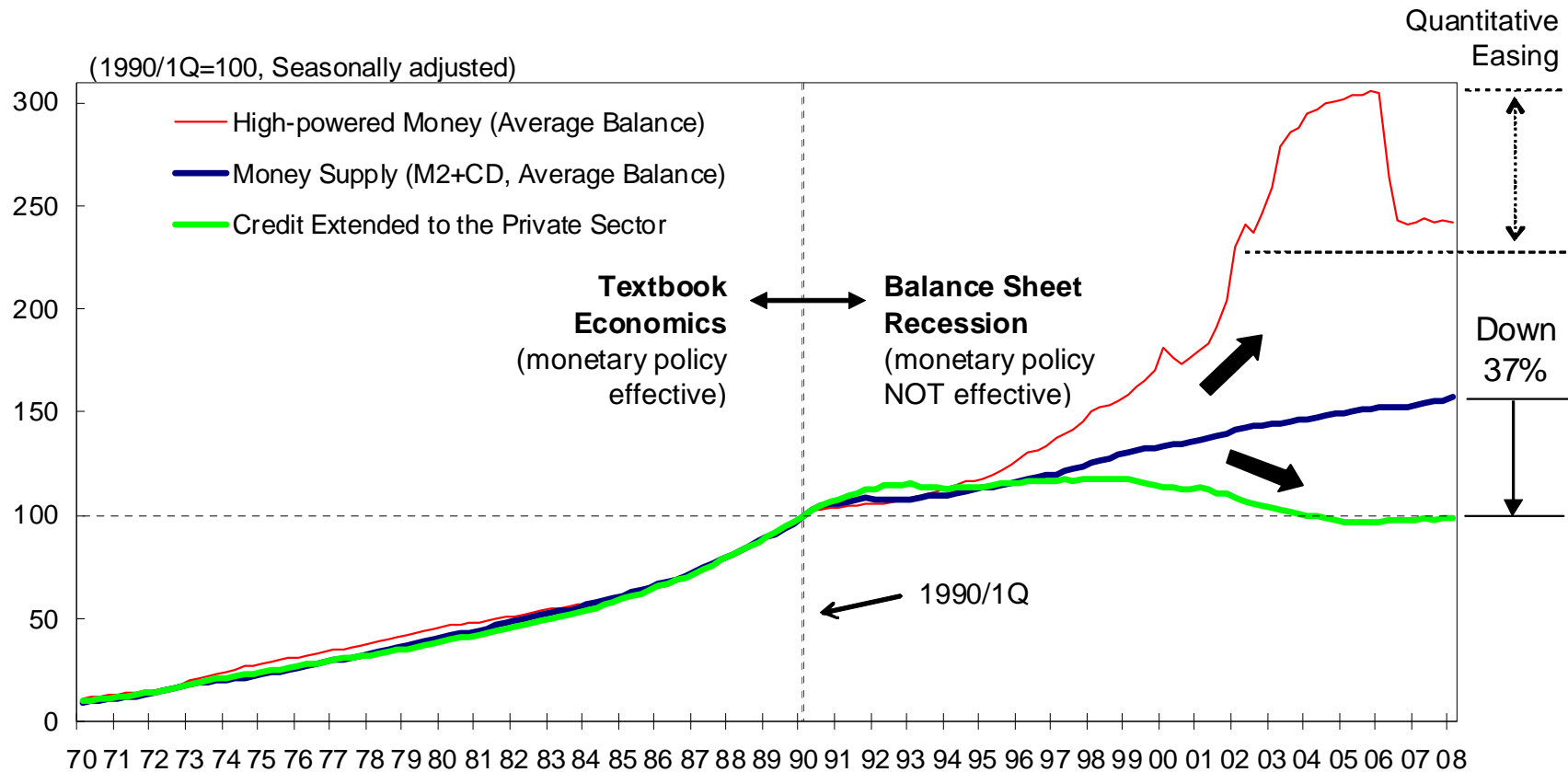
Exhibit 18. US Money Supply Growth after 1933 Was also Made Possible by Government Borrowings

Balance Sheets of All Member Banks



Source: Board of Governors of the Federal Reserve System (1976) *Banking and Monetary Statistics 1914-1941* pp.72-79

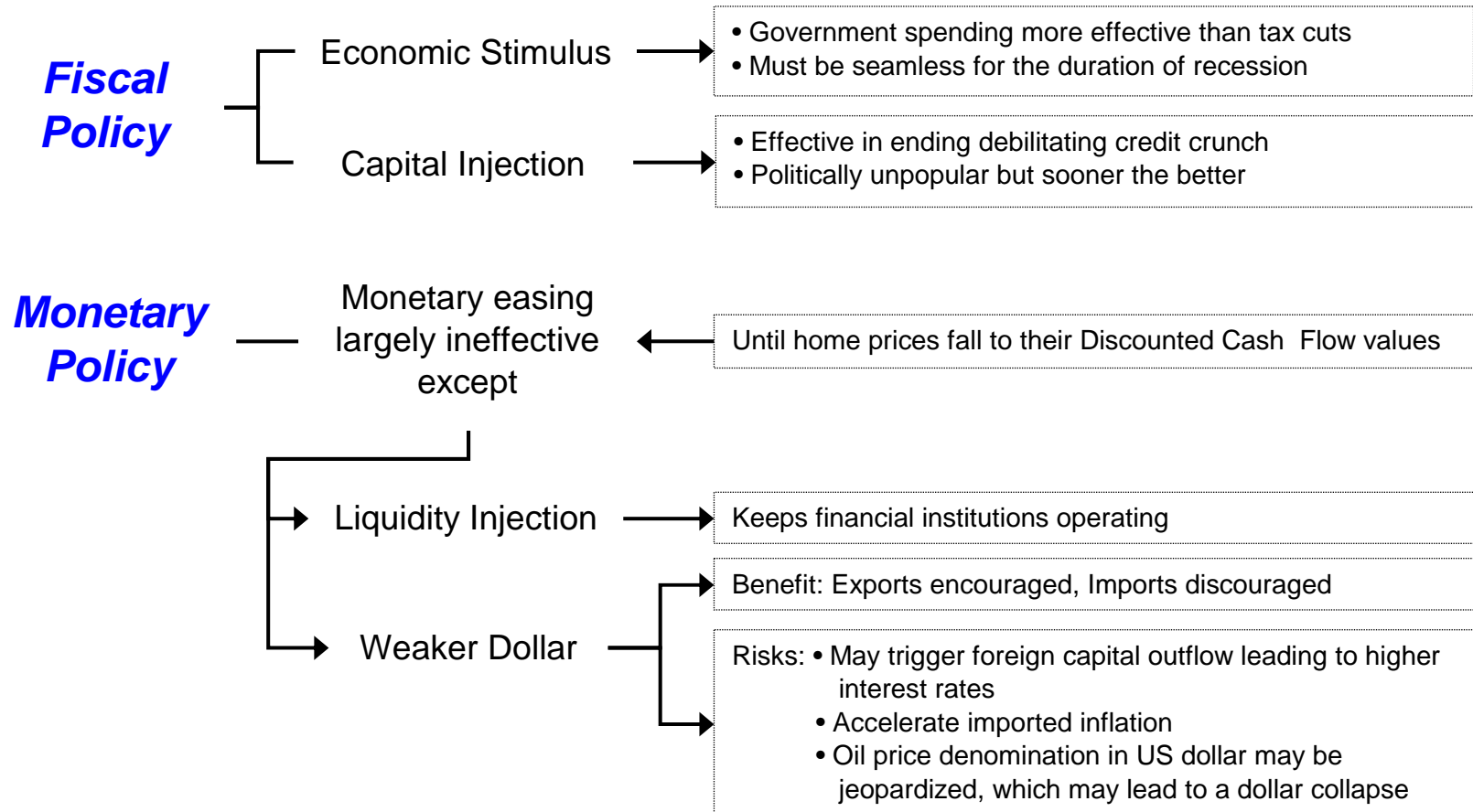
Exhibit 19. Monetary Aggregates Behave Totally Differently under Balance Sheet Recession



Note: Private sector borrowings seasonally adjusted by Nomura, adjustments made for discontinuities in line with BOJ's "Monetary Survey"

Source: Bank of Japan

Exhibit 20. Summary of US Policy Options Based on Japan's Experience



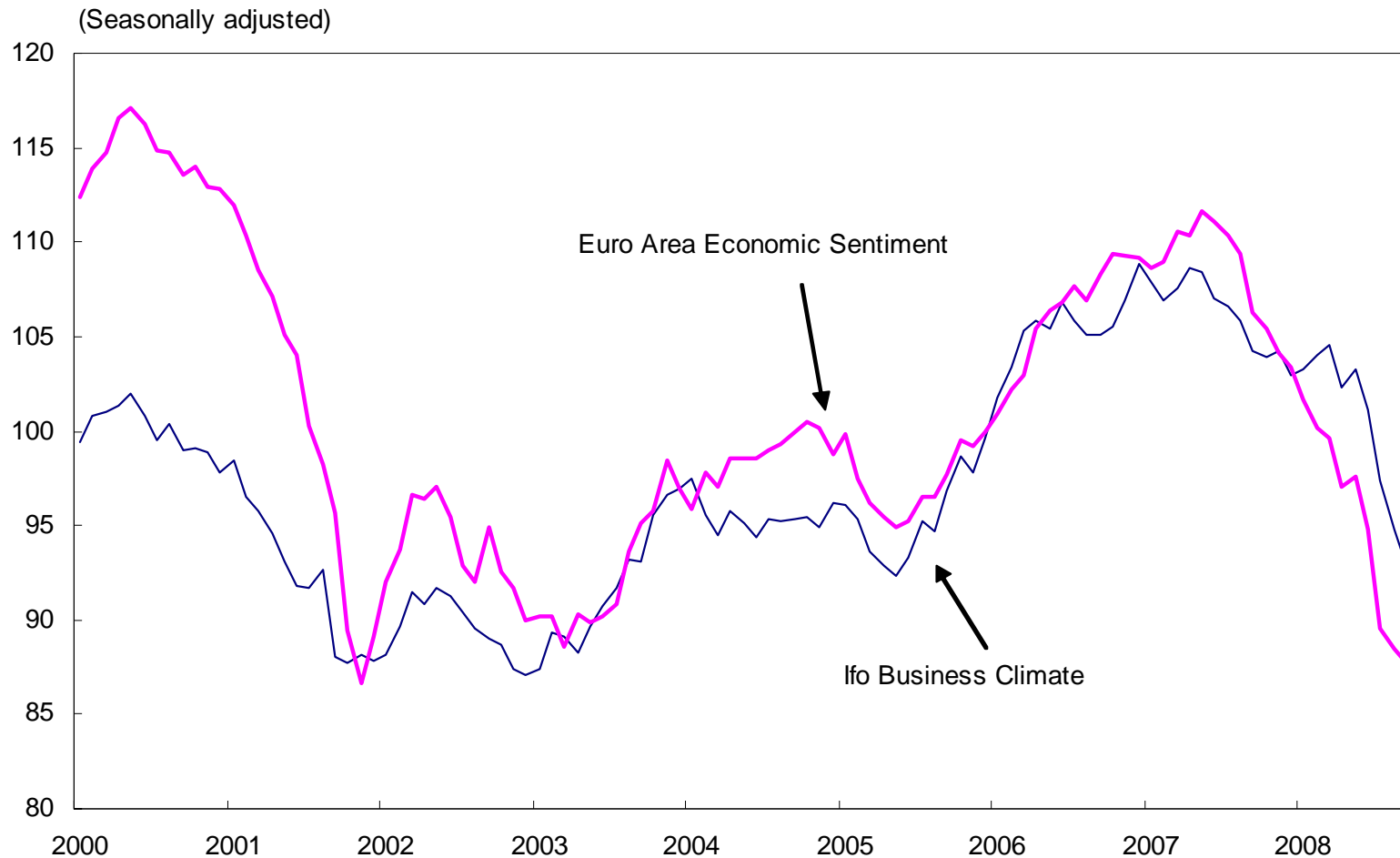
Source: Nomura Research Institute

Exhibit 21. As for the Accountability...

All rating agencies who gave high ratings to subprime-related securities should be required to display the following notice in all of their public announcements for the next 50 years.

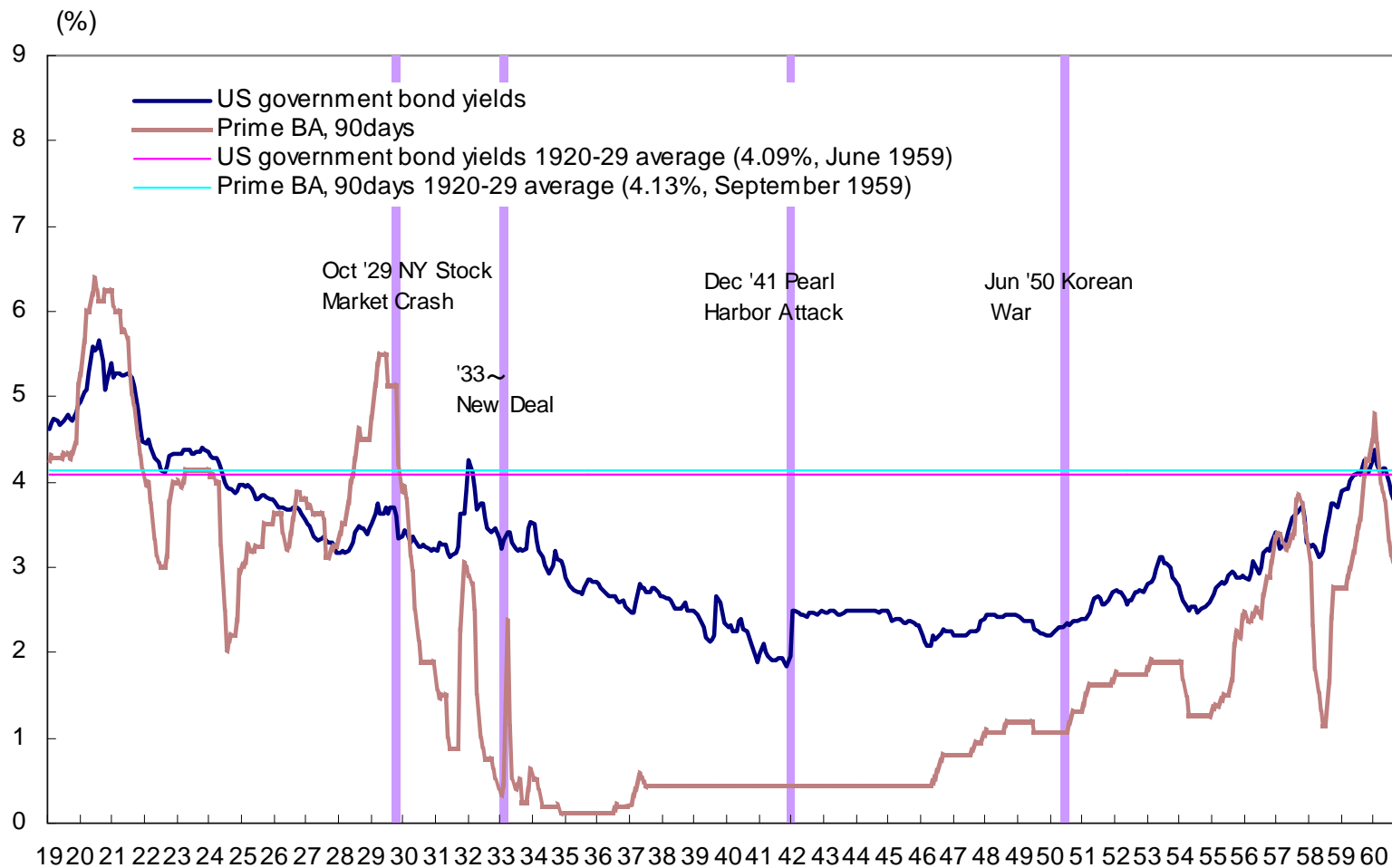
Warning: Subprime crisis has proven that ratings produced by this agency are sometimes worthless. Investors are therefore advised not to rely entirely on ratings produced by this agency in making investment decisions.

Exhibit 22. EU Economic Sentiments Are Worsening



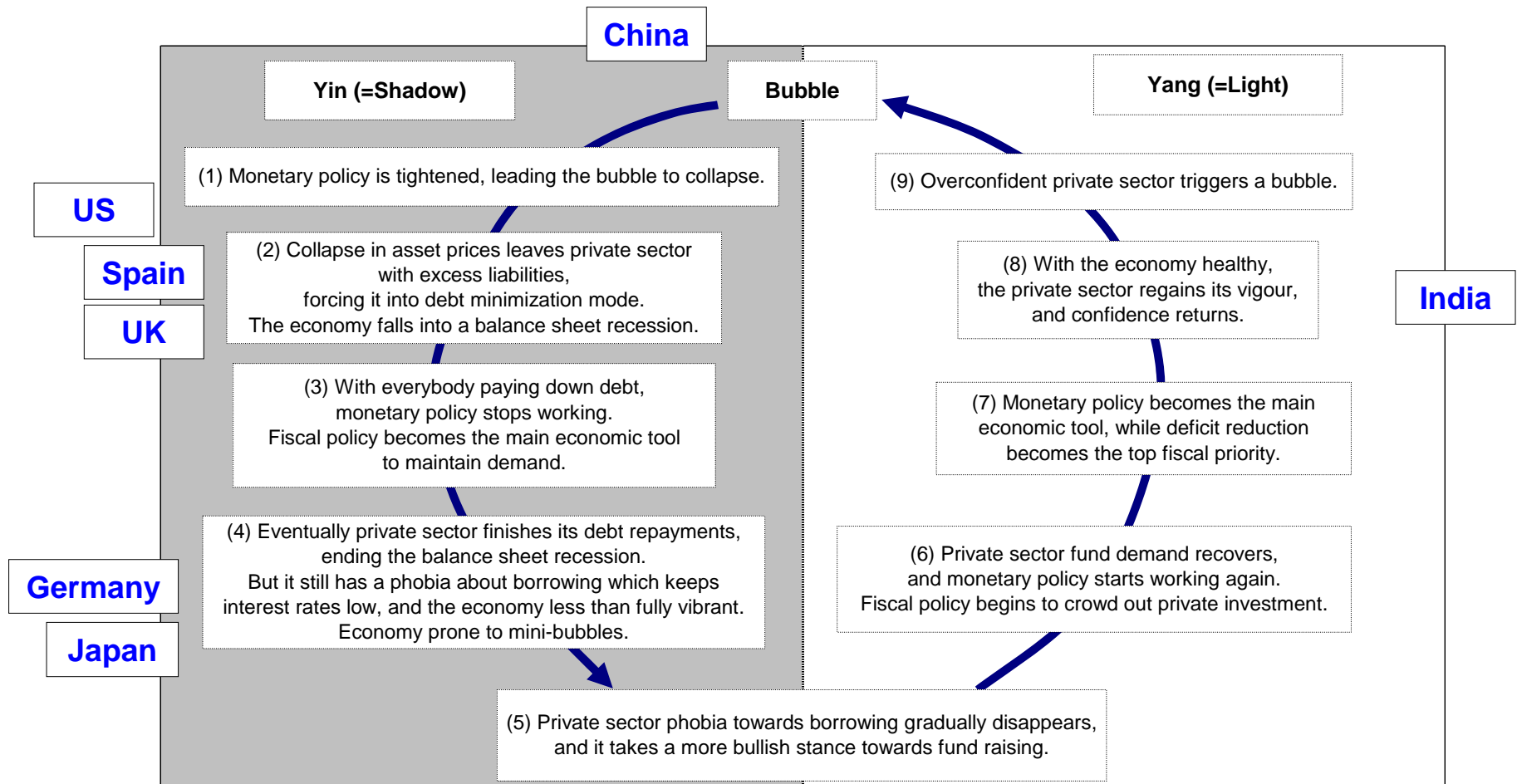
Source: Ifo Business Survey, European Commission

Exhibit 23. US Interest Rates Took 30 Years to Return to Their 1920s Level



Source: FRB, *Banking and Monetary Statistics 1914-1970 Vol.1, pp.450-451 and 468-471, Vol.2, pp.674-676 and 720-727*

Exhibit 24. Yin Yang Cycle of Bubbles and Balance Sheet Recessions



Source: Richard Koo, *The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession*, John Wiley & Sons, Singapore, April 2008 p.160.

Exhibit 25. Contrast Between Yin and Yang Phases of a Cycle

		Yang	Yin
1) Phenomenon		Textbook economy	Balance sheet recession
2) Fundamental driver		Adam Smith's "invisible hand"	Fallacy of composition
3) Corporate financial condition		Assets > Liabilities	Assets < Liabilities
4) Behavioral principle		Profit maximization	Debt minimization
5) Outcome		Greatest good for greatest number	Depression if left unattended
6) Monetary policy		Effective	Ineffective (liquidity trap)
7) Fiscal policy		Counterproductive (crowding-out)	Effective
8) Prices		Inflation	Deflation
9) Interest rates		Normal	Very low
10) Savings		Virtue	Vice (paradox of thrift)
11) Remedy for Banking Crisis	a) Localized	Quick NPL disposal Pursue accountability	Normal NPL disposal Pursue accountability
	b) Systemic	Slow NPL disposal Fat spread	Slow NPL disposal Capital injection

Source: Richard Koo, *The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession*, John Wiley & Sons, Singapore, 2008