Credit Easing

- Japan's Experiences under Financial Crisis and Deflation -

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1. The World According to ZIRP
- Monetary policy options under zero-bound

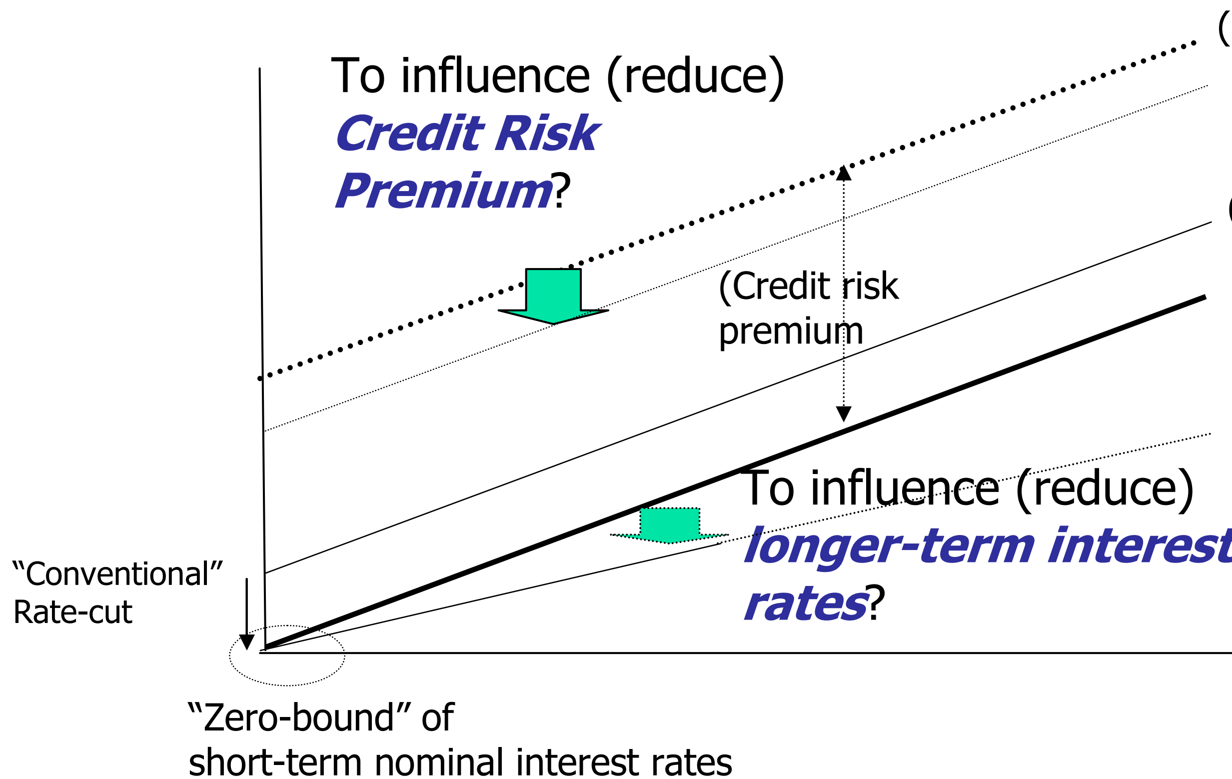
The World According to ZIRP (Zero-Interest-Rate Policy)

- **Policy rates (=the CB's conventional instrument) in advanced economies are coming close to "zero-bound".**

(Central Bank Policy Rates in Advanced Economies) (%)

	U.S.	Euro Area	Japan	U.K.	Canada	Sweden	Switzer-land
At the end of 2007	4.25	4.0	0.5	5.5	4.25	4.0	2.25-3.25
Now	0-0.25	1.5	0.1	0.5	0.5	1.0	0.0-0.75

Monetary policy options beyond "zero-bound" ("Unconventional" measures)



or...

✓To influence (raise) ***inflation expectation***?

✓To ***monetize*** fiscal spending?

✓To increase ***monetary aggregates***?

Possible monetary policy tools beyond "zero-bound"

- ✓ **To promise to maintain low o/n rates ?**
  - Shaping Interest-Rate Expectations by announcing a time path of o/n rate that is different from the market's expectations.
- ✓ **To purchase financial assets of longer maturities ?**
- ✓ **To purchase financial assets with credit risks ?**
- ✓ **To encourage financial institutions' credit creation ?**
- ✓ **To expand reserves and the size of CB's B/S?**

"Credit Easing" in broad definition

Altering the Composition of CB's B/S

"Credit Easing in narrow definition

“the Federal Reserve has taken additional steps to improve the functioning of credit markets and to increase the supply of credit to households and businesses – a policy strategy that I have called “credit easing.”

(Chairman Ben S. Bernanke, Feb 18, 2009)

Monetary policy tools beyond "zero-bound"

- Market Operation
  = Exchanges of Central Bank Reserves and Other Assets
- Under "Zero-Bound", reserves and short-term risk-free assets (e.g. TBs) are becoming "Perfect Substitutes".

⇨ *Exchanges of them may not have stimulus effects.*

⇩

To exchange reserves with <u>something different from reserves ?</u>

✓ Financial assets of longer maturities?

✓ Financial assets with credit risks?

Some Considerations

- ***"Credibility" of the Announcement?***

  - In order for the central bank's announcement to be effective, it has to be "credible".

- ***Market Distortion and Moral Hazard?***

  - In principle, risk premiums yield curve should reflect market views on risks and the future course of interest rates.

- ***Monetary policy or fiscal policy?***

  - Credit losses made by a central bank's operation may constitute income transfers among people without due process. (How to satisfy the central banks obligations in a democracy?)

- ***How to exit？(how to unwind credit easing?)***

  - If a central bank once purchases "unconventional" assets (especially those of longer maturities), they will have to sell them when the economy and prices pick up.

2. Japan's Experiences

- Liquidity Provision under Financial Crisis
- ZIRP (Zero-Interest-Rate Policy) and
  QEP (Quantitative Easing Policy)

Liquidity Provision under Financial Crisis

- ***Provision of liquidity at longer terms***
- ***Broadening the range of eligible collateral***
- ***Provision of liquidity to wider counterparties***

+

- ***Reduction of the central bank lending rate***
- ***Sharing of information on liquidity***

↓

To ensure financial institution adequate access to liquidity

(Appendix 1)
"New Measures for Money Market Operations" (Nov. 13, 1998)

"The lending attitude of private financial institutions has generally tightened as they face a severe hardship in fund-raising and the worsening performances of borrowers. In addition, capital market participants have become more sensitive to credit risks. Therefore, borrowers will likely to encounter more difficulties in raising funds, especially toward the end of this CY and the end of this FY."

1. Expansion of CP repo operations

- BoJ will expand the size of CP repo by enlarging the scope of eligible CPs and speeding up the process of eligibility evaluation. (Maturity date of the eligible CP:3 months 1 year)

2. Temporary lending facility to support firms' financing activities

- Refinancing 50% of the increase in loans provided by each financial institution during the fourth quarter of the year. BoJ will accept Japanese Government bonds as collateral, as well as private corporations' debt obligations which the Bank determines eligible (bills <including CPs>, corporate bonds and loans on deeds).

3. A new market operation scheme which utilizes corporate debt obligations as eligible collateral

- BoJ will purchase bills issued by financial institutions through a bidding process against pooled collateral solely composed of corporate bonds and loans on deeds.

(Appendix.2)
"Enhancement of Money Market Operations" (Oct.13, 1999)

BoJ decided, in maintaining its "zero interest rate policy", to flexibly use a wider range of money market operations so as to assure further permeation of the effects of monetary easing, paying due consideration to developments in financial markets including the foreign exchange market.

1. Use of a wider range of money market operations

(1) Introduction of outright operations using short-term government securities
(2) Expansion of the range of government securities for repo operations

BoJ will add 2-year government securities for repo operations effective today.

2. Accommodation of year-end fund demand through flexible operations

(1) Year-end fund provision utilizing a full range of measures

BoJ will fully effect operations not only utilizing government securities but also private corporate debt obligations.

(2) Increase in the number of counterparties being offered

With a view to smoothly providing year-end funds, the Bank will make offerings to all eligible counterparties for repo and CP operations, instead of using the current rotation system.

BOJ's policy measures under ZIRP(1999-2000) and QEP (2001-2006)

- To commit to continue QEP while CPI inflation is negative (2001-2006)
- To increase the amount of reserves and the size of the Balance sheet (2001-2006)
- To increase outright purchase of long-term government bonds (2001-)
- To purchase asset-backed securities (ABS & ABCP). (2003-2006)
- To purchase stocks held by banks. (2002-)

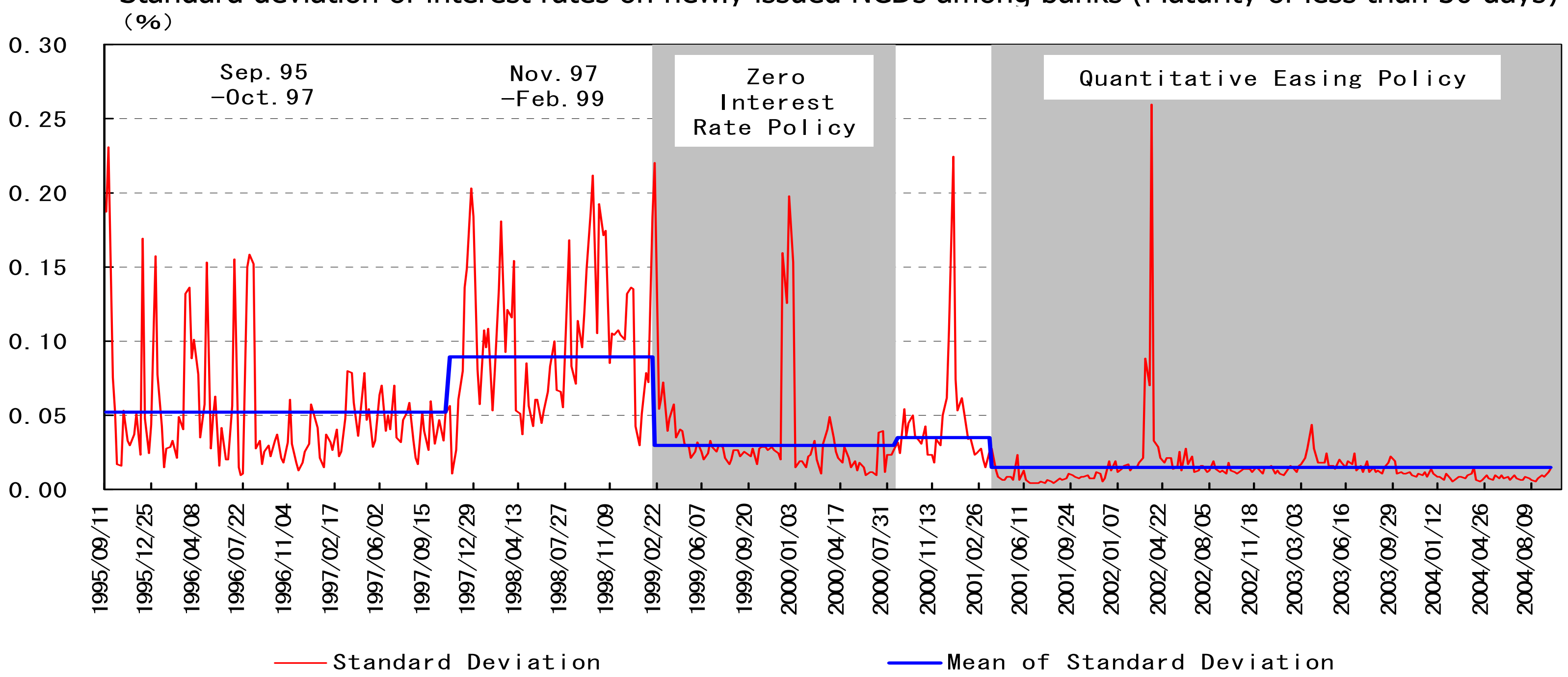
(Appendix 3)The Fed's announcement (from "Press Release" on Dec. 16, 2008)

- "the Committee anticipates that weak economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time."
- "The focus of the Committee's policy going forward will be to support the functioning of financial markets and stimulate the economy through open market operations and other measures that sustain the size of the Federal Reserve's balance sheet at a high level."
- "over the next few quarters the Federal Reserve will purchase large quantities of agency debt and mortgage-backed securities to provide support to the mortgage and housing markets"
- "The Committee is also evaluating the potential benefits of purchasing longer-term Treasury securities."
- "The Federal Reserve will continue to consider ways of using its balance sheet to further support credit markets and economic activity."

Liquidity provision and interbank credit risks

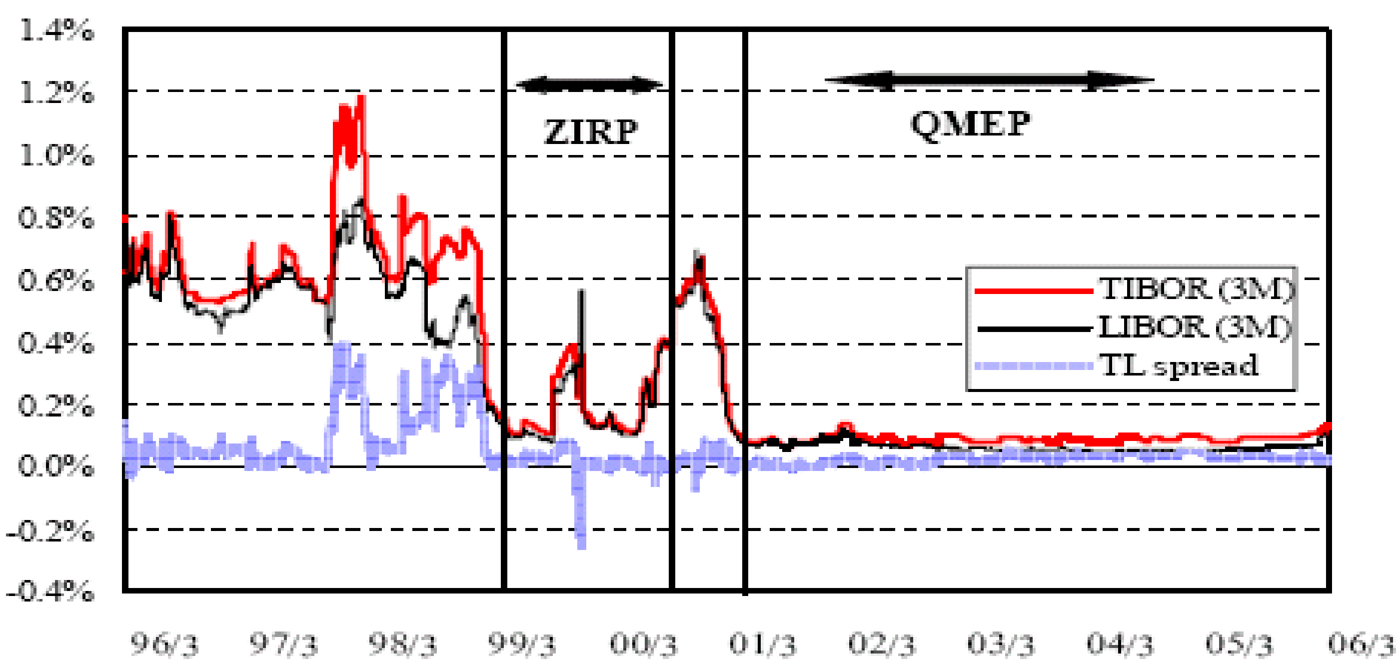
- Abundant liquidity provision under ZIRP and QEP seems to have slightly reduced interbank credit risk premiums.

Standard deviation of interest rates on newly issued NCDs among banks (Maturity of less than 30 days)



Baba, Nakashima, Shigemi & Ueda [2006]

(TIBOR, LIBOR and TL spread)

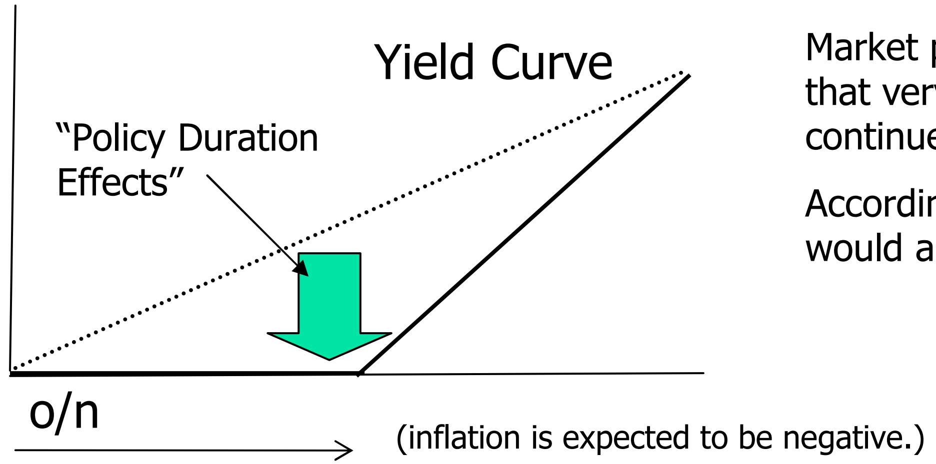


Note: TIBOR and LIBOR in this chart are denominated in euro yen.
Source: Bloomberg

Baba [2006]

"Policy duration effects" of the BOJ's commitment

- **BOJ's promise to maintain very low o/n rates was expected to help reduce longer-term interest rates.**



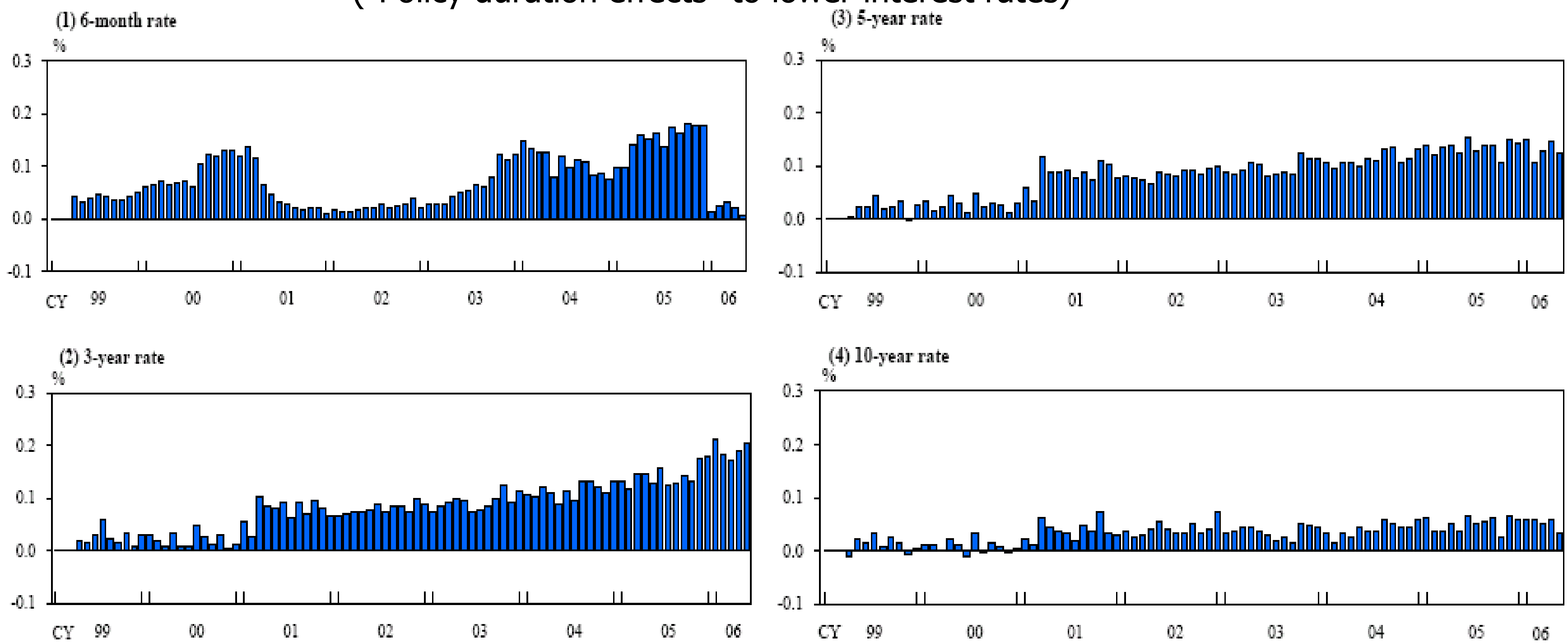
Market participants were able to believe that very low o/n rates would surely continue under the negative inflation rates.

Accordingly, interest rates of longer-term would also decline.

(If the BOJ uses an inflation forecasts instead of actual inflation, the effects of commitment would be weaker, because investors might think that the BOJ could raise the policy rate at any time by publishing positive inflation forecast.)

- According to empirical analyses, “Policy Duration Effects” were observed in the interest rates of relatively-short maturities.

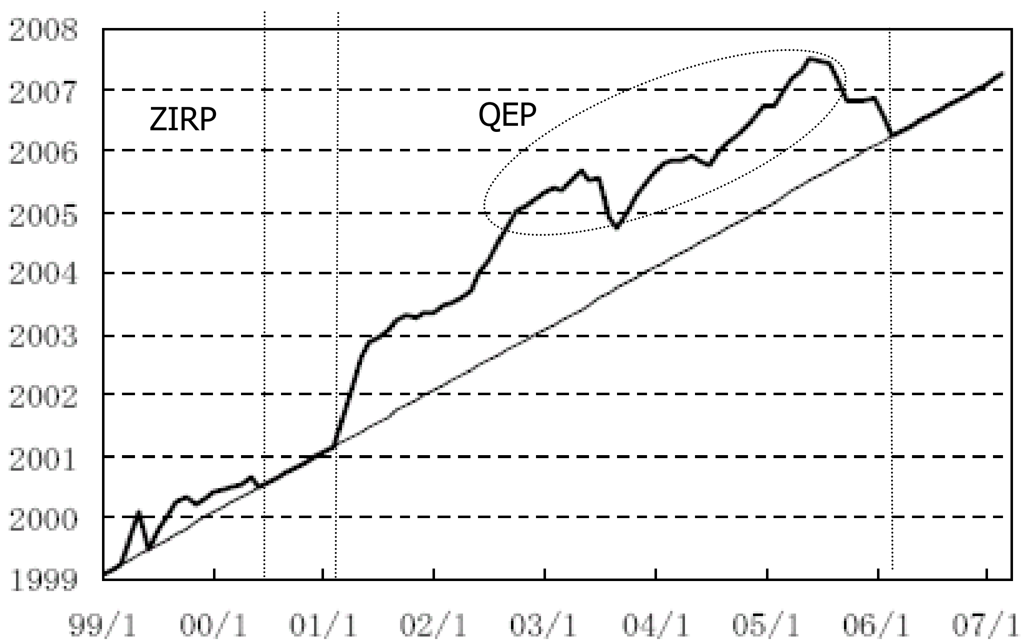
(“Policy duration effects” to lower interest rates)



Oda & Suzuki (2007)

▪ "Policy Duration Effects" were pronounced when the economy was on a recovery trend while inflation was still negative.

(Expected termination date of zero policy rates)

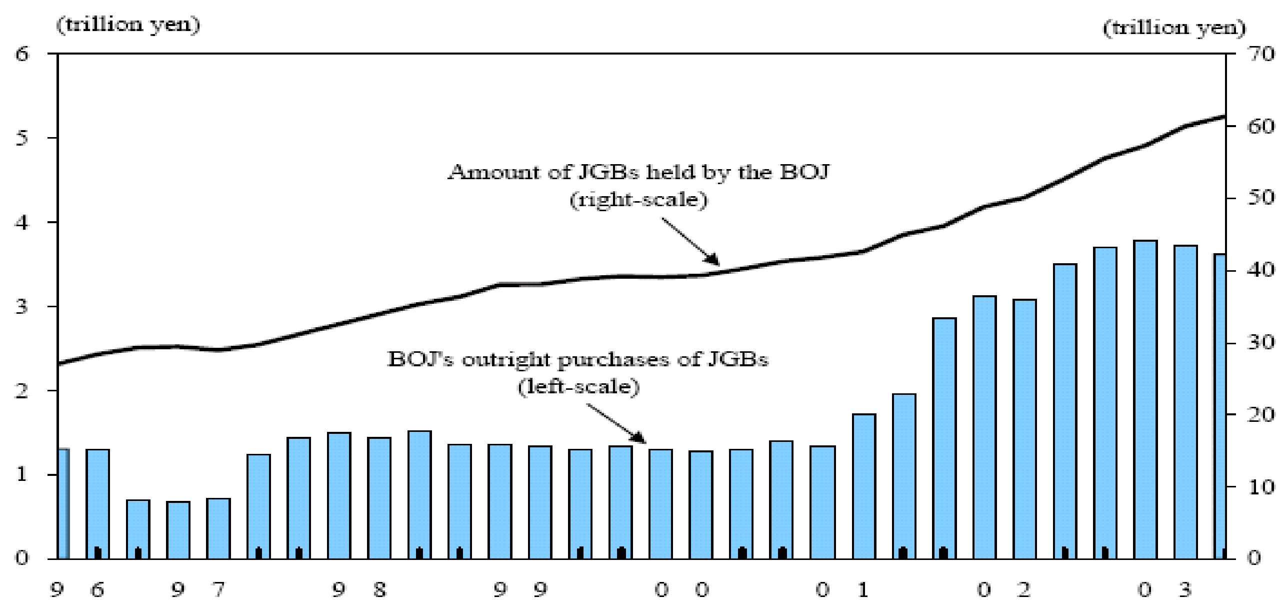


Ichiue & Ueno (2007)

The BOJ's Outright Purchase of Long-term Government Bonds (Aug. 2001-)

(The BOJ's Outright Purchase of Government Bonds)

Before Aug. 2001	Aug. 2001-	Dec. 2001-	Feb. 2002-	Oct. 2002-	Jan. 2009	Mar. 2009
0.4 bil. JPY per Month	0.6	0.8	1.0	1.2	1.4	1.8

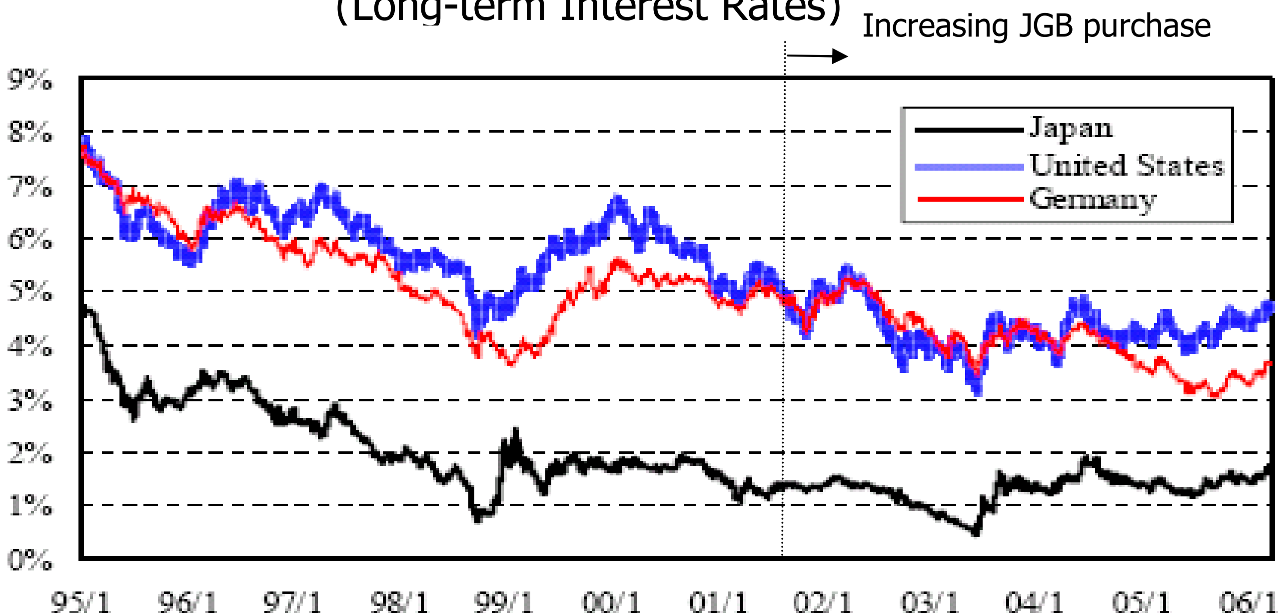


Source : Bank of Japan.

- It was not certain, from empirical evidences, to what extent the BOJ's purchases of JGB influenced long-term interest rates.

--In spite of "zero-bound", Japan experienced a substantial decline in long-term interest rates from 2001 to 2003. However, it might have been due to pessimistic views of market participants.

(Long-term Interest Rates)



Note: Interest rates are 10-year yields on government bonds in each country.
Source: Bloomberg

BOJ’s outright purchase of ABS and ABCP (Jul. 2003 – Mar. 2006)

- “Unconventional unconventional measures” -

1. Underlying assets

Underlying assets shall be those deemed to contribute to smooth financing of small and medium-sized enterprises. 50 % or more of the value of underlying assets shall be composed of assets related to small and medium-sized enterprises (i.e. enterprises with capital of less than 1 billion yen).

2. Creditworthiness

(a) ABS and synthetic-type securities: Rated BB or higher by all rating agencies (minimum of two ratings).

(b) ABCP: Rated a-1 by at least two rating agencies.

3. Maximum amount of purchases

1 trillion yen.

BOJ's outright purchase of Stocks Held by Banks (From Nov. 2002 to Sep.2004)

- ***Eligible banks:***

  Banks whose shareholding exceed its Tier I capital

- ***Eligible stocks:***

  Listed stocks with a rating of BBB- and above

- ***Period and Maximum amount of purchases:***

  Until end-September 2003 (later extended until end-September 2004)

  Maximum amount shall be 2 trillion yen (later increased to 3 trillion yen)

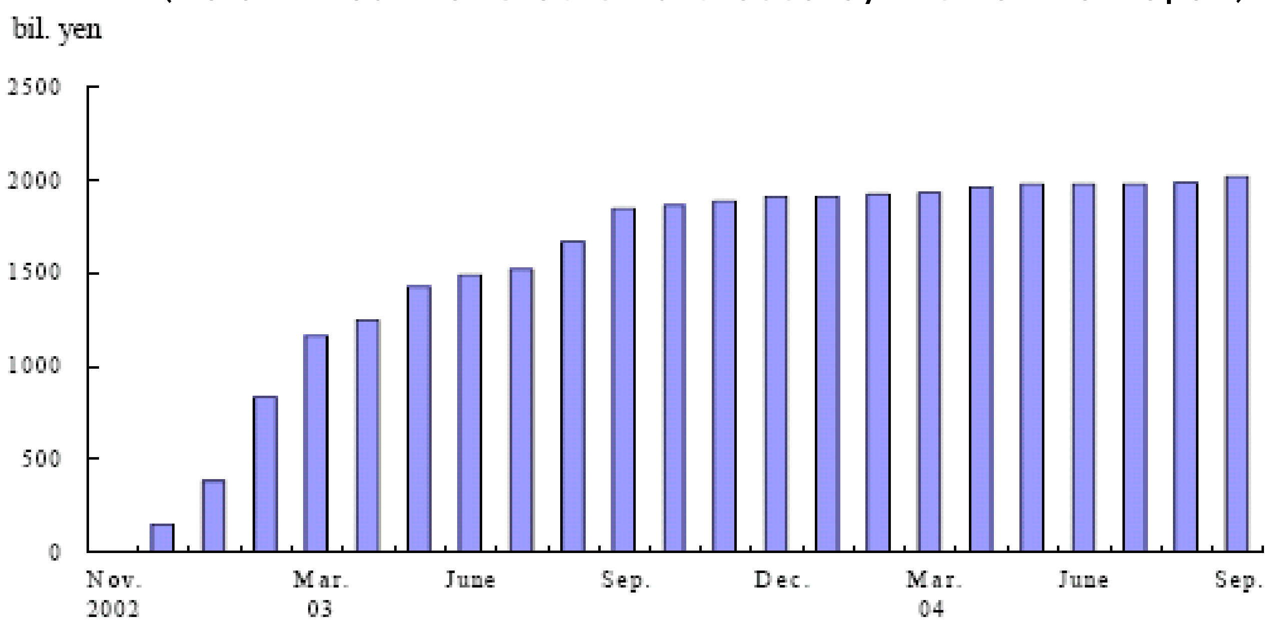
- ***Price:*** At the market price

Note: In accordance with the Bank of Japan law, the BOJ received the government's approval so as to execute stock purchasing.

BOJ's Stock Purchasing

- **The BOJ purchased stocks of around 2 tril. JPY, mainly in the early stage of the program.**

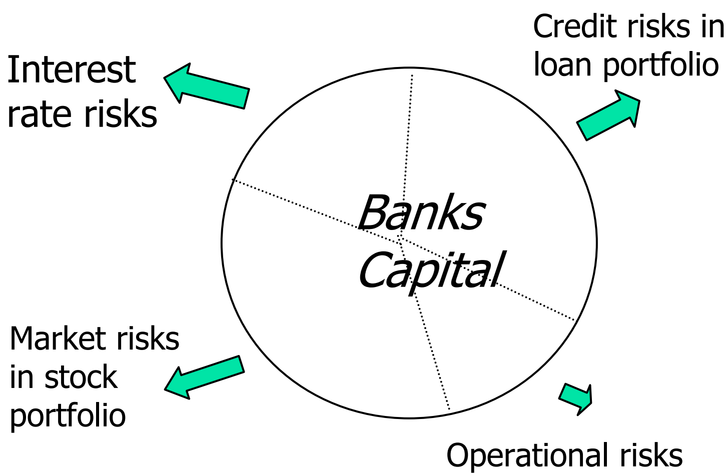
(Total Amount of Stocks Purchased by the Bank of Japan)



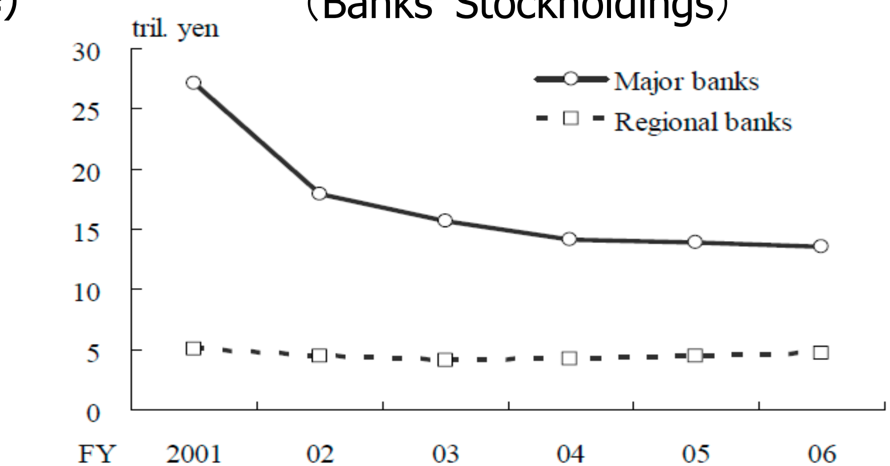
Source: Bank of Japan

- Since risks accompanying banks' stockholding were substantial, BOJ's stock purchasing was expected to alleviate banks' capital constraints (⇨similar to public fund injection).
- Major Banks reduced their stockholding especially during 2002.

(Banks' Risk Management Practice)



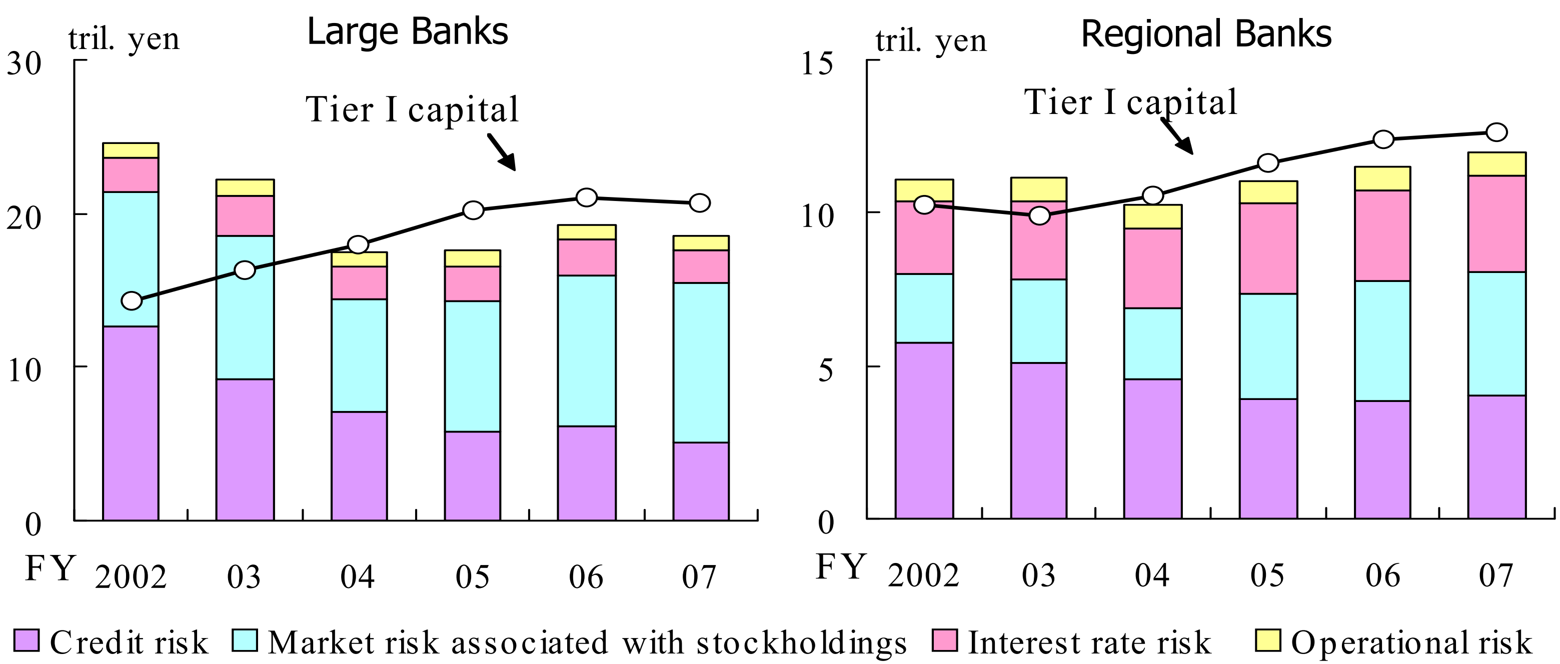
(Banks' Stockholdings)



Notes: *1.* Figures are based on acquisition prices.
2. On a consolidated basis.

Source: Bank of Japan

In accordance with the decline in banks' stockholding, banks have restored their risk-taking capacity.



Source: Bank of Japan, "Financial System Report" (Sep. 2008)

(Appendix 4) The Case of Yamaichi Securities Co.
- BOJ's emergency liquidity provision -

- **At the failure of Yamaichi Securities Co. in 1997, the Bank of Japan (BOJ) provided uncollateralized loan of 337.6 bil. JPY, as an emergency liquidity provision.**
- **Since Yamaichi became insolvent, the BOJ was affected by the credit loss of 111.1 bil.yen.**

Statement by the BOJ Governor (Nov. 24, 1997)

"when we consider the fact that the firm (=Yamaichi securities Co.) conducts a wide range of business in domestic and overseas markets and that it has a large number of customers, we believe it extremely important for the stability of the Japanese and overseas financial markets to bring about a smooth closure of the firm."

"the Bank of Japan, as the nation's central bank, in order to fulfill its responsibility of maintaining stability of the financial system, has decided to take the extraordinary measure of providing necessary liquidity pursuant to Article 25 of the Bank of Japan Law, in cooperation with the main banks of the firm so that it may return customer assets, orderly settle outstanding transactions and withdraw from overseas activities."

(Appendix 5) "Provision of subordinated loans to Banks" (March 17, 2009)

- ***Eligible banks:***

  The Bank of Japan determines eligible from those, subject to international capital standards, which wish to be the recipients of the loans.

- ***Total Amount of Loans:*** 1 trillion JPY
- ***Limit per Financial institution:***

  The Bank of Japan sets a limit.

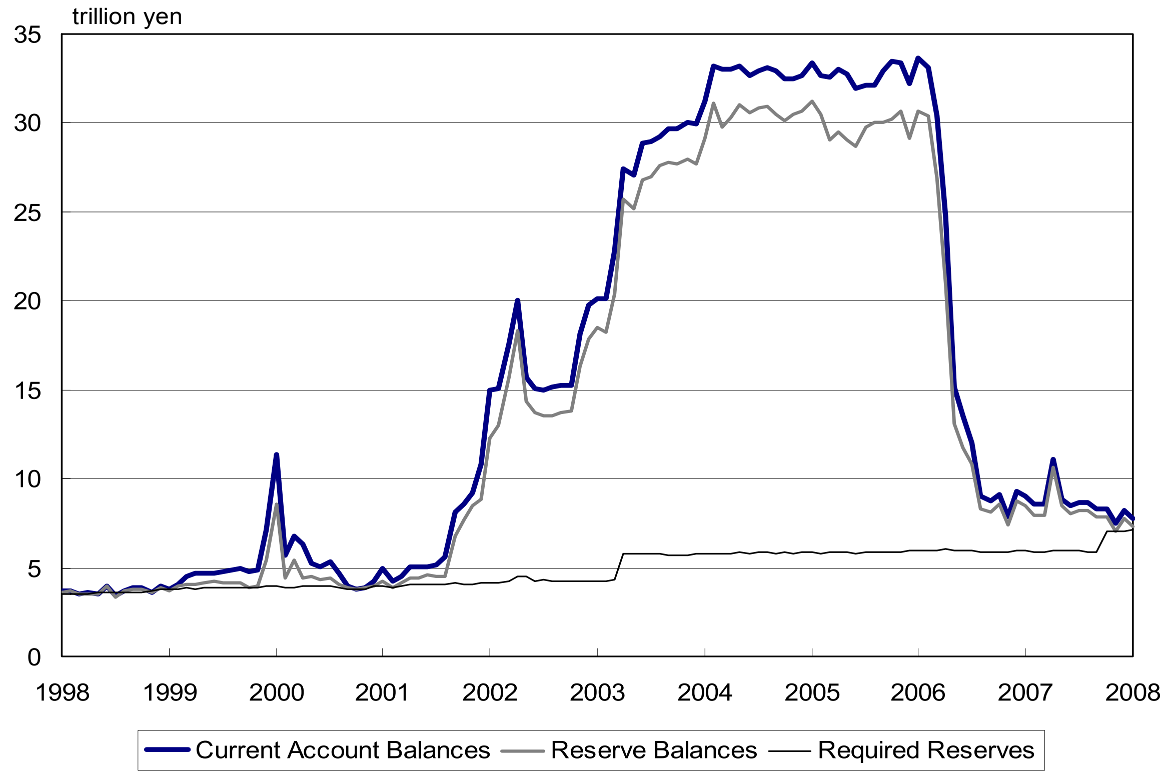
- ***Properties of Loans:***

  The Bank of Japan determines the interest rates, taking into account the prevailing market conditions.

  Other properties such as loan periods will be considered later.

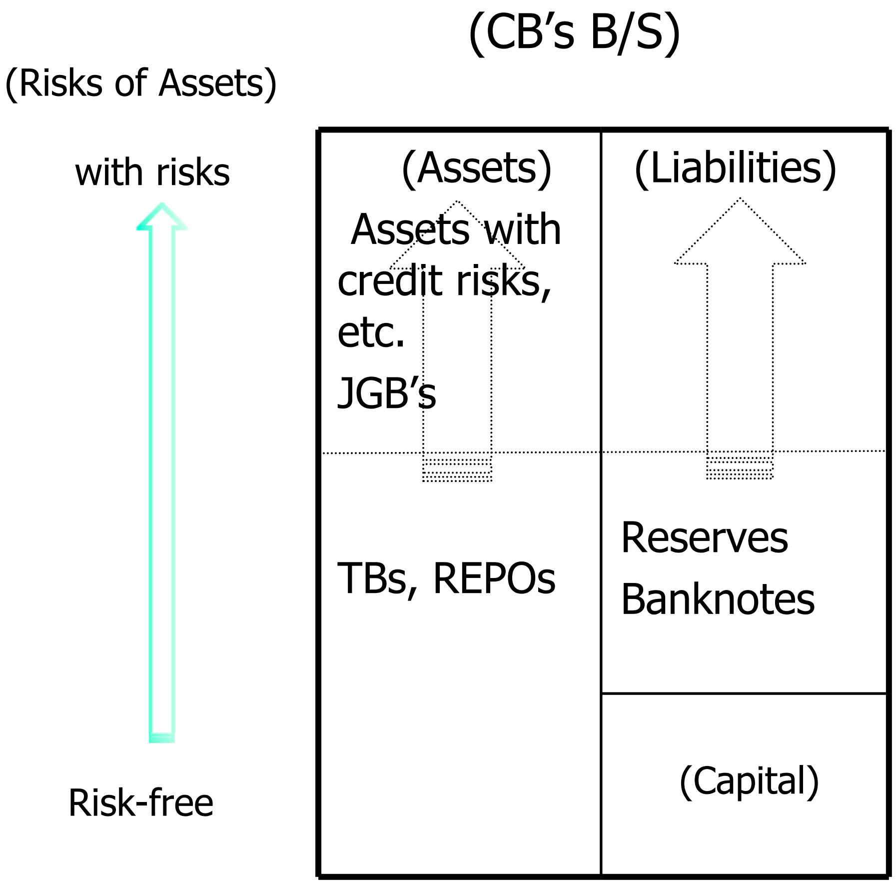
Increases in Reserves and the BOJ's balance sheet

(Amount of Reserves)



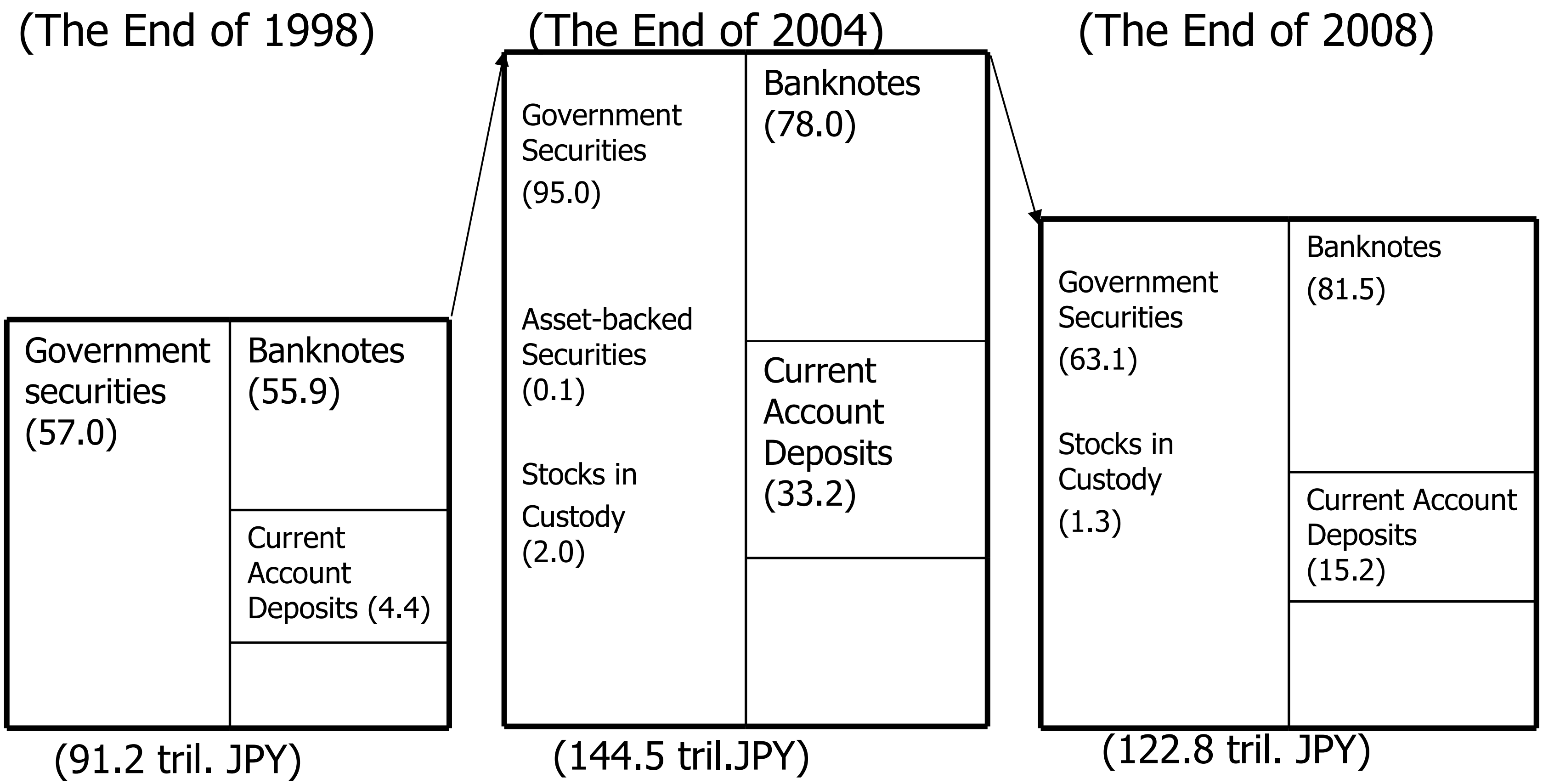
Source: Bank of Japan

QEP and Credit Easing

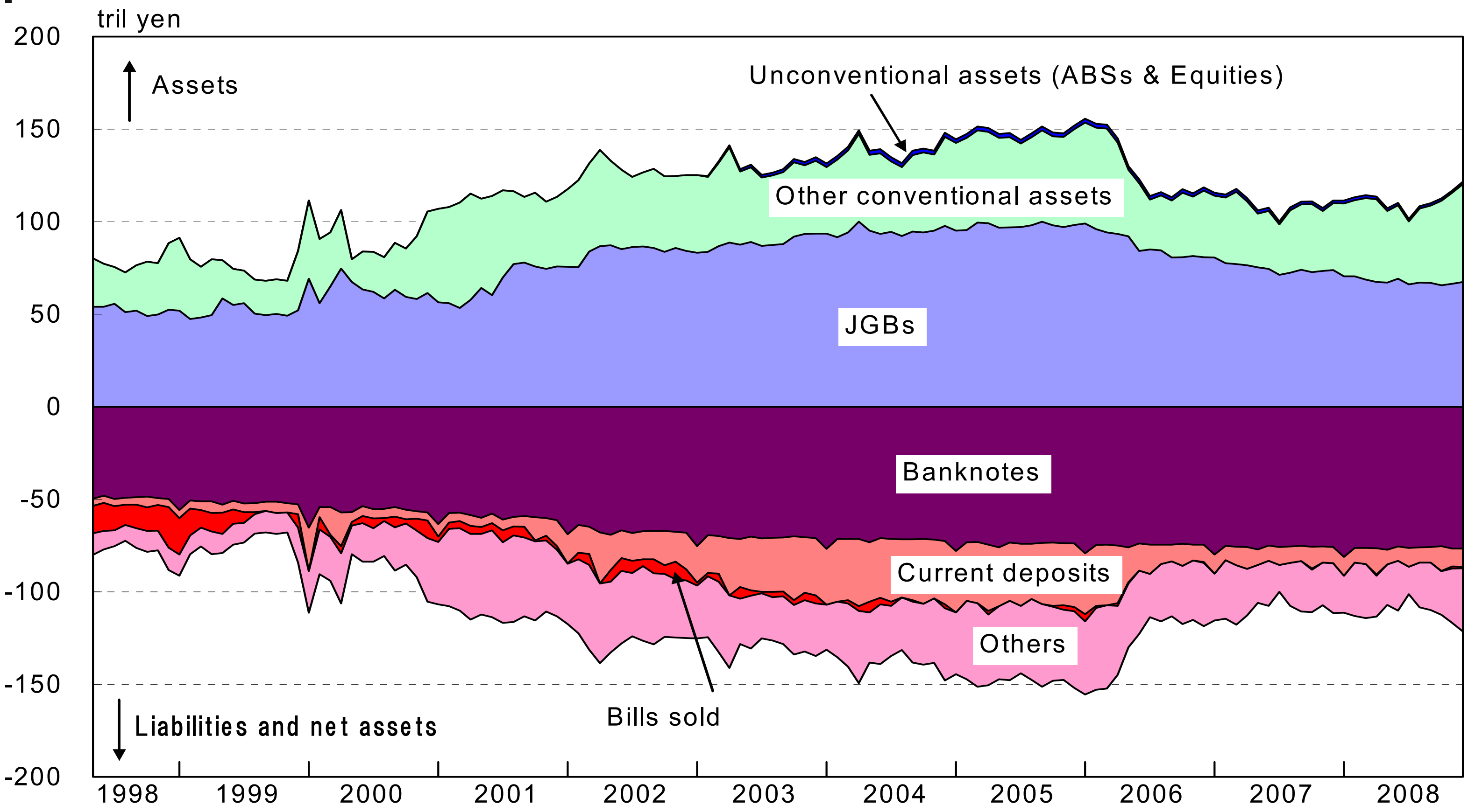


- QEP had explicit targets in terms of the amount of "current account deposits" (i.e., liability side of the CB's B/S) without specifying the type of coinciding assets.
- However, if the CB wants to increase the size of its liabilities infinitely, the CB will have to take risks in its asset side. (Since reserves and risk-free assets will become "perfect substitutes", the CB will not be able to enforce their exchanges.)

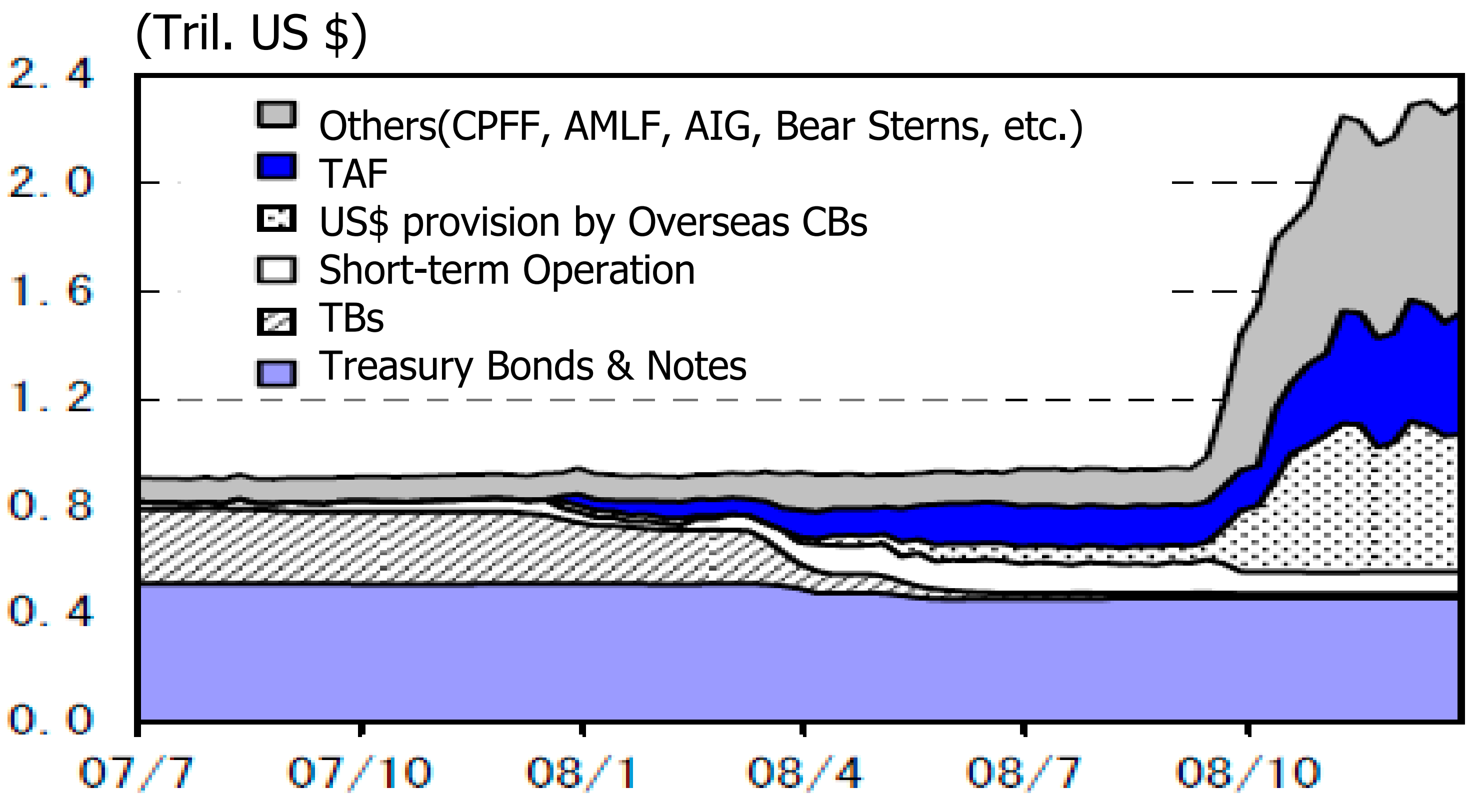
- **The increase in reserves was accompanied by the increase in the BOJ's assets.**
  - During QEP, the expansion in reserves accompanied (i)a substantial increase in government securities and (ii) somewhat increase in other securities in the BOJ's asset side.



BOJ's Balance Sheet



Federal Reserve's Assets



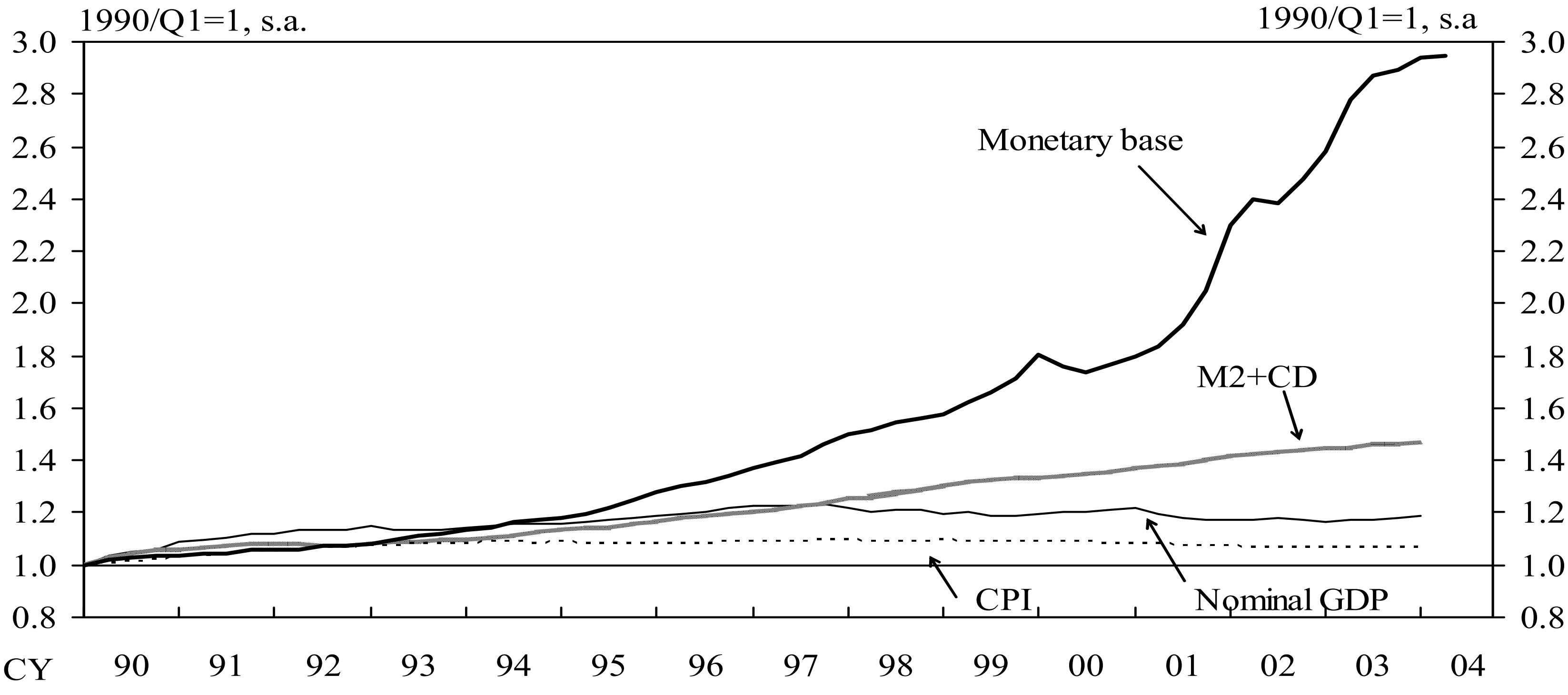
Source: Bank of Japan

3. Some Lessons

Increase in Monetary Aggregates

- **The increase in monetary aggregates *per se* did not seem to stimulate the economy and prices.**

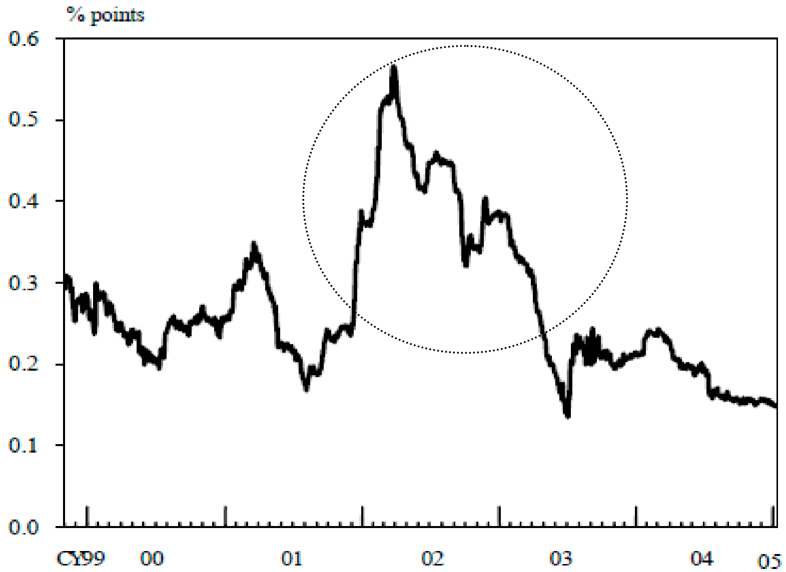
(Monetary Aggregates and Economic Indicators)



"Credit easing" is no panacea.

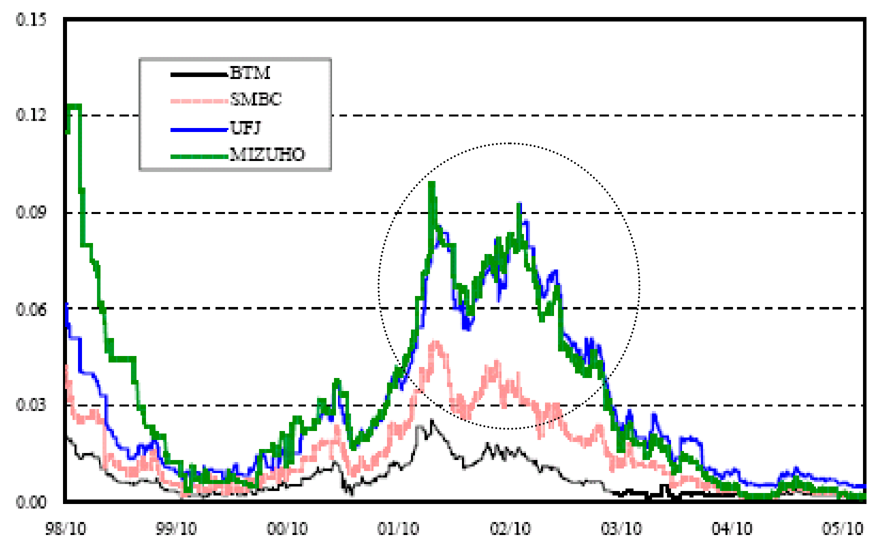
- **Commercial banks' longer-term credit risk premiums remained high under the QEP.**
  - Longer-term credit risk premiums reflect various factors, such as capital constraints and real economic environments.

(Spread of Bank Bond yield over Government Bond Yield)



Notes: 1. Yields on bonds with 5-year maturity.
2. Average bank bond yield is the average of four bank bonds.

(Default Probabilities implied by CDS)

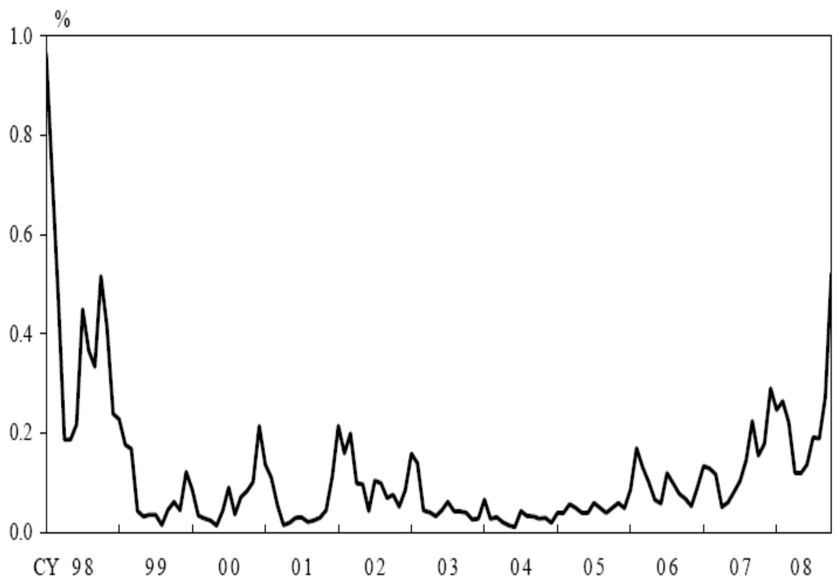


Notes: 1. The time horizon is assumed to be one year. For details, see appendix 3.
2. BTM: Bank of Tokyo-Mitsubishi; SMBC: Sumitomo-Mitsui Banking Corporation; UFJ: UFJ Bank; MIZUHO: Mizuho Bank.

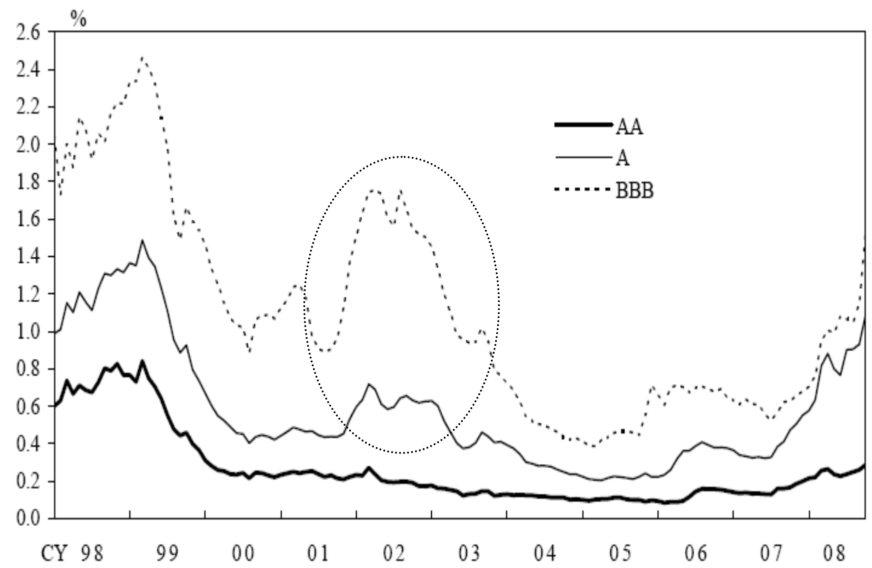
Source: Ueno and Baba [2006a]

- Short-term credit risk premium on 3-month CP remained low under QEP.
- But credit risk premium on low-rated long-term corporate debt remained high.

(1) Spread for Commercial Paper (3-Month)[1,2,3]



(2) Spread for Corporate Bonds (5-Year)[3,4,5]

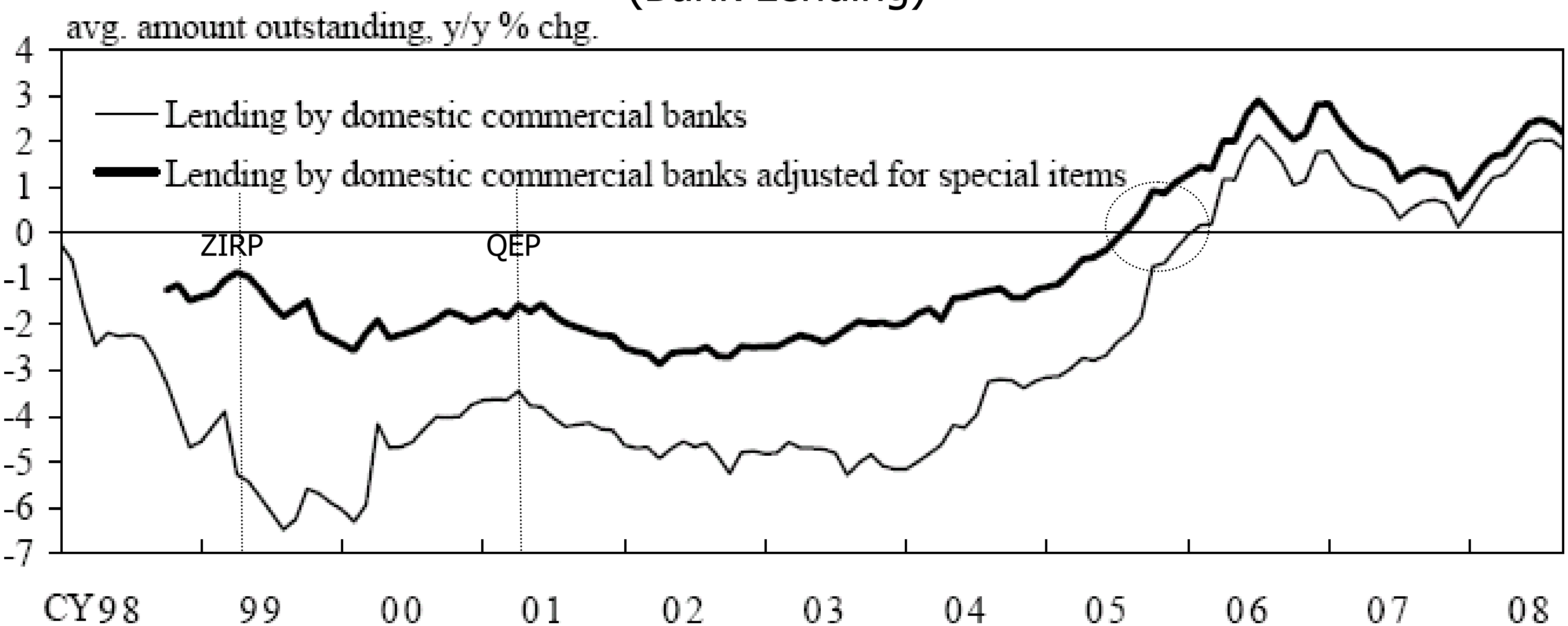


Notes: 1. The spread for CP is the average issuance rate of CP minus the TB/FB yield.
2. CP ratings are A-1 or above.
3. The spreads for both CP and corporate bonds in October 2008 are averages up to the latest available data.
4. The spread for corporate bonds is the corporate bond yield minus the government bond yield.
5. The indicated ratings of corporate bonds are of R&I.

Sources: Bank of Japan; Japan Bond Trading Co., Ltd.; Japan Securities Dealers Association.

- **Bank lending started to recover in 2005, after the economy had registered three-year consecutive recovery, land prices had bottomed out and the banking sector restored capital.**

(Bank Lending)

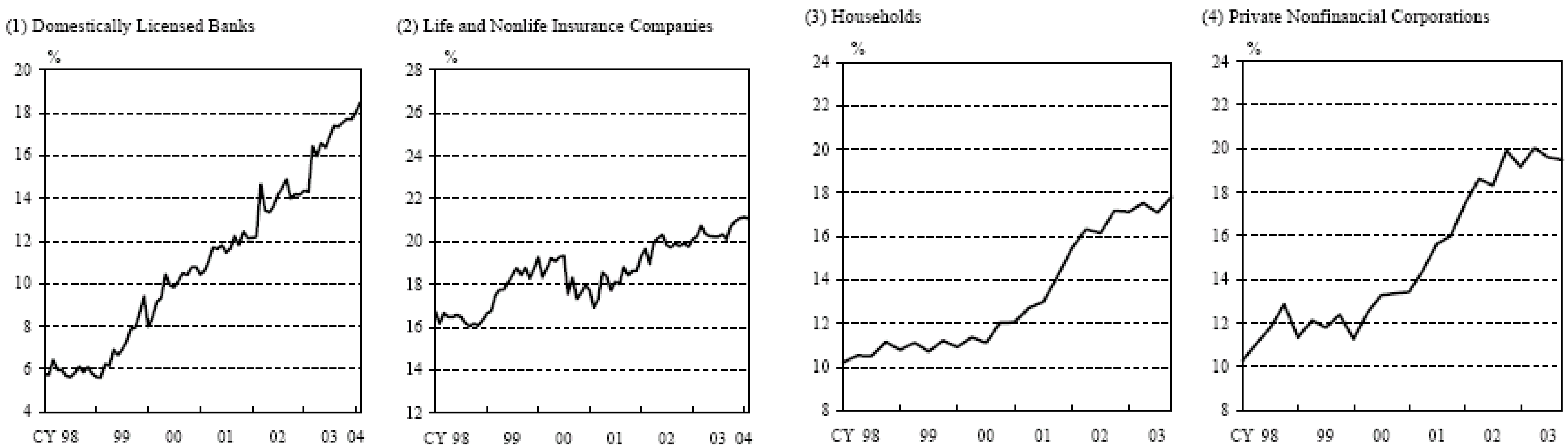


Note: Adjusted figures exclude fluctuations from liquidations of loans, loan write-offs, etc.

"Flight to quality"

- During the financial crisis, economic entities increased the holding of low-risk, low-yield financial assets, due to their risk aversion and capital constraints.

(Ratio of Risk-Free Assets to Total Assets – flight to quality-)



Note: Each sector's ratio of risk-free assets to total assets is calculated as follows:
Domestically licensed banks: (cash + current account balances + government bonds)/total assets.
Life and nonlife insurance companies: (cash and deposits with others + government bonds)/total operating funds.
Households and private nonfinancial corporations: (currency + transferable deposits + central government securities)/total financial assets.

Sources: Life Insurance Association; Marine and Fire Insurance Association of Japan; Bank of Japan.

- ***The effectiveness of unconventional policy tools cannot avoid substantial uncertainty, and is subject to various factors, such as***
  - **Capital constraints (risk-taking capacity) and risk appetite of banks and other economic entities**
    - These factors strongly affect banks' willingness to lend and de-leveraging.
  - **Public confidence in the financial system**
  - **Asset price developments**

- ***Unconventional monetary policies cannot substitute the policy to fix the financial system.***

4. Remaining Issues

Guiding Principle of Unconventional policies ?

- ***There is no guiding principle of unconventional policies.***

  - With regard to o/n rates, there are some guideposts, such as "Taylor rule" that relate the level of o/n rates with economic and price environments.

  - How can we know the "appropriate" level of unconventional policies?

- ***The lack of guiding principle accompanies the risk of market distortion.***

  - The CB's intervention in the yield curve or credit spread might be justified if there is "anomalies" or "dysfunctions" in the markets.

  - However, how can we distinguish "anomalies" from ordinary market developments? (It is not easy to examine whether specific assets are currently under-priced or not.)

"In conducting such operations, it is important to choose the markets in which to intervene extremely carefully. There is a fine dividing line between helping to oil the wheels in markets which are temporarily impaired, and artificially supporting markets in which there is no underlying demand."

"We are aiming to complement and stimulate private demand, not substitute for it."

(BOE Governor Mervyn King, Jan. 20, 2009)

Exit Strategy?

- ***The Bank of Japan has not yet completed the "exit" from stock purchasing nor government bond purchasing.***

--The most "desirable" scenario for the CB is that…

- investors' risks appetite recovers , so
- they reduce the need to use the CB's facilities, and
- "unconventional" assets in the CB's B/S automatically decline.

--However, the future is always uncertain.

Thank you!