MIZUHO

Mizuho Research Institute

Channel to Discovery

Mizuho Economic Outlook & Analysis

December 22, 2008

The Impact of the Unprecedented Financial Turmoil on Corporate Earnings and Financial Conditions:

estimates based upon stock prices and foreign exchange rates as of the end of October 2008

Mizuho Research Institute

Hirokata Kusaba, Senior Economist, Research Department – Financial Markets

Summary

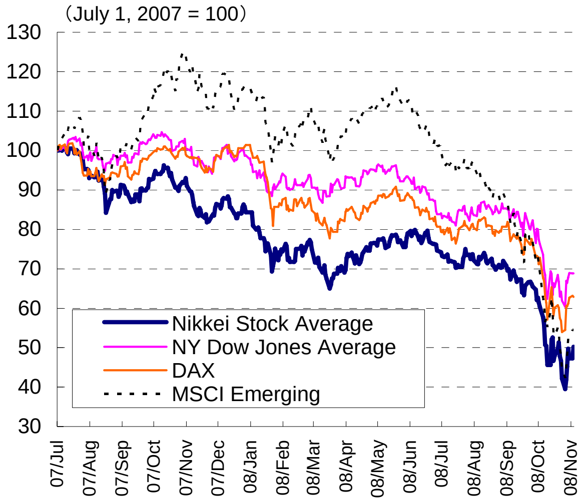
- Should the strength of the yen persist, corporate earnings of listed companies will suffer double-digit declines again in the fiscal year ending March 2010 due to a sharp downturn of export sales
- The fall of stock prices, in addition to the deterioration of core business performance, will cause investment yields on pension assets to drop by 30%, leading to the rise of amortization costs of unrecognized actuarial losses by approximately JPY1 trillion every year
- The unrealized gains of listed companies on cross-shareholdings will fall by JPY7 trillion. This, together with losses in foreign currency-denominated assets resulting from the appreciation of the yen, will lead to the erosion of core capital of the companies by approximately JPY10 trillion
- The stock market fall and the strong yen will depress the expected rate of economic growth and serve as a drag upon capital investment on a macroeconomic level

1. Introduction

(1) A global financial market meltdown.

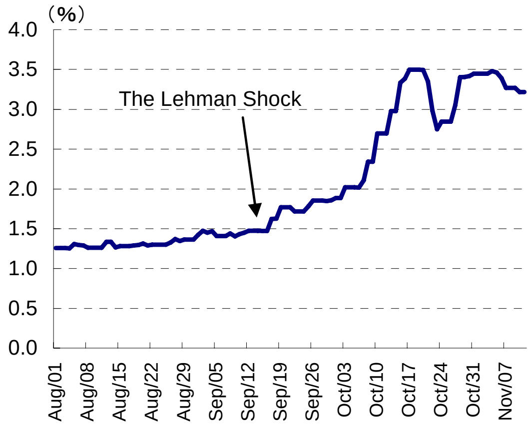
The global financial market is facing a meltdown. The turmoil triggered by the US subprime mortgage crisis has had a serious impact upon the credit market, in particular structured bonds and credit derivatives, triggering a plunge in prices of traditional financial products including stocks (**Chart 1**). The Lehman Shock fueled uncertainties over European and American financial institutions, resulting in a liquidity crisis in which interbank transactions fell into a state of paralysis. Reflecting such conditions, Japan’s government bond market – normally a safe haven in terms of quality – has seen large-scale selloffs of inflation-linked bonds and variable coupon bonds amid investors’ disfavor with the low liquidity of these products to an extent that cannot be explained by fundamentals (**Chart 2**). Furthermore, a sharp drop in once-soaring energy and resource prices also caused a sudden return of speculative money that had been flowing into resource-rich nations in the form of the yen and US dollar carry trades. As a result, the Japanese yen surged against major currencies, throwing the foreign exchange market into chaos.

Chart 1: Trends in major stock price indexes



Source: Bloomberg.

Chart 2: Yields on 10-yr inflation-indexed bonds



Source: Bloomberg.

(2) How will the financial market turmoil affect corporate finance?

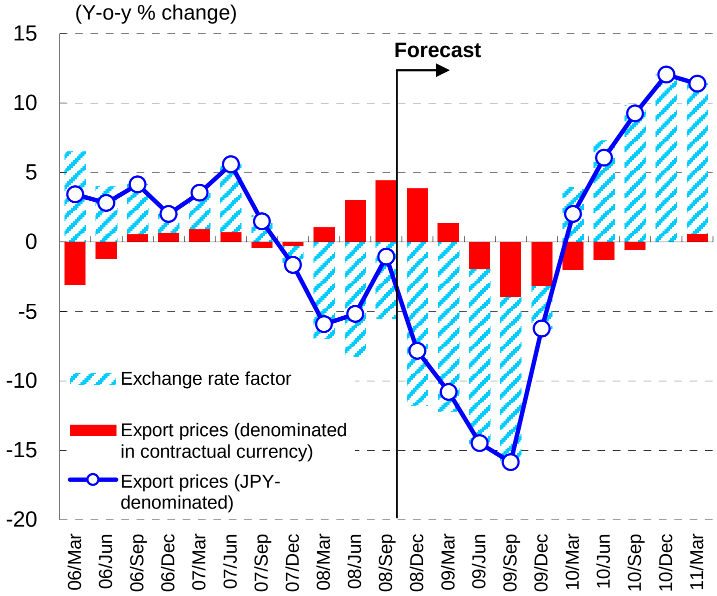
There are growing concerns that the financial market turmoil will have a negative impact on the real economy, as indicated by the Bank of Japan’s interest rate cut on October 31, 2008. In fact, macroeconomic indicators such as exports and production are falling further. Moreover, Japan’s economic situation has changed drastically over the past month or so; namely, the risk that stock prices and currency exchange rates might exert a more direct impact on corporate finance and earnings can no longer be neglected. This report discusses how the sharp fall of stock prices and the appreciation of the yen will directly affect corporate finance. Despite the manifold linkage between the financial market and the real economy, this report focuses upon the following key aspects, based on the premise that stock prices (the Nikkei Stock Average JPY8,577) and foreign exchange rates (JPY98.46/USD) as of October 31, 2008 will remain unchanged: (1) the appreciation of the yen and export sales; (2) the fall of stock prices and the appreciation of the yen and retirement benefit costs; (3) the fall of stock prices and the appreciation of the yen and the erosion of core capital.

2. Export sales may drop sharply next fiscal year due to the appreciation of the yen

(1) The rise of the nominal effective yen exchange rate and the fall of export sales

First of all, let us take a look at the impact of the current strength of the yen on corporate earnings. The appreciation of the yen will exert extremely negative pressures on export sales, which are expected to fall significantly due to declines in export prices. As of the fiscal year ending March 2008, the overseas sales ratio of listed companies (on a consolidated basis of 1,292 companies in Nikkei NEEDS, hereinafter the same) has reached 30.4%, rising by approximately 5% pt over the past decade. Fluctuations in currency exchange rates cause changes in the yen value of proceeds from overseas sales. Note that this tendency is growing stronger. Let us assume that the nominal effective yen exchange rate as of the end of October 2008 will remain unchanged for some time. In terms of changes in the export price index toward the next fiscal year (**Chart 3**), the year-on-year percentage change will fall sharply, mainly due to the upturn of the nominal effective yen exchange rate. The breadth of the fall is predicted to reach approximately -15% y-o-y in the Jul-Sep quarter of 2009. Thus, even without changes in sales quantities, yen-denominated export sales will be subject to significant downward pressures.

Chart 3: The export price index



Source: Bank of Japan, *Corporate Goods Price Index.*

(2) The possibility of a double-digit decline of corporate earnings again next fiscal year

All these points are indicated in **Chart 4**, which shows the sales and ordinary profits of large manufacturers (based upon the *Financial Statements Statistics of Corporations by Industry*). In addition to the stagnation of demand, the decline in export prices will very likely result in a steep decline in yen-denominated export sales from the second half of FY2008 to the first half of FY2009. The appreciation of the yen will depress not only export prices but also prices of imports. In particular, given the sudden drop of energy and resource prices, declines in import prices will surpass that of export prices and lead to the improvement of trade terms on a macro-level. Thus, variable costs should fall at a faster pace than the decline of sales. Even so, depreciation costs are poised to rise for the time being, considering that the decline of variable costs will not be able to cover the decrease in sales and because the capital investment drive in the previous fiscal year will serve as upward pressures upon depreciation costs. Even if labor costs are properly reduced, the rise of fixed costs will be inevitable. Consequently, the operating profits of large manufacturers will fall by 20% or more in the fiscal year ending March 2009. Moreover, the double-digit decline of operating profits may also persist in the fiscal year ending March 2010 (since data in the *Financial Statements Statistics of Corporations by Industry* is provided on a non-consolidated basis, the impact might be more profound on a consolidated basis).

Chart 4: Outlook on sales and operating profits of large manufacturers

(Y-o-y % change)

	Sales	Fixed costs	Variable costs	Operating profits
FY2007	5.13	3.99	5.92	-2.20
FY2008	0.94	5.47	1.96	-14.56
FY2009	-4.35	1.31	-4.64	-7.84
2007 1H	5.80	4.65	5.88	7.30
2007 2H	4.52	3.35	5.96	-12.22
2008 1H	5.11	5.89	6.99	-23.17
2008 2H	-2.94	5.07	-2.65	-27.25
2009 1H	-7.44	2.12	-8.07	-24.85
2009 2H	-1.23	0.52	-1.18	-8.59

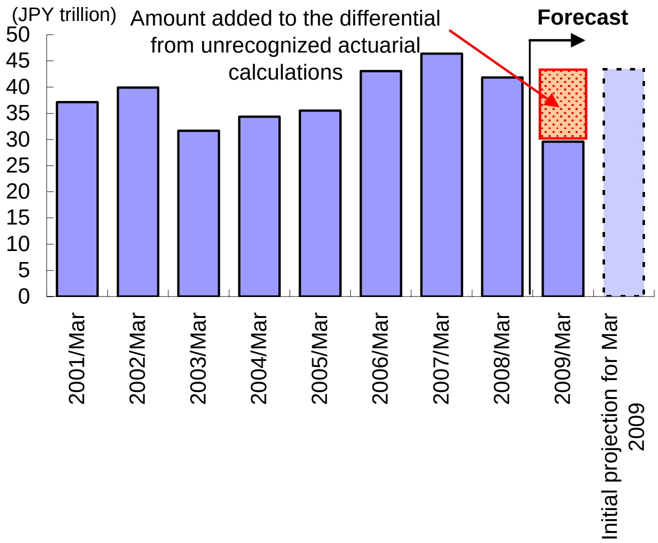
Source: MHRI, based upon the *Financial Statements Statistics of Corporations by Industry* of the Ministry of Finance.

3. The financial market turmoil and the surge of retirement benefit-related costs

(1) Corporate pension plans at stake

Among the numerous aspects of corporate finance directly affected by the turmoil, the most serious is the impact on corporate earnings arising from the fall of investment yields on pension assets. As of the end of March 2008, the pension assets of listed companies totaled approximately JPY41.9 trillion**,** as shown in **Chart 5**. Even though expected investment yields vary depending on each business firm, our macro-level estimate of the expected yield of the firms included in the Nikkei 225 (based on the weighted average of the market value of their pension funds as of March 31, 2008) stood at approximately 3.81%. Thus, pension funds as of the end of March 2009 were initially expected to reach approximately JPY 43.5 trillion. In reality, however, investment yields on corporate pension assets have probably fallen into negative territory due to the plunge of domestic and overseas stock prices and decline in the earning ratio of foreign-currency-denominated assets due to the appreciation of the yen. The actual investment yield on pension assets for FY2008 is predicted to be -29.1% or so according to MHRI's calculations on the premise that stock prices and currency exchange rates as of the end of October 2008 remain unchanged. In other words, pension assets as of the end of March 2009, which were supposed to increase to JPY43.5 trillion, will actually shrink to JPY29.6 trillion yen.

Chart 5: Pension assets of listed corporations

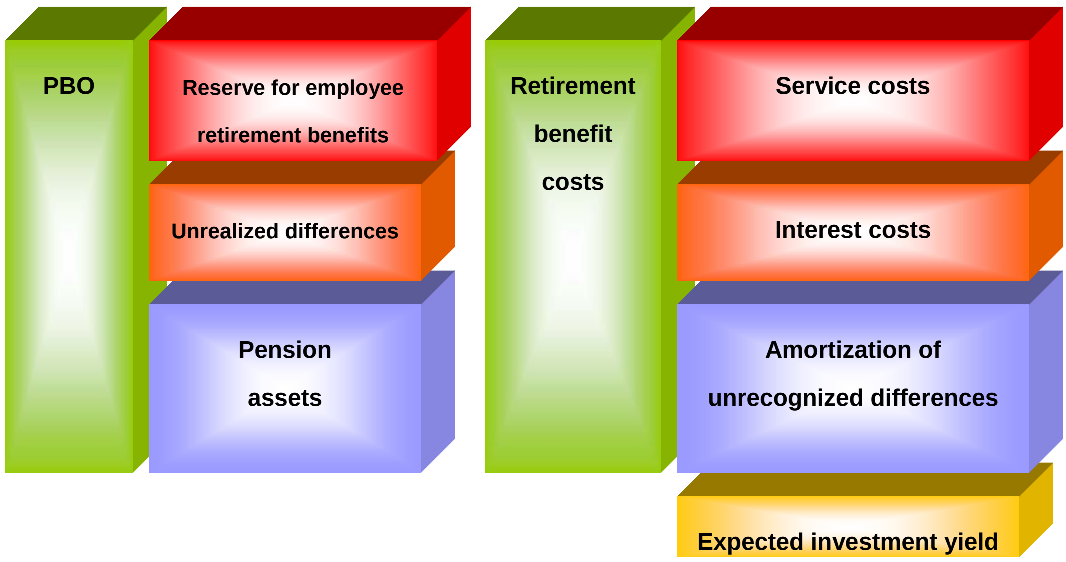


Source: Made by MHRI, based upon data by Nikkei FQ and others.

(2) The amortization of unrecognized actuarial loss will drag down profits by JPY1.1 trillion from the following fiscal year

Putting aside the extremely complex nature of actual pension accounting, let us for the sake of simplicity suppose that factors other than the market value of pension funds remain constant. In this case, the difference between the expected investment yield and the actual investment yield, namely JPY43.5 trillion – JPY29.6 trillion = JPY13.9 trillion, must initially be recognized as unrecognized actuarial loss in accounting at the end of March 2009 and be amortized as a part of retirement benefit costs in the profit and loss statement from the following fiscal year (**Chart 6**). Using the same method as the calculation of expected investment yield, the amortization period of the unrecognized actuarial loss is estimated to be 12.8 years on a macro level. That means that business firms must amortize the loss of JPY1.08 trillion every fiscal year during a time span of approximately 13 years.

Chart 6: Image of retirement benefit accounting
(left: balance sheet of pension accounting,
right: breakdown of retirement benefit costs)



(3) Corporate earnings will come under further downward pressures

The foregoing burden will have a massive impact upon overall corporate earnings. Profits before tax of listed companies for the fiscal year ending March 2008 was roughly JPY32.6 trillion. Taking the deterioration of macroeconomic demand conditions into account, business firms already expect their operating profits to fall by approximately 27% y-o-y (**Chart 7**) in the current fiscal year. Even when disregarding other factors, profits before tax for the fiscal year ending March 2009 will drop to around JPY23.8 trillion. Given the foregoing negative pressures on earnings arising from currency exchange rates and rise in retirement benefit costs, a considerable fall of corporate earnings of listed companies for the fiscal year ending March 2010 is a looming possibility. (In case stock prices pick up and the actual investment yield surpasses the expected yield, needless to say, unrecognized actuarial gain will be generated and offset the negative amount from the previous year. Therefore, note that our forecast is applicable only when current stock prices remain unchanged.)

Chart 7: Business projections of major listed companies

(%/% pt)	Sales (% change)			Operating profits			As of August 2008		No. of companies
	FY2006	FY2007	FY2008	FY2006	FY2007	FY2008	FY2008	Difference	
Total of major corporations	7.4	7.1	1.2	5.1	4.8	-27.1	-12.6	-14.6	130
Manufacturers	9.2	7.2	-1.7	7.2	11.0	-34.9	-12.5	-22.4	79
Materials	12.5	8.2	9.0	1.6	0.8	-21.7	-12.2	-9.5	38
Iron & steel	8.7	10.0	15.9	-1.8	-4.1	-2.8	-20.4	17.5	5
Nonferrous metals	28.0	9.1	-9.8	35.7	-4.1	-45.7	-21.2	-24.5	6
Diversified chemicals	13.2	6.5	4.7	23.0	-6.7	-36.1	-10.2	-25.9	6
Speciality chemicals	9.6	4.0	-2.4	6.7	12.1	-9.0	2.2	-11.2	7
Paper & pulp	3.4	4.9	6.6	-9.8	-23.5	23.3	18.4	4.9	5
Ceramics & cement	17.7	6.4	-3.0	21.3	18.1	-23.0	-8.0	-15.0	5
Petroleum	12.7	9.5	16.8	-32.1	22.4	-79.5	-6.9	-72.6	4
Processing	8.6	7.0	-3.8	8.6	13.4	-37.7	-12.5	-25.2	41
Pharmaceuticals	6.4	9.8	8.9	5.4	0.7	-12.5	-11.6	-0.9	6
General machinery	15.0	18.7	1.3	39.6	32.2	-18.6	4.0	-22.5	5
Shipbuilding & heavy electrical machinery	8.4	5.7	4.6	52.9	7.8	-3.1	3.8	-6.9	6
Automobile	11.8	8.7	-10.1	8.5	5.4	-62.0	-29.8	-32.2	8
Electronics	6.2	4.7	-1.0	0.6	39.7	-15.9	10.0	-25.9	9
Foods	1.9	5.4	8.9	5.3	-0.8	10.7	19.7	-8.9	7
Nonmanufacturers	5.3	7.1	4.7	2.4	-3.5	-15.3	-12.7	-2.6	51
Electrical power & gas	2.3	4.8	9.5	-5.7	-44.6	-111.8	-125.0	13.2	13
Marine transportation	13.7	21.6	5.4	-16.7	86.3	-5.6	1.3	-6.9	3
Land transportation	2.7	2.9	1.5	3.8	4.7	-5.6	-0.8	-4.9	8
Air transportation	6.3	-1.9	-4.4	85.8	51.5	-52.4	-25.5	-26.9	2
Information & communication	2.1	1.3	0.0	-2.4	17.5	-6.0	-6.0	0.0	2
Mass media	0.0	-0.7	2.5	-1.0	-30.1	-30.7	-10.0	-20.8	4
Wholesale trade	7.1	10.8	5.2	19.5	4.9	42.9	35.1	7.8	5
Retail trade	0.7	4.5	1.6	7.1	-19.6	3.5	2.8	0.7	5
Construction	7.6	-0.1	5.5	-0.2	-30.0	-44.9	9.8	-54.7	4
Real estate	8.2	0.7	9.9	17.5	13.0	-7.3	3.5	-10.8	5

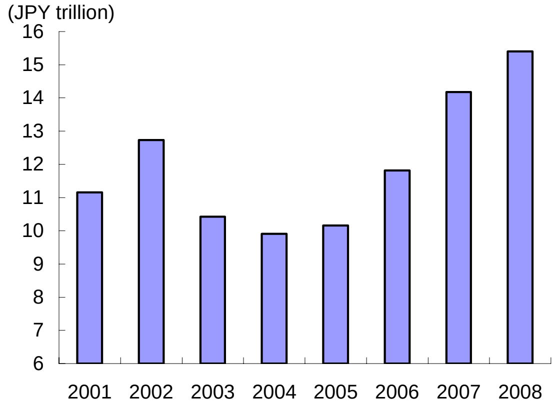
Source: Made by MHRI, based upon data by Nikkei Financial Quest.

4. The financial market turmoil and erosion of core capital

(1) Cross-shareholdings make a comeback.

The next plausible outcome of the financial market turmoil is the fall in value of stocks owned by business firms due to the stock market downturn. As of the end of March 2008, of all marketable securities owned by listed companies (other than the company's own stocks), the total amount of stocks was JPY28.7 trillion on a balance sheet basis. This figure can be divided into the book value (JPY15.4 trillion) and unrealized capital gains (JPY13.3 trillion). A characteristic trend during the past few years is the increase in amount of stocks owned by those companies on a book value basis as business firms turn against the trend of unwinding cross-shareholdings in an effort to protect themselves from foreign acquisitions (**Chart 8**). As the result of the increased exposure to the stock market, the negative impact of sharp stock market downturns – such as the recent stock market crisis – tends to be much larger than in the past.

Chart 8: Trends in other marketable securities (stocks) owned by listed companies on a book value basis

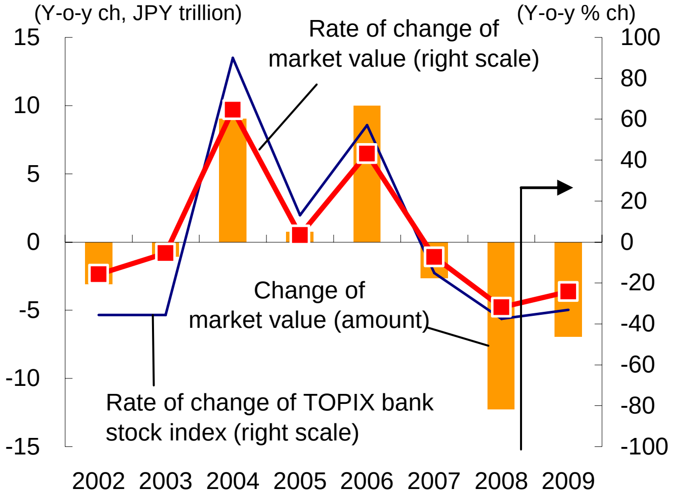


Source: Nikkei Financial Quest.

(2) Unrealized capital gains from cross-shareholdings will fall by approximately JPY7 trillion.

Let us assume that the number of cross-shareholdings remains unchanged on a book-value basis from the end of March 2008 to the end of March 2009, and that stock prices as of the end of October 2008 remain unchanged throughout the current fiscal year. Our calculation suggests that other marketable securities (stocks) posted on the asset side will decline by 24% or JPY7 trillion y-o-y as of the end of March 2009 (**Chart 9**). While fluctuations in market value of other marketable securities are not reflected in the profit and loss statement, they will directly affect the "Difference in Valuation of Other Marketable Securities". Assuming that 60% of the figure, excluding the influence of taxes, is reflected, the core capital of business firms will decline by JPY4.1 trillion.

Chart 9: Trends and outlook on fluctuations in market value of other marketable securities (stocks) owned by listed companies

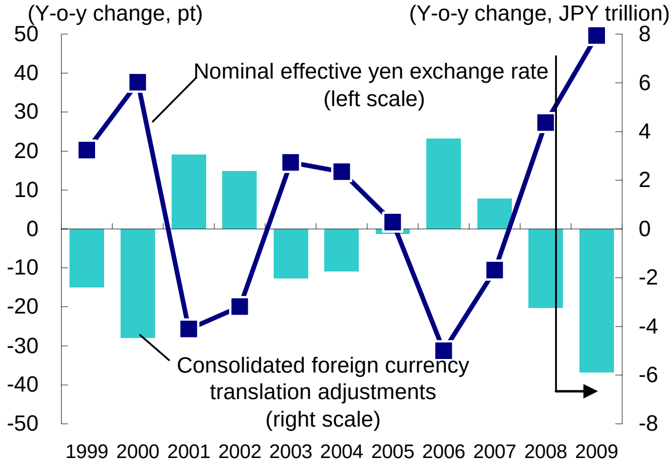


Source: Made by MHRI, based upon data by Nikkei Financial Quest and INDB.

(3) Core capital will shrink by JPY6 trillion due to foreign currency translation adjustments.

Other marketable securities are not the only factor eroding the core capital of business entities amid the financial market turmoil. Foreign currency translation adjustments generated from exchanging the assets of overseas subsidiaries and foreign bonds into Japanese yen at the end of a fiscal term also create a significant impact. The Japanese yen has been appreciating against major currencies, including the US dollar. On a consolidated basis, the values of trade receivables and overseas assets have shrunk dramatically when converted into yen. Based upon the assumption that the nominal effective yen exchange rate as of the end of October 2008 applies throughout the fiscal year, the yen will have surged by 15.6% y-o-y at the end of March 2009. Likewise, the foreign currency translation adjustments of all listed companies will decline by JPY5.8 trillion as of the end of March 2009, thereby eroding core capital (**Chart 10**).

Chart 10: Trends and outlook on the nominal effective yen exchange rate and foreign currency translation adjustments of listed companies



Note: Made by MHRI, based upon data by Nikkei Financial Quest and INDB.

(4) Core capital will not increase much in FY2008

Summarizing the foregoing, the core capital of corporations is predicted to come under downward pressures (approximately JPY-10 trillion) through the fall in value of the difference in valuation of other marketable securities, stemming from the stock market downturn and the decline in foreign currency translation adjustments arising from the strong yen. Since the core capital of listed companies stood at approximately JPY208 trillion as of the end of March 2008, a JPY10 trillion erosion would not necessarily be a major blow to their financial soundness. Nevertheless, there is no doubt that profit after tax at the end of the fiscal year ending March 2009 will fall sharply due to poor business performance. Since a part of the capital will be distributed outside as dividends, the pace of capital accumulation will inevitably slow down in comparison to the fiscal year ending March 2008. Even though earnings from core business in FY2008 are currently projected to reach JPY12.6 trillion, the deduction of JPY10 trillion from the figure implies that there will be virtually no accumulation of core capital (**Chart 11**).

Chart 11: The direct impact of the financial market turmoil upon core capital of listed companies

(JPY trillion)

	FY ending March 2008	FY ending March 2009 (forecast)	
Profits before tax	32.6	23.8	Projections by companies as of November 2, 2008 (-27.1%)
Tax	13.1	9.5	
Profits after tax	19.5	14.2	
Core capital	207.8	209.5	
Valuation difference on other marketable securities	8.1	4.0	Forecast by MHRI JPY-4.1 trillion
Foreign currency translation adjustments	-3.8	-9.7	Forecast by MHRI JPY-5.9 trillion

Source: Made by MHRI, based upon data by Nikkei Financial Quest and others.

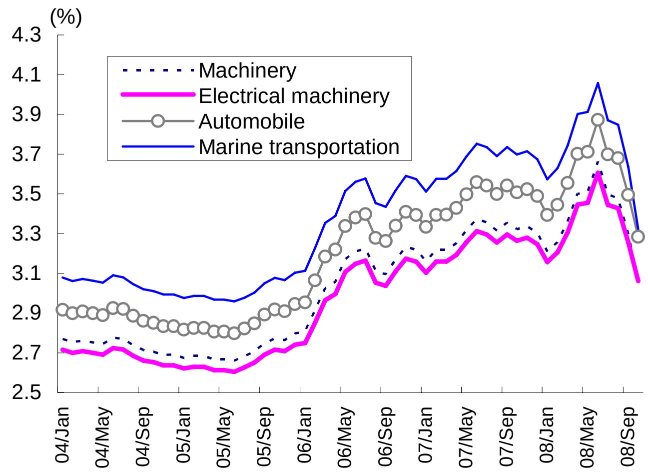
5. Conclusion

(1) Adverse impact on capital investment

As discussed so far, the financial crisis is having a considerable direct impact on corporate earnings and financial conditions. The deterioration of financial conditions through fluctuations in the value of financial assets as well as the deterioration of business performance would naturally dampen corporate sentiment. In an attempt to minimize a plunge in earnings, business firms would tend to reduce capital investment and labor. Interim financial results and other financial data indicate that quite a few business firms have already decided to forgo or postpone capital investment. MHRI's calculation of the expected growth rate of corporate earnings based on stock prices using the dividend discount model (a basic model for evaluating stocks) and the Fama-French three factor model (a model for calculating the expected rate of return on stocks) shows that the rate started to fall after peaking this spring (**Chart 12**). Thus, it is natural to assume that the expected growth rate in the minds of top management has also declined. Inevitably, capital investment will come under negative pressures due to reasons on the part of business firms. Furthermore, the balance sheets of financial institutions lending funds to such business firms are also deteriorating from the recent fall of stock prices.

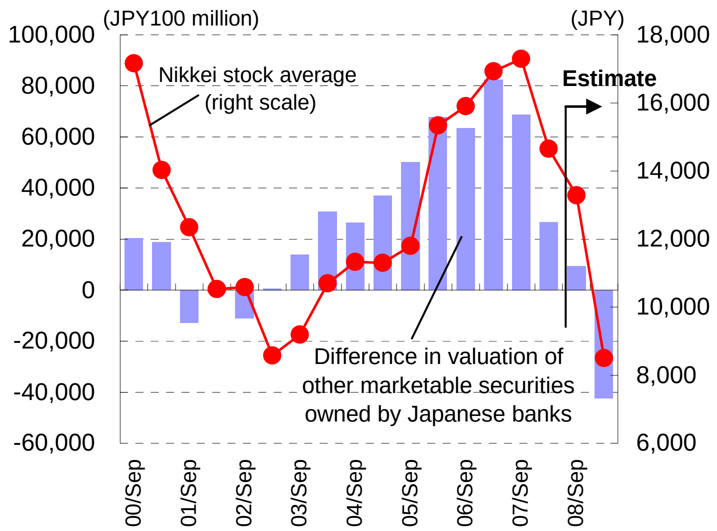
Based upon stock prices as of the end of October 2008, the difference in valuation of other marketable securities included in the capital account of domestic banks has sunk deep into negative territory (approximately JPY-4 trillion) (**Chart 13**). This, of course, would have a profound impact.

Chart 12: Implied growth rate



Source: Made by MHRI, based upon data by INDB and others.

Chart 13: The Nikkei Stock Average and unrealized profit/loss of Japanese banks



Source: INDB Accel.

(2) Extremely severe macroeconomic conditions will persist

The unprecedented financial crisis is serving as a serious blow upon corporate earnings and financial conditions of business firms as well as the financial conditions of financial institutions, inflicting serious damage on both sectors. As a matter of course, the impact will spill over to the household sector after a certain period of time. Measures are necessary to tackle the stock market downturn and the strong yen. If not, Japan must be braced for the persistence of an extremely grave macroeconomic environment. To avoid such a scenario, both fiscal and monetary measures must be taken to stabilize the financial market.

- End -