Bank of Japan Review 2011-E-5

Profits of Japanese Banks and Market Valuations

--Comparison between Net Income and Comprehensive Income--

Financial System and Bank Examination Department

Yuji Yamashita and Toshiyuki Sakiyama

October 2011

From fiscal 2010, Japan's listed companies are obliged to disclose Comprehensive Income (CI). In Japan, CI is disclosed in Statements of Comprehensive Income, which are attracting considerable attention. In the United States, Other Comprehensive Income, including gains/losses on Available-for-Sale securities, is said to have become a focus of attention since 1998, when CI was introduced. Therefore, the perspective of financial markets in valuing Japanese financial institutions is likely to change to attach more importance to CI. CI of Japanese banks is more volatile than Net Income by far, reflecting the significant price volatility in equities held. Thus, once financial markets start to pay more attention to CI, the risk recognition of Japanese banks' profits can heighten. This can affect Japanese banks in terms of funding costs and so on. In this situation, Japanese banks are required to evaluate more prudently the balance between risks and returns in holding equities, and to make efforts to reduce risks when judged as being excessive.

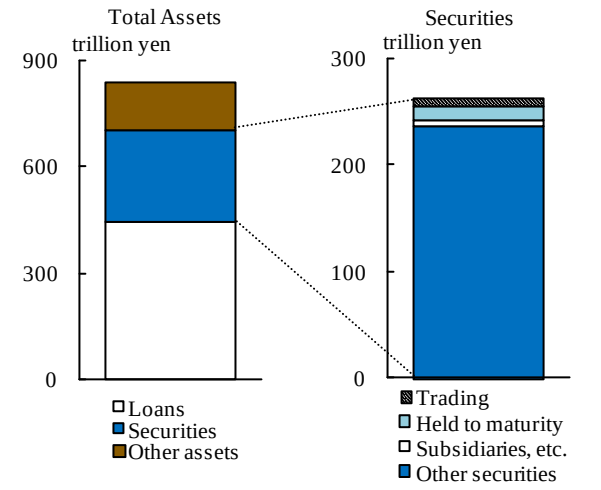
Introduction

From fiscal 2010, Japan's listed companies are obliged to disclose Comprehensive Income (CI) in consolidated financial statements.[1] CI is defined as the sum of Net Income (NI), which was previously considered as the final income, and Other Comprehensive Income (OCI). Among items included in OCI, of special importance to Japanese banks are net unrealized gains/losses on other securities. This is because Japanese banks hold a significant amount of securities such as bonds and equities, and most of them are accounted as other securities,[2] which are equivalent to Available-for-Sale (AFS) securities in the U.S. accounting standard (Chart 1).

In the previous Japanese standard, price fluctuations of other securities were reflected only in Balance Sheets (BS) and not in Statements of Income (SI).[3] In the new standard, however, price fluctuations of other securities are recognized as income in Statements of Comprehensive Income (SCI). Financial statements are the most fundamental and comprehensive information source on income and assets/liabilities of companies. Therefore, it is possible that changes in the accounting standard can affect investors' perspectives in their evaluation of company values.[4]

In this paper, we first calculate the level and the fluctuation of CI-equivalent numbers in Japanese banks between fiscal 2001 and 2010, and compare them with those of NI. Next, we analyze to what extent investors have used each of profits, NI and CI, in evaluating the value of Japanese banks. Finally, we summarize the impact the introduction of CI has on investors' perspectives, and implications for equity holdings of Japanese banks.

[Chart 1] Total Assets and Securities of Japanese Banks[1]



Note: *1*. Japanese banks are major banks and regional banks (117 banks in total). As of the end of March 2011.

Comparison between NI and CI

We compare NI and CI of Japanese and the U.S. banks, from two aspects of the level and the fluctuation (Chart 2).[5]

[Chart 2] The Level and the Fluctuation of Income[1,2]

U.S. Banks (2001-2010) — million dollars, %

	Level (average)		Standard deviation	
NI	65,238	(7.5)	29,385	(3.4)
OCI	-1,018	(-0.1)	22,775	(2.6)
CI	64,220	(7.4)	37,689	(4.3)

Japanese Banks (Fiscal 2001-2010) — 100 million yen, %

	Level (average)		Standard deviation	
NI	3,031	(0.7)	30,290	(7.2)
As-if OCI	-625	(-0.1)	37,293	(8.8)
As-if CI	2,406	(0.6)	54,594	(12.9)

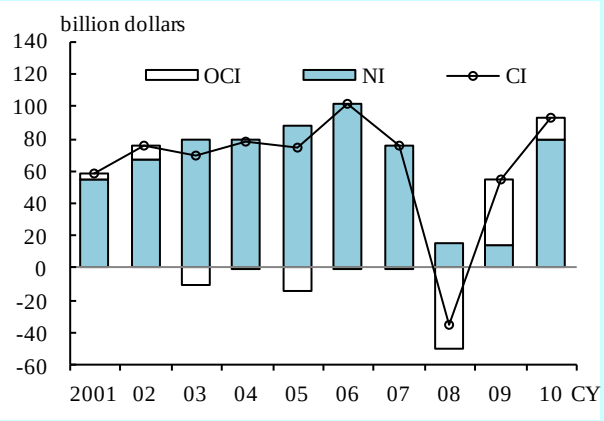
Notes: *1.* The U.S. banks are the top 100 banks in terms of total assets. Japanese banks are major banks and regional banks.
2. Ratio of income to the recent Tier I capital is in parentheses.

For the U.S. banks, no significant differences are observed between NI and CI, for both of the average level and the fluctuation in the decade. The average level of NI per Tier I capital is 7.5% and is very close to 7.4% for CI. The fluctuation measured via the standard deviation of CI per Tier I capital is 4.3% and is only slightly larger than 3.4% for NI.

The use of Statements of Changes in Stockholders' Equity (SCSE) allows us to calculate CI and OCI of Japanese banks. Here, we call them *as-if CI* and *as-if OCI*. The average level of NI per Tier I capital between fiscal 2001 and 2010 is 0.7% and is not much different from 0.6% for as-if CI, while these are extremely smaller than those of the United States.[6] As regards to the fluctuation, however, the difference is significant. In fact, the standard deviation per Tier I capital of as-if CI is 12.9% and is much larger than 7.2% for NI.

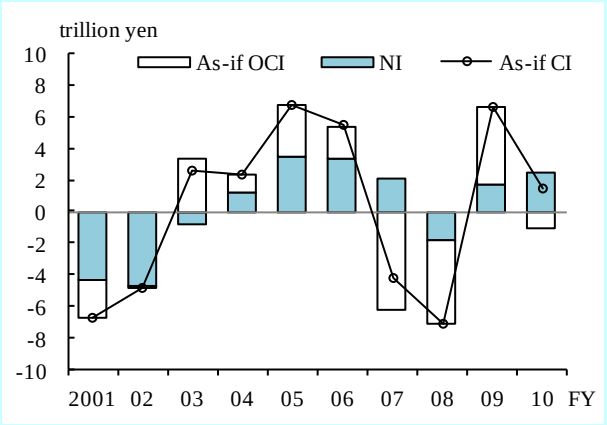
The fluctuation in as-if CI of Japanese banks is larger than that in NI due to the fluctuation in as-if OCI as large as 8.8%. In the case of the U.S. banks, the fluctuation in OCI is not outstanding, except for 2008 when the Lehman shock hit and the subsequent year of 2009 (Chart 3). On the contrary, Japanese banks have experienced significant fluctuations in as-if CI in almost all years (Chart 4). As a result, CI fluctuations of the U.S. and Japanese banks differ greatly, namely 4.3% for the former and 12.9% for the latter.

[Chart 3] CI of the U.S. Banks[1]



Note: *1.* The U.S. banks are the top 100 banks in terms of total assets.

[Chart 4] As-if CI of Japanese Banks[1]

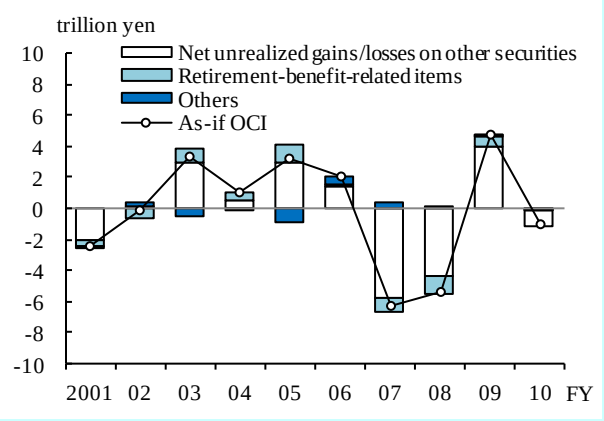


Note: *1.* Japanese banks are major banks and regional banks.

The decomposition of the fluctuation in as-if CI of Japanese banks shows that net unrealized gains/losses on other securities contribute the most to the fluctuation (Chart 5).[7] Furthermore, the decomposition of the fluctuation in unrealized gains/losses on other securities shows that equities, rather than bonds, heavily contribute to the fluctuation, although the outstanding amount of equities is much smaller than that of bonds (Charts 6 and 7). This is due to price volatility risks in equities being much larger than those of bonds.

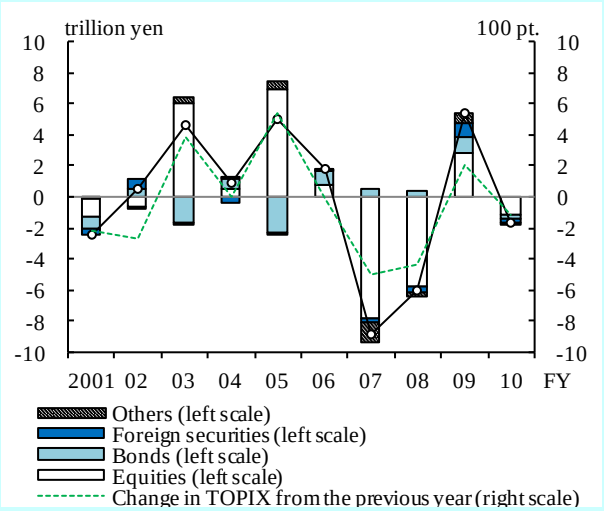
In most cases, it is said that Japanese banks hold equities for strategic purpose, with the aim of maintaining overall business relationships with customer companies. Thus, we can safely judge that the large fluctuation in as-if OCI of Japanese banks is due to equities held for the strategic purpose.

[Chart 5] As-if OCI of Japanese Banks[1,2]



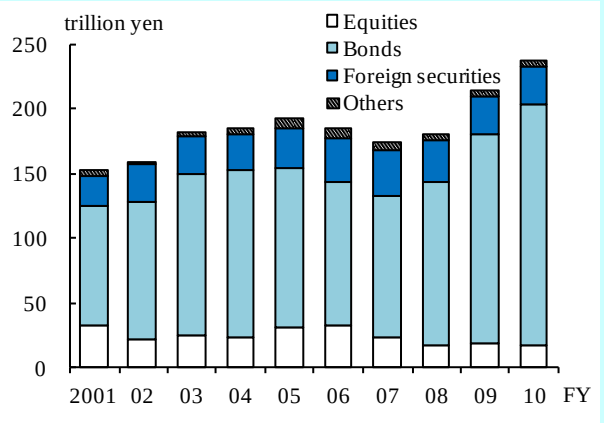
Notes: *1*. Japanese banks are major banks and regional banks.
2. Retirement-benefit-related items are changes in unrecognized actuarial gains/losses etc. as to the retirement benefit obligation.

[Chart 6] Fluctuation in Unrealized Gains/Losses on Other Securities of Japanese Banks[1]



Note: *1*. Japanese banks are major banks and regional banks.

[Chart 7] Outstanding Amount of Japanese Banks' Other Securities[1]



Note: *1*. Japanese banks are major banks and regional banks.

Accounting Information and Company Valuations by Investors

Accounting standards and their changes can affect investors' perspectives in their valuations of companies, thereby possibly having an impact on companies' funding costs etc. Thus, empirical researches to measure the relationship between accounting information or accounting standard changes and company valuations are frequently undertaken, largely in the United States.[8] In general, such researches focus on the relationship between accounting information of companies and their equity returns. This relationship is called *value relevancy* of accounting information.

There have been two types of changes in disclosure-related accounting standards. One is requirement imposed on companies to disclose new information. The other is just a change in the status of accounting items in the accounting theory and/or in the disclosure format, with no change in the amount of disclosing information. The introduction of CI corresponds to the latter. Even in the previous standard, individual items included in OCI, such as net unrealized gains/losses on other securities, can be relatively easily calculated with the use of valuation and translation adjustments in SCSE. Thus, if the Efficient Market Hypothesis (EMH),[9] which insists that all available information is reflected in securities prices, holds, the introduction of CI has no impact on investors' valuations of companies.[10]

As far as the EMH is concerned, general understanding is that the hypothesis is approximately satisfied, but it is the matter of degree (Palepu *et al.*[1996][11]). For instance, Ball and Brown[1968][12] analyzed the relationships between NI and equity returns for companies listed on the NYSE, and expressed the view that the EMH is approximately satisfied. Meanwhile, Grossman and Stiglitz[1980][13] insisted the following: if the market is efficient enough that no securities are over- or under-valued, investors have no incentives to gather and utilize information; as a result, the market efficiency reduces. This is called the *paradox of the efficient market*. This means that investors do not necessarily use all information efficiently. Reflecting this recognition, in recent years, researches have reviewed the impact of only the changes in the status of accounting items in the accounting theory and/or in the disclosure format, including the introduction of CI, on value relevancy. Additionally, there are many detailed analyses

focusing on the differences in categories of industries, and in types of investors such as professional and non-professional.

Preceding researches in the United States

When comparing the value relevancy of NI and CI, the method commonly used is to (1) estimate two functions with equity returns as a dependent variable and NI or CI as an independent variable, and (2) test which model is superior statistically.

Dhaliwal *et al*.[1999],[14] a well-known research in the United States, compared the value relevancy of NI and as-if CI using samples of before 1998, when SFAS No. 130[15] was adopted and stipulated the introduction of CI. As a result of the analysis, they found no evidence that as-if CI is more strongly associated with equity returns than NI. When samples were confined to financial institutions, however, the result was that the value relevancy of as-if CI is significantly higher than NI. Furthermore, when the value relevancy of each item included in as-if CI was analyzed, it turned out that it was the fluctuation in unrealized gains/losses on AFS securities that increased the value relevancy of as-if CI. Dhaliwal *et al*. indicated that this result was reasonable considering that management of financial assets was the business of financial institutions.

Given that NI is disclosed as a component of CI, researchers are concerned with to what extent investors use OCI in addition to NI. In this case, (1) two functions are estimated, with one using NI as an independent variable, and the other using NI and OCI as independent variables, and (2) test is conducted to see which model is superior statistically. When the latter model is judged as better than the former statistically, OCI is said to have incremental information content.

Chambers *et al*.[2006][16] used S&P 500 companies to analyze whether the incremental information content of OCI has changed between before and after the adoption of SFAS No. 130. As a result, they found that (1) there was no incremental information content for as-if OCI before SFAS No.130, but (2) there exists the incremental information content for OCI after SFAS No. 130. Among the components of OCI, the influence of unrealized gains/losses on AFS securities was significant. This showed that the adoption of SFAS No. 130 gave the unrealized gains/losses more transparent status as a gains/losses item in accounting standards, thereby raising the value relevancy of that item. This analysis has important implications.

In the United States, companies have a choice to use either SCI or SCSE as the format to disclose OCI. Most companies, including financial institutions, choose SCSE. Against this backdrop, some researches focus on the effects of the choice on investors. Maines *et al*.[2000],[17] in the research using financial statements of insurance companies, showed that non-professional investors evaluate companies with larger (smaller) OCI fluctuations as high-risk (low-risk) companies correctly only when OCI was disclosed in SCI.

These preceding researches in the United States indicate the possibilities about the use of CI and OCI by investors, as shown below.

(a) In the equity valuation of financial institutions, investors attach more importance to OCI, especially information of unrealized gains/losses on securities, than the valuation of other industries.

(b) Investors attach more importance to CI and OCI information than before, when this information is given the status of gains/losses items in accounting standards.

(c) Investors attach more importance to CI and OCI information when disclosed in SCI than when disclosed in other financial statements.

Empirical analyses on the U.S. and Japanese banks

We undertook empirical analyses on the value relevancy of NI, CI, and OCI of the U.S. and Japanese banks, according to the methods of Dhaliwal *et al*. and Chambers *et al*. (Charts 8 and 9).

The analysis on the U.S. banks showed that the value relevancy of CI was significantly higher than that of NI. Furthermore, we found that OCI had the incremental information content.

[Chart 8] Empirical Analysis on the U.S. Banks[1]

Model	Intercept (t-value)	NI (t-value)	CI (t-value)	OCI (t-value)	Adjusted R^2	Vuong test (p-value)
(1)	-4.27 (189.27)	109.73 (21.80)			0.096	
(2)	-4.51 (190.91)		112.89 (23.22)		0.108	(2) > (1) (0.000)
(3)	-4.37 (190.39)	109.62 (21.94)		169.78 (8.10)	0.109	(3) > (1) (0.000)

Notes: *1*. Estimation period is between 1998 and 2010. The number of samples is 4,467.
2. The 1% highest and lowest numbers in each variable are removed as outliers.
3. Vuong test is a method to test superiority among competing models. > means the left model is superior. ≒ means no significant difference in superiority between models.
Source: Bloomberg.

In the case of Japanese banks, we found no evidence of a significant difference between NI and as-if CI with respect to the value relevancy. In other words, as far as Japanese banks are concerned, clear conclusion cannot be drawn regarding which item, NI or as-if CI, investors paid more attention to. This result makes a contrast with the preceding research that deals with Japanese non-financial companies (Wakabayashi[2009][18]), where the value relevancy of NI is significantly higher than that of as-if CI. Meanwhile, our analysis on Japanese banks showed that as-if OCI has the incremental information content. This means that investors who invest in Japanese banks have attached importance to as-if OCI information in addition to NI. The possible reason for this is that since unrealized gains/losses on other securities are an important factor in the calculation of regulatory Capital-Asset Ratio (CAR) for banks, investors may be attentive to the effects of developments in the unrealized gains/losses on the scale and scope of banks' business.[19]

[Chart 9] Empirical Analysis on Japanese Banks[1]

Model	Intercept (t-value)	NI (t-value)	As-if CI (t-value)	As-if OCI (t-value)	Adjusted R^2	Vuong test (p-value)
(1)	-15.48 (103.76)	58.75 (7.14)			0.137	
(2)	-14.63 (105.13)		30.19 (6.64)		0.120	(2)≒(1) (0.268)
(3)	-15.22 (104.33)	55.56 (6.75)		15.95 (2.70)	0.156	(3) > (1) (0.006)

Notes: *1*. Estimation period is between fiscal 2006 and 2009. The number of samples is 324.
2. The 1% highest and lowest numbers in each variable are removed as outliers.
3. Vuong test is a method to test superiority among competing models. > means the left model is superior. ≒ means no significant difference in superiority between models.
Source: Financial Quest.

Concluding Remarks

Given that Japan introduced CI in fiscal 2010, this paper compared NI and CI of the U.S. and Japanese banks from two aspects of the average level and the fluctuation. As a result of the analysis, it turned out that profits on a CI basis of Japanese banks are much more volatile than NI. Moreover, the structural problem of Japanese banks -- namely, low profitability with large fluctuations in profits -- has become more evident.

In the United States, OCI is said to have become a focus of attention since 1998, when CI was introduced. In the case of the U.S. banks, it is said that CI was emphasized more than NI even before 1998. In the case of Japanese banks, OCI has also been attached importance to. Furthermore, Japanese companies have been obliged to disclose OCI in SCI, which is attracting considerable attention. Taking this situation and the preceding research on the disclosure format in the United States into consideration, the perspective of financial markets in valuing Japanese banks is likely to change and attach more importance to CI. Once this change occurs, the risk recognition of Japanese banks' profits can heighten, thereby leading to higher funding costs and so on. Taking these possibilities into account, Japanese banks are encouraged to evaluate more prudently the balance between risks and returns[20] in holding equities, and to make efforts to reduce risks when judged as being excessive.

[1] See Accounting Standards Board of Japan (2010), ASBJ Statement No. 25, "Accounting Standard for Presentation of Comprehensive Income."

General rationales for advocating CI are pointed out as below.

- Introduction of CI restores the *clean-surplus* relationship between profits and balance sheets. The clean-surplus means the relationship that an increase/decrease of capital during a period, excluding capital transactions, corresponds to profits/expenses during the period.
- Valuations of equities should be done based on all profits and expenses, including unrealized gains/losses on assets held.
- CI has little room for profit manipulation by companies, while NI has larger room.

On the contrary, proponents of NI insist below.

- Unrealized gains/losses on equities etc. are merely a temporary phenomenon and tend to be noise. These temporary items should be excluded from income in the valuation of equities.

[2] Classification and measurement of securities before the introduction of CI are shown below.

Classification	Valuation standard	Treatment of unrealized gains/losses
Trading purpose	Fair value	Recognized in SI
Held to maturity purpose	Amortized cost	Not recognized in financial statements
Other securities (held for purposes other than the above, such as strategic equity holdings)	Fair value	Recognized only in BS (booked in net assets of BS without via SI)

[3] Note that gains/losses realized when other securities are sold, as well as losses derived from impairment, are included in NI.

[4] For instance, see Nikkei BP (August 2010), "IFRS, Rieki gekihen Kessansho no Joushiki ga Kawaru (IFRS, Drastic changes in profits -- Common sense as to financial statements changes)."

[5] In Japan, it is only in consolidated financial statements that companies are obliged to disclose CI at present. However, this paper uses data from unconsolidated financial statements of banks in calculating as-if CI and as-if OCI. This is due to constraints in data availability. It is worth noting that foreign currency translation adjustment can also have non-negligible impact on OCI on a consolidated basis.

[6] Low profitability of Japanese banks is due to such factors as low lending margins. See Bank of Japan, *Financial System Report* (March 2010).

[7] Taking the proposal in the ASBJ's Exposure Draft No. 39 for Retirement Benefits (March 2010) and the current treatment in the United States into account, changes in unrecognized actuarial gains/losses etc. as to the retirement benefit obligation are included in as-if OCI.

[8] In Europe, however, empirical researches have accumulated less than in the United States, reflecting the adoption of IFRS as late as in 2005.

[9] When the EMH is satisfied as to publicly available information in such media as financial statements, the market is said to have the efficiency in the *semi-strong form*. When the market is efficient as to past price information, the EMH in the *weak form* is said to be satisfied. When the market is efficient as to undisclosed information, the EMH in the *strong form* is said to be satisfied.

[10] With respect to this point, the Securities Analysts Association of Japan (2010) shows its view as below in the "On the Accounting Standard for the Presentation of Comprehensive Income."

Even if numbers which can be calculated using current financial statements are to be presented in the form of SCI, their essential information value will not change. However, if these numbers are to be presented more clearly in SCI, they will be recognized not only by the limited number of sophisticated institutional investors but also by all investors. This will bring about more broadly shared recognition among investors about how large price volatility risks Japanese companies have. In addition, investors will attach more importance to accounting items in BS, which tend to be regarded as less useful than ones in SI in practice. As a result, it is highly expected that dialogues between investors and companies are invigorated about how to make use of cross-shareholdings, which have only limited contributions to profits but involve large price fluctuations.

[11] Palepu, K. G. *et al*. (1996), "Introduction to Business Analysis and Valuation."

[12] Ball, R. and H. Brown (1968), "An Empirical Evaluation of Accounting Income Numbers," *Journal of Accounting Research*.

[13] Grossman, S. and J. Stiglitz (1980), "On the Impossibility of Information Efficient Market," *American Economic Review*.

[14] Dhaliwal, D., K. R. Subramanyam and R. Trezevant (1999), "Is Comprehensive Income Superior to Net Income as a Measure of Firm Performance?," *Journal of Accounting and Economics*.

[15] Financial Accounting Standards Board (1997), Statement of Financial Accounting Standards No. 130, "Reporting Comprehensive Income."

[16] Chambers, D., T. J. Linsmeier, C. Shakespeare and T. Sougiannis (2006), "An Evaluation of SFAS No. 130 Comprehensive Income Disclosures," *Review of Accounting Studies*.

[17] Maines, L. A. and L. S. McDaniell (2000), "Effects of Comprehensive-Income Characteristics on Nonprofessional Investors' Judgments: The Role of Financial-Statement Presentation Format," *The Accounting Review*.

[18] Wakabayashi, H. (2009), "Houkatsurieki no Jissho Kenkyu (Empirical researches on comprehensive income)," Chuo Keizai Sha. Her analysis is characterized by incorporations of year dummy variables in functions and so on.

[19] In the calculation of CAR at banks which are subject to the Basel II regulations, 45% of unrealized gains on equities are included in Tier II capital, while about 60% of unrealized losses are subtracted from Tier I capital. Under the framework of the Early Correction Measures, when CAR falls below 4%, for instance, relevant measures are activated. They include contraction of total assets or constraints on the increase, prohibition of or constraints on accepting high-yield deposits, and scaling down of affiliates or foreign subsidiaries, etc.

[20] There is a view that returns on banks' equity holdings should be evaluated on an overall-profit basis. Overall profits include increases in lending-related revenues and transaction fees, both of which are obtained through the maintenance and enhancement of long-term relationships with customer companies. With this respect, the *Bank of Japan Review 2007-J-13* (November 2007), which is about banks' overall profitability that assumes equity holdings, says as below.

We analyze the overall profitability of banks' business assuming their equity holdings. The analysis shows it is possible that the overall profits are not large enough to compensate for the costs of holding equities in the long term.

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