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Behavior Trends of Japanese Banks toward the Corporate Sector and Their Impact on the Economy

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Contents

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Summary

1. In the last decade, the growth rate of the Japanese economy was low, despite two economic recoveries, and policies for easing the financial situation have not provided an impetus for growth. This has partly been due to problems with financing for firms and the intermediary functions of financial institutions. This paper analyzes the procurement of external funds in the corporate sector through financial transactions by focusing on inter-industry fund allocation and investment and loan trends among Japanese financial institutions.

2. One-third of external funds in the Japanese corporate sector come from private-sector financial institutions in the form of borrowing and equity, while those in the U.S. are derived mainly from the capital markets. Therefore, the Japanese corporate sector is more sensitive to the behavior of financial institutions. Since the late 1970s, essentially all changes in funds have been consistently in borrowing; the contribution of the capital market, although it increased temporarily during the economic recovery of the late 1980s, has been limited. In the most recent economic recovery, the corporate sector showed a decline in funds, in other words a surplus of funds, for the first time.

By industry, there was strong demand for funds mainly in the manufacturing, service and wholesale industries in the 1980s. In the 1990s, however, other than a constant increase in transportation and communications through 1998, demand for funds generally switched from an increasing to decreasing trend. Measurement indices show that the amount of inter-industry credit shifts, which indicates the vigor of changes in fund allocation between industries, was significantly lower in the 1990s than the 1980s, suggesting that the supply of funds to industries with high growth potential may have been restricted.

3. On the fund supply side, almost 60% of all financing by Japanese banks consisted of loans and equity holdings to the corporate sector. Based on the near market value, considerable changes in financing in recent years were affected by the write-off of credited loans and share price fluctuations throughout the 1990s. In particular, each year since FY1996 showed a decline of financing with the exception of FY1999, when equity values rose. Looking at the fund supply by industry, changes in total borrowings, which are centered mainly on non-manufacturing industries, have been declining continuously since FY1998, while those in equity have been dominated by the share prices of manufacturing industries, which account for 60% of equity holdings.

4. The relationship between fund-raising in the corporate sector and the economic growth rate indicates that larger inter-industry credit shifts lead to an increase in total funds and consequently to higher economic growth. Moreover, the effect of the shifts persists for a considerable time. The decline in the efficiency of inter-industry fund allocation is thus one cause of the slow growth of recent years. The inter-industry credit shifts—including the disappearance of credited loans and fluctuations in the market value of equity holdings—also indicate stagnation in the supply of funds by Japanese banks in the 1990s. The amounts of shifts in FY2000, however, were significantly higher. It is conjectured that the decline in specific industries is substantially reflected in the disposal of equity cross-holdings and the write-off of non-performing loans by Japanese banks.

5. In order to elucidate the relationship between the decline of inter-industry credit shifts and Japanese bank behavior, transitions in total loans by banks to listed firms subsequently culminating in a need for financial assistance or le-

gal liquidation proceedings — defined as "default" in both cases — were observed. The share of the so-called "main banks" in the borrowing outstanding of those firms increased as the time of default approached, and grew rapidly in FY1997. Dependence on the main banks for funding increased just as screening of loan recipients became stricter due to the financial crisis that began at the end of 1997, the commencement of the self-assessment system, and the introduction of early corrective measures in FY1998. As a result, the burden of supporting individual firms became concentrated in specific banks, which were thus compelled to focus resources on managing existing non-performing loans. This led to inflexible reallocation of their funds and so reduced activity in inter-industry credit shifts.

6. The new Basel Capital Accord, currently under examination, addresses the standard for more elaborate credit risk management. Each bank must maintain minimum capital requirements for an appropriate level of losses calculated based on that standard. Japanese banks, burdened by non-performing loans and equity valuation losses, are facing difficult times and are being forced to deal with individual loans more strictly. They are also expected to take the initiative in reducing management risk, while remaining sensitive to the correlation of return and risk from their asset components.

7. It is therefore important to raise the efficiency of financial intermediation in order to satisfy the demand for funds in industries that have the potential to drive growth, which is linked to the growth of the economy overall. It is also essential to improve the financial intermediary system, while noting that comprehensive risk control by Japanese banks is a major priority. Tasks ahead are to enhance the credibility of securities markets, encourage the disclosure and accumulation of practical information for investors, and promote the formation of reasonable trading in the markets for each security or liquidated loans.

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Introduction

The Japanese economy experienced a low growth rate during the 1990s, and more recently, monetary easing measures have been taken aggressively. The lending practices of the banking sector, which should be mainly responsible for implementing the financial policies as financial intermediation, have not functioned adequately. [1]

This study examines corporate financing as a cause of the low economic growth rate during the 1990s. It also looks at the intermediary function of financial institutions, especially banks,[2] and their role in hindering the spread of financial policies. Specifically, it sheds light on the conditions of corporate financing based on the assumption of industrial dynamism indicated in Figure 1. Growth is stimulated by the active supply of funds to the relatively few industries that have growth potential. A growth model is assumed in which the demand for funds expands as those industries grow, which then spreads to surrounding industries and results in macroeconomic growth. It appears that changes in the allocation of funds ground to a halt in the Japanese economy in the 1990s and funds supplied were not sufficient relative to the capacity for growth.

This study also attempts to verify the hypothesis that inter-industry credit shifts declined in the 1990s and caused the low growth rate during that period, whereas Japanese banks had been expected to play the primary role in efficiently allocating funds to Japanese firms. The study also discusses the mechanism of the prolonged decline of the shifts, or the inefficient allocation of funds.

The study is organized as follows. Chapter I examines the financing trends of Japanese corporations, first in aggregate and then by industry, and estimates the relationship between the vigor of inter-industry credit shifts and economic growth based on long-term time-series data. Chapter II surveys share-holding and loan trends in the banking sector and discusses the price variability of share holdings as well as the so-called "main banks" against a background of funding inflexibility in the 1990s. Finally, the future prospects are outlined, taking into account trends in international regulations.

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[1] In the "Box", the conditions of financial policy penetration are reviewed from the perspective of the money stock.

[2] With regard to the transition of financial easing policies, the investment stimulation effect of lowering interest rates has been the most important traditionally (money channel). Nevertheless, there are empirical analyses showing that the changes in the lending behavior of Japanese banks have also had a significant effect (credit channel). The analysis by Ueda (1993) and the panel analysis by Hoshi, et al. (1993) are among the forerunners; however, among examples since the exacerbation of the non-performing loan problem in Japan, Morshink and Bayoumi (1999) pointed out that changes in total loan exposure have an effect on economic growth. Also, Miyagawa, Nosaka and Hashimoto (1995) stated that the decline in the ability of Japanese banks to bear the burden of risk associated with the surge in non-performing loans during the first half of the 1990s hindered capital spending by small- and medium-sized companies. Ogawa and Kitasaka (2000) stated that, in addition to the effect of the drop in land prices during the 1990s, the above-mentioned changes restrained capital spending, especially by small- and medium-sized companies and non-manufacturing industries. Ogawa (2001) also pointed out much the same with the addition of inventory investment. In addition, the study by Saida and Sekine (2000) is an empirical analysis that sheds light on fund allocation and industries in a similar manner to this study.

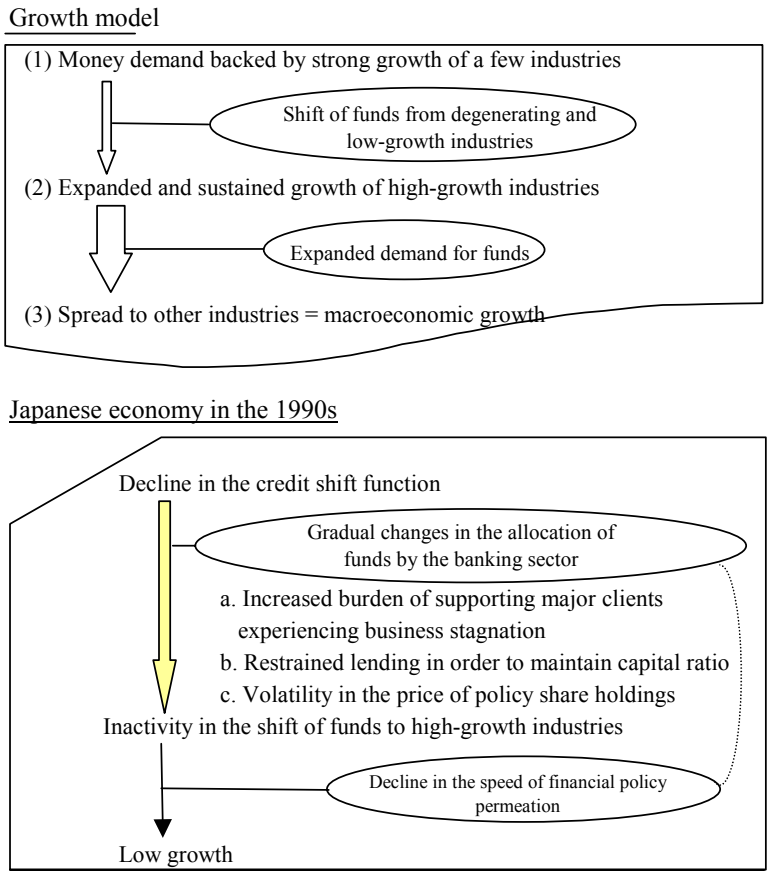


Figure 1 Industry Dynamism and the Japanese Economy in the 1990s

BOX: Money Stock under Financial Easing Policies

Table 1 lists the financial policies announced by the Bank of Japan. Monetary easing policies began with the cut in the official discount rate in July 1991, more than ten years ago. In July 1995, a target rate was specified assuming that the uncollateralized overnight call rate would "remain somewhat below" the prime rate, and the rate has remained at historically low levels ever since. Furthermore, in March 2001 the BOJ undertook quantitative easing measures and funds have since been aggressively supplied to short-term financial markets by changing the target rate to the current account balance of the BOJ. The monetary easing was intended to increase the money stock with credit expansion in capital markets or in commercial banks.

Table 1 Major Changes in Financial Policies

Implementation date	Official discount rate (%)	Induction rate (%)	Changes in methodology of providing liquidity		
8/30/90	6.00				
7/1/91	5.50				
11/14	5.00				
12/30	4.50				
4/1/92	3.75				
7/27	3.25				
2/4/93	2.50				
9/21	1.75				
4/14/95	1.00				
7/7/95		1.00 - α			
9/8/95	0.50				
9/9/98		0.25			
2/12/99		0.15			
8/11/00		0.25			
2/13/01	0.35				* Introduction of Lombard-type lending facility * Full-scale short-term government bond buy-up operations * Announcement of bill purchase operations in all branches (implemented in July)
3/1	025	0.15			
3/19			BOJ current account balance ¥5 trillion	Monthly amount of outright purchase of long term government bonds Examination of increase	
8/14			~~¥6 trillion~~	¥600 billion (← ¥400 billion)	
9/18	0.10		~~¥6 trillion~~ <u>or more</u>		* Temporary extension of maximum loan term for Lombard-type lending facility : 5 → 10 business days (September reserve maintenance period only) * Non-sterilization of foreign exchange market dollar intervention funds
12/19			¥10-15 trillion	¥800 billion	* Examination of broadening the range of the eligible collateral for operation : Real estate secured ABS, ABCP (acceptance as of Feb. 4) * Utilization of CP repurchases
2/28/02				¥1 trillion	* Extended term for the application of the official discount rate to Lombard-type loan interest : 5 → all business days (March loading period only) * Examination of expanding operation targets (loans to Deposit Insurance Corporation of Japan and government special account for tax allocations) Greater money stock than the ¥10-15 trillion target by the end of the fiscal year

Source: Bank of Japan "Monthly Policy Committee Report" and "Financial and Economic Statistics Monthly"

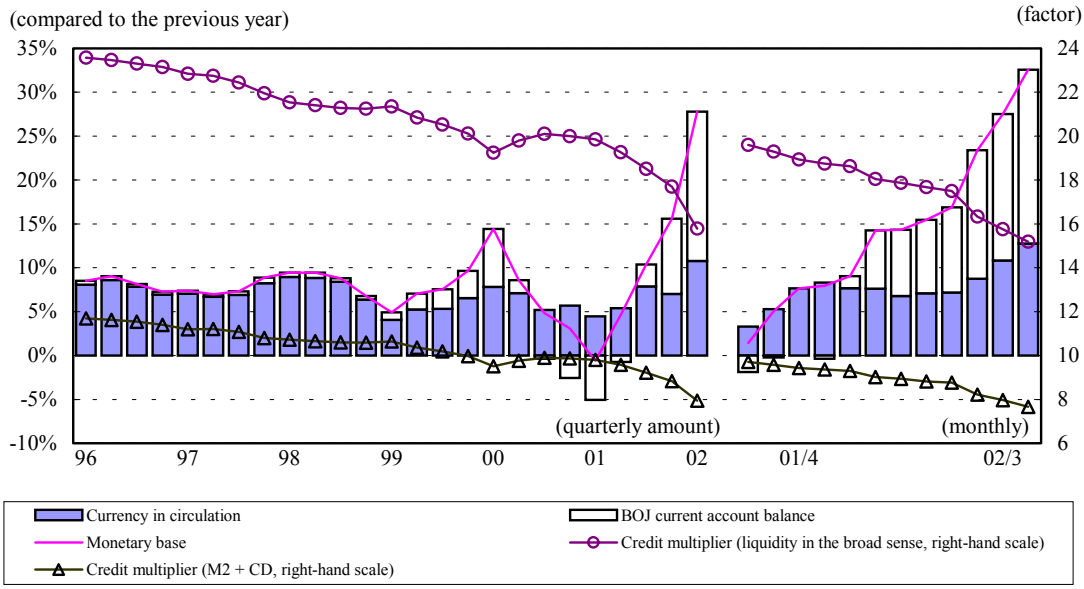


Figure 2 Monetary Base and Credit Multiplier

Notes: 1. The bar graph of currency in circulation and the BOJ current account balance express contribution to an increase in the monetary base.
2. The monetary base growth rate and contribution of each item are based on a comparison of average balance during the term with the same term of the previous year.
3. Credit multiplier = money stock/monetary base. Money stock = M2 + CD or liquidity in the broad sense. The values are seasonally adjusted.

Source: Bank of Japan Research and Statistics Bureau "Financial and Economic Statistics Monthly"

Figure 2 looks at monetary easing policies since 1996 based on trends in the monetary base, or the sum of currency in circulation, and the BOJ's current account balance. The monetary base has been expanding, reflecting active monetary easing policies in recent years.[3] Through raising the target level of the balance since the autumn of 2001, in particular, the pace of expansion has been accelerating. On the other hand, if the money stock is considered to be M_2 + CDs (certificates of deposit) mainly in the deposits of commercial banks, the speed of growth is relatively slow. Consequently, the long-term decline of the credit multiplier, which is derived by dividing the money stock by the monetary base, persists. Generally, if the credit multiplier is stable, financial adjustment by the central bank is capable of controlling the money stock in the overall market. A sustained decline in the credit multiplier, however, means that the effective speed of monetary easing policies is declining.[4]

[3] The temporary decline compared to the previous year at the beginning of 2001 was a reactionary decline resulting from the temporary large-volume fund supply in response to the Y2K problem that occurred from the end of 1999 through the beginning of 2000.

[4] The credit multiplier has continued to decline since 1992, however there were also special causes for the decline during the first half of the 1990s. According to Hachisuka and Watanabe (1992), Chapter 2, and Adachi (1994), Chapter III, while the interest rate on investments in deposits exceeded the interest rate on borrowings in corporate financing during the latter half of the 1980s, firms undertook compensating transactions by investing funds procured at low interest in deposits. Entering the 1990s, this turnabout in interest rates disappeared and the ratio of deposits to cash in the corporate sector tended to decline due to the cancellation of corporate term deposits, thereby restraining money supply growth. In addition, Hosono, Sugihara and Mihira (2001), Chapter 4, conducted an empirical analysis of the long-term relationship between the credit multiplier and money supply. A portion of term postal deposits that reached maturity flowed into deposits, increasing the M_2 + CD growth rate somewhat since the latter half of 2000. The decline in the credit multiplier is even more notable if the money supply is seen as liquidity in the broad sense (i.e., including deposits, investment trusts and other instruments of financial institutions other than domestically licensed banks).

Figure 3 analyzes the contribution of changes in the money stock (M_2 + CD) in terms of credit. Overall, growth remains around 3 to 4%, although growth in recent years has been the result of an increase in government bond holdings while growth overall is restrained due to the general decrease in loans to the private sector. In other words, the banking sector, which pays a key role in making financial policies work, increased its holdings of government bonds and continues to avoid lending to the private sector. The growth of money stock is therefore sluggish. This lending stance of Japanese banks appears to be related to the speed of permeation of financial policies.

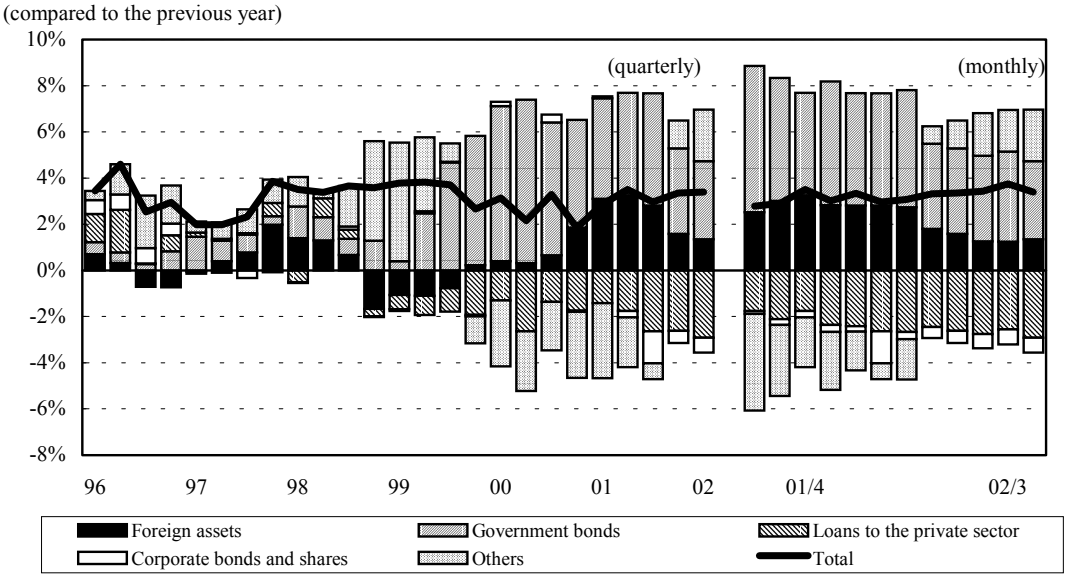


Figure 3 Analysis of Contribution of the Money Stock (M_2 + CD) in Terms of Credit

Note: The money stock growth rate and contribution of each item are based on the balance at the end of the term compared to the previous year.
Source: BOJ "Financial and Economic Statistics Monthly"

I Financing Trends of Japanese Firms

1. Macro-trends

This study classifies corporate financing into two types, "internal funds" (= profit after taxes – profit distribution + depreciation + changes in reserves), in which profit and other internal funds are considered to be sources of funding, and "external funds" (= changes in borrowings + changes in bonds + changes in capital + changes in trade credit), which are actually procured from financial institutions or capital markets. External funds are the focus of this analysis, and the procurement of external funds is referred to below simply as "financing".[5]

Table 1-1 shows the total exposure of Japanese and U.S. corporate financing in the non-financial sector as of the end of 2001. Among Japanese firms, liabilities are 70%, with borrowings and bonds accounting for almost 50% and trade credits and other liabilities accounting for the other 20%. In addition, from the perspective of financing from private-sector financial institutions, the 30% for borrowings and 3% for shares combined account for one-third. Meanwhile, among U.S. corporations, procurement through bonds (14%) and from capital markets (54%) account for approximately 70%. Comparing the two, the financing of Japanese firms is more highly leveraged on average and must be more sensitive to the behavior of financial institutions than that of US firms.[6]

Based on Figure 1-1, an analysis of the changes in financing of Japanese firms since 1977 by dividing the period according to the business cycle reveals the following characteristics. First of all, borrowings consistently account for virtually all of the changes overall. Next, although financing from capital markets increased during the period of economic expansion following the first quarter of 1987 (corresponding to the Heisei boom), the scope of change tended to decline thereafter. Consequently, capital markets have not shown any significant contribution since the end of the Heisei boom from the view of corporate financing. Thirdly, bills and accounts payable, which correspond to trade credits, had a strong correlation

Table 1-1 Corporate Financial Liabilities and Capital Balance (end 2001)

	Japan		U.S.	
	Amount (¥ tril.)	Ratio (%)	Amount ($ tril.)	Ratio (%)
Borrowings	431	39	2.1	10
(from private-sector financial institutions)	(329)	(30)		
Bonds	85	8	2.9	14
trade credits	171	15	1.2	6
Other liabilities	77	7	3.0	15
Shares and other equities	341	31	10.9	54
(held by private-sector financial institutions)	(29)	(3)		
Total	1,104	100	20.1	100

Notes: 1. Japan: private nonfinancial corporations, U.S.: nonfarm nonfinancial corporate business.
2. The amount of share holdings in private-sector financial institutions is estimated by using "Share Ownership Survey" of the National Conference of Stock Exchanges. The amount of the nonfinancial industry share held by financial institutions is estimated using the holding ratios of financial institutions.

Source: BOJ "Flow of Funds Accounts (preliminary report)", FRB "Flow of Funds Accounts of the United States"

[5] Actually, a portion of the financing through equity financing is incorporated in capital reserves; however, since it is not possible to distinguish between capital reserves and profit reserves in corporate statistics, only capital is dealt with here for the sake of convenience.

[6] According Adachi (1994), Chapter IV, since the capital ratio rose during the period of expansion in the latter half of the 1980s due to the activation of equity finance, especially among manufacturing industries, corporate financing, with the exception of real estate and other industries, remained generally sound until 1993, subsequent to the collapse of the bubble economy.

(compared to the previous year: ¥ tril.)

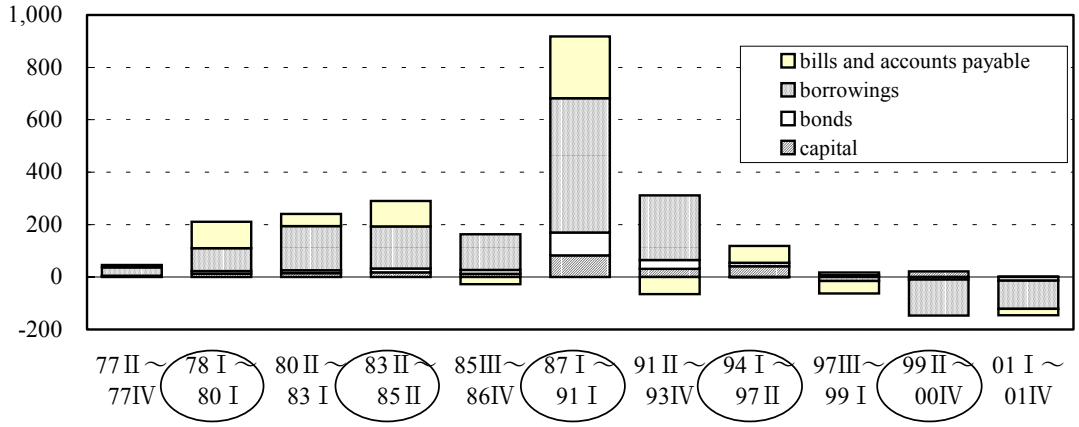


Figure 1-1 Transitions in Financing

Notes: 1. Total change for all types and sizes of industry by business cycle, each period of the expansion (encircled) or the slowdown and recession.
2. Borrowings are defined as the sum total of long-term and short-term borrowings from financial institutions and discounted bills receivable.
3. Revisions of discontinuity as a result of changes in the number of samples for each fiscal year were carried out for each industry (manufacturing: 18, non-manufacturing: 17) based on the methodologies of the Institute for Social Engineering (1976), with capital classified into three groups: ¥10 – 100 million, ¥100 million – 1.0 billion and ¥1 billion or more. However, if zero exposure was included in the data required for the revision of discontinuity, that data was excluded from the revision. In addition, since the amount of corporate bonds issued by firms with capital of ¥10 – 100 million was so small, it caused considerable fluctuation in specimen restoration and was therefore set uniformly to zero.
4. The privatization of Nippon Telephone and Telegram and Japan Railways was adjusted individually using the Securities Reports of each company.

Source: Ministry of Finance "Quarterly Report of Corporate Statistics and Securities Reports"

with sales and, after the second quarter of 1983, indicated a change consistent with the business cycle ― increasing during periods of economic expansion or recovery and decreasing in times of slowdown or recession. Finally, since the third quarter of 1997, overall financing started to decline. From the second quarter of 1999 through the fourth quarter of 2000, in particular, financing declined in spite of the economic recovery and thus there are now funding surpluses in the corporate sector overall.

The tendency of funding surpluses and the decline in borrowing in the corporate sector from FY1997 suggests that demand for funding by corporations was stagnant.[7] Still, factors specific to financial institutions may also have influenced the decline in borrowing.

For example, Figure 1-2 indicates the most recent conditions regarding cash flow as perceived by companies and the corporate demand for funds as perceived by banks. This indicates that cash flow DI worsened by 7 percentage points from the second quarter of FY2000 until most recently, whereas corporate fund demand DI from the perspective of banks declined 24 percentage points from the third quarter of FY2000 until most recently. Thus, the perceptions of the fund demand side and supply side differ and, if the corporate cash flow deteriorates, there is not a simple relationship in terms of supply and demand balance perceived by banks with the demand for funds. In addition, Figure 1-3 compares the perception of companies toward the lending attitude of financial institutions and the perception of banks toward loan management

[7] Refer to Ando (2001), Chapter 3, for an analysis focusing on the repayment obligation of companies as an issue on the fund demand side.

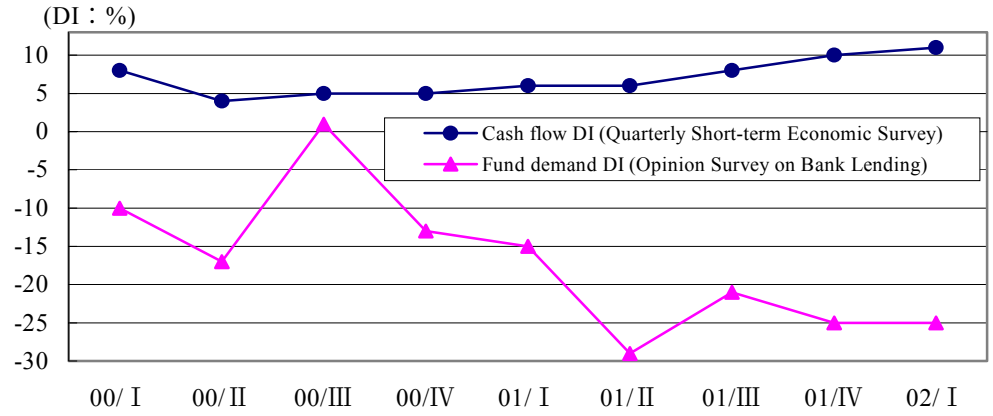


Figure 1-2 Corporate Cash Flow and Fund Demand from the Perspective of Banks

Notes:
1. Cash flow DI is expressed as the ratio of companies over the range of "tough" to "easy" (symbols are the inverse of the usual)
2. Fund demand DI is indicated by classifying the ratio of banks for each response as "increase" + "some increase" × 0.5 – "decrease" – "some decrease" × 0.5.
3. The quarterly segments are March, June, September and December for cash flow DI and April, July, October and January for fund demand DI, with a gap of about a half month between them.

Source: Cash flow DI: Bank of Japan Research and Statistics Bureau "Quarterly Short-term Economic Survey"
Fund demand DI: Bank of Japan Financial Market Bureau "Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks"

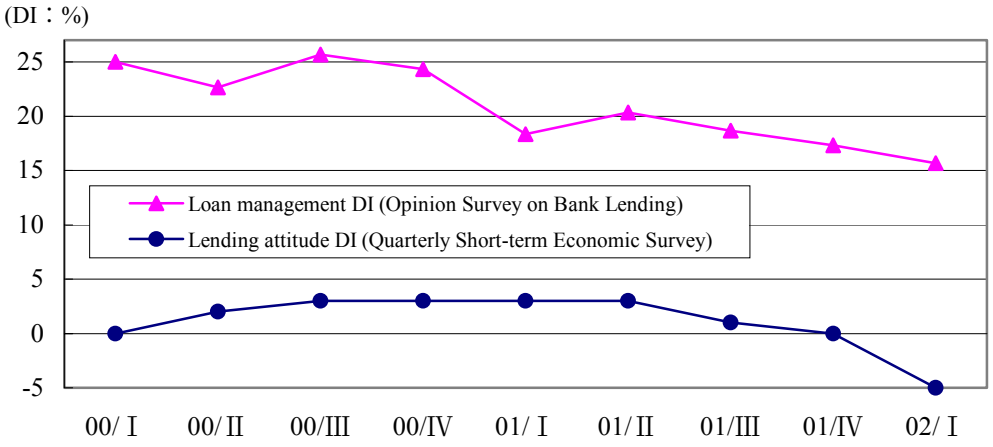


Figure 1-3 Lending Attitude and Degree of Eagerness

Notes:
1. Lending attitude DI is expressed as the ratio of companies over the range of "lenient" to "demanding."
2. Loan management DI is indicated by classifying the bank ratio for each response as "eager" + "somewhat eager" × 0.5 – "cautious" – "cautious" – "somewhat cautious" × 0.5. Arithmetic averages for large, mainstay and small/medium-sized companies for the past 3 months
3. The quarterly segments are March, June, September and December for cash flow and April, July, October and January for fund demand, with a gap of about a half month between them.

Source: Lending attitude DI: Bank of Japan Research and Statistics Bureau "Quarterly Short-term Economic Survey"
Loan management: Bank of Japan Financial Market Bureau "Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks"

using the same survey. It shows the perceptions have coincided since the third quarter of 2000, since when banks have become more cautious toward lending over time. In other words, as banks became more cautious, they perceived that the demand for funds was declining. The two diagrams thus suggest that, in addition to the role of corporate fund demand in the decline in financing, the lending attitude of banks was also involved.[8]

2. Inter-industry Credit Shifts

This section and later sections pursue more detailed aspects of financing behavior by industry.

Figure 1-4 shows the transition in financing of firms with capital of ¥10 million or more, which in principle are subject to complete count surveys, from among corporate statistical data. The contribution of manufacturing industries was generally the greatest until FY1985, followed by wholesale, electrical energy and other industries. However, real estate and services ranked top from the latter half of the 1980s until FY1990.

At the beginning of FY1990, when the business environment was beginning to slow, the increased vigor of the real estate and construction industries remained prominent until FY1993, as adjustments in wholesale and other industries were initiated. In addition, transportation and telecommunications continued to expand firmly throughout the 1990s. From the latter half of the 1990s until most recently, however, almost all of the industries have generally decreased financing.

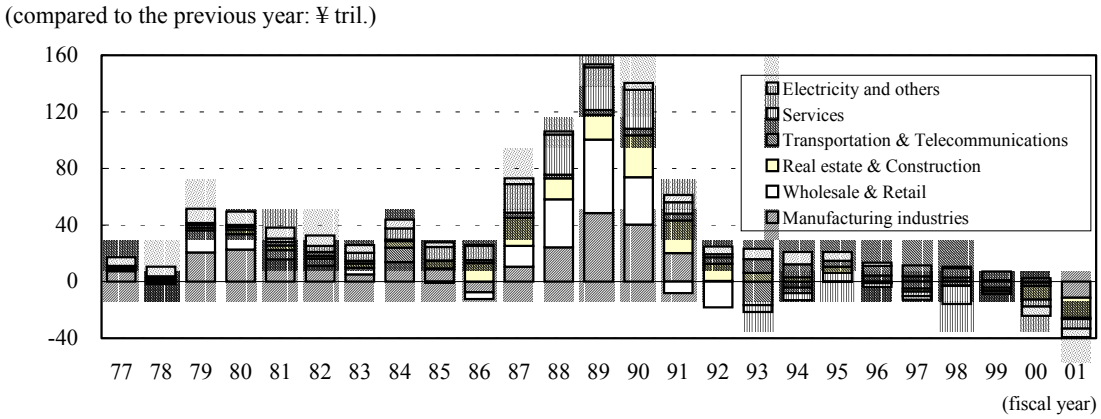


Figure 1-4 Changes in Financing by Industry

Notes:
1. The figure is for firms with capital of ¥10 million or more.
2. Borrowings are the sum total of short-term and long-term borrowings from financial institutions and discounted bills receivable.
3. Revisions of discontinuity as a result of changes in the number of samples for each fiscal year were carried out for each industry (manufacturing: 18, non-manufacturing: 17) based on the methodologies of the Institute for Social Engineering (1976), with capital classified into three groups in the same manner as Figure 1-1. However, if zero exposure was included in the data required for the revision of discontinuity, the revision was carried out with the exclusion of that data.
4. The privatizations of NTT and JR were adjusted individually using the Securities Reports of each company.
5. The calendar year is used for 2001.

Source: Ministry of Finance "Quarterly Report of Corporate Statistics and Securities Reports" and Securities Reports of NTT and JRs.

[8] The Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks was first released in April 2000. Since bias unique to questionnaire surveys is apparent, quantitative surveys require the accumulation of data over a fixed term. The 50 banks covered by this survey account for about 75% of total lending.

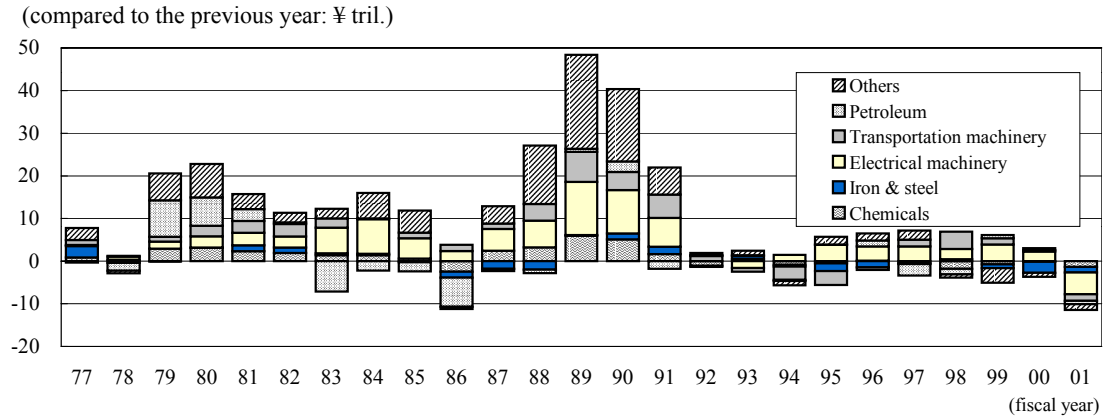


Figure 1-5 Changes in Financing by Industry (Manufacturing Industries)

Note: Same as Figure 1-4.
Source: Ministry of Finance "Quarterly Report of Corporate Statistics and Securities Reports"

Figure 1-5 categorizes the major industries from among the manufacturing industries of Figure 1-4. The stockpiling of petroleum reserves and refinery-related capital spending at the end of the 1970s, Video Tape Recorder production and semiconductor-related investments in electrical machinery during the first half of the 1980s, and the increased production of automobiles seen in transportation machinery in the late 1980s possibly reflect the course of robust company growth in Japan from the aspect of financing.[9] Those industries were the driving force of the Japanese economy during these periods.

With regard to the conditions of financing, the transitions in $\hat{\sigma}_t$, as given by the equation below as an index indicating the vigor of inter-industry credit shifts, is examined next. $\hat{\sigma}_t$ is the standard deviation of Δm_{it} weight-averaged by the share of industry and Δm_{it} is the growth rate of m_{it}, the amount of financing of industry i at time t, compared to the same term in the previous year.[10] ΔM_t is the growth rate against the same term in the previous year of the financing of all industries at time t.

$$\hat{\sigma}_t = \left[\sum_{i=1}^{35} \frac{m_{it}}{M_t} (\Delta m_{it} - \Delta M_t)^2 \right]^{\frac{1}{2}}$$

A larger value of $\hat{\sigma}_t$ means that there are large disparities between industries in the rate of change in financing. Therefore, there will be a sharp increase, or a reaction to such increase, in fund demand reflecting the expansion of facilities or sales increases resulting from technological innovation or deregulation in specific industries. Consequently dynamic fund allocation will contribute to higher economic growth.

[9] The Japan Development Bank (1991) is referred to primarily with regard to investment in plant and equipment.

[10] This is an index of sectoral shifts in employment introduced by Lilien (1982). In this study, total exposure compared to the same quarter of the previous year is used; thus, changes occurring within the quarter are not reflected and the impact of short-term changes within the year is lessened. In addition, there is also the shortcoming of over-estimation of $\hat{\sigma}_t$ if there is broadening deviation between the fund supply change rate of each industry and the fund supply change rate of the overall economy over the long term.

In addition, Davis (1987) pointed out that there are problems when observing reallocation in the medium- to long-term since $\hat{\sigma}_t$ in the equation above includes the effect of changes in reactions. However, with regard to financing, Davis surmised that the reallocation of required funding, including temporary fund demand, should be possible.

Furthermore, if the value of the total fund change rate Δm_t is large, $\hat{\sigma}_t$ may also be large. However, when an estimate was made using share instead of the fund change rate, the difference between the latter half of the 1980s and the period of FY1990-93 decreased, although $\hat{\sigma}_t$ tended to be low after FY1994 (refer to Appended Table 1).

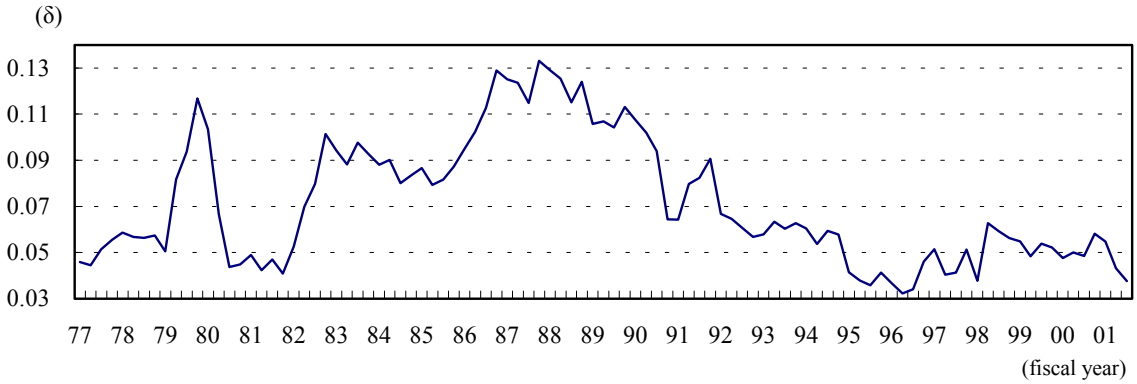


Figure 1-6 Vigor of Inter-industry Credit Shifts

Note: Estimated based on the data of Figure 1-4 (capital of one billion yen or more, 35 industries, quarterly of the corporate statistics)

Figure 1-6 plots the financing conditions of Figures. 1-4 and 1-5 with measurement and transitions of $\hat{\sigma}_t$. After rising from the first half of the 1980s and remaining at about 0.1 until the early 1990s, $\hat{\sigma}_t$ began to decline, and remained around a low of 0.05 from the mid-1990s. This parallels the trends in the Japanese economy that were favorable until the 1980s. In addition, the peak was in FY1987-88, about two years earlier than the changes in financing of Figure 1-3.

In corporate financing after FY1987, however, funds were procured through large-volume equity finance, while financial management of specified monetary trusts, fund trusts, and other financial products aggressively expanded. Companies sometimes have both fixed deposits, which had come to pay higher interest rates due to financial deregulation, and funds procured on the market through commercial paper or other instruments. There may also have been excessive bank loans to leasing companies, which were involved in real estate and non-bank operations. Taking these into account, the fact that $\hat{\sigma}_t$ in 1987-89 sometimes exceeded its value at the time of the oil shock reflects the excessive financing during the bubble economy. Note that the level of $\hat{\sigma}_t$ during the 1990s was low. These characteristics are discussed in detail in the next section in terms of their causal relationship with the economic growth rate and financ-

Table 1-2 Industries with Large Changes in Financing

Rank	77Ⅱ-77Ⅳ	78Ⅰ-80Ⅰ	80Ⅱ-83Ⅰ	83Ⅱ-85Ⅱ	85Ⅲ-86Ⅳ	87Ⅰ-91Ⅰ	91Ⅱ-93Ⅳ	94Ⅰ-97Ⅱ	97Ⅲ-99Ⅰ	99Ⅱ-00Ⅳ	01Ⅰ-01Ⅳ
1	Electricity	Petroleum	Office services	Office services	Office services	Office services	Wholesale	Other transportation & telecommunications	Office services	Other services	Office services
2	Marine transportation	Electricity	Petroleum	Petroleum	Real estate	Real estate	Construction	Other services	Precision machinery	Office services	Real estate
3	Wholesale	Iron & steel	Nonferrous metal	Electrical machinery	Petroleum	Other services	Cinema & entertainment	Office services	Petroleum	Wholesale	Broadcasting
4	Petroleum	Other manufacturing	Electricity	Other services	Wholesale	Iron & steel	Real estate	Wholesale	Other transportation & telecommunications	Real estate	Retail
5	Cement, ceramics & glass	Wholesale	Iron & steel	Nonferrous metal	Precision machinery	Electricity	Other transportation & telecommunications	Electricity	Mining	Other transportation & telecommunications	Other services

Notes: 1. The data of Figure 1-4 is categorized by business cycle. The top five ranking industries in terms of degree of contribution to $\hat{\sigma}_t$ in each period are listed.
2. Shaded periods indicate periods of economic slowdown or recession; shaded items indicate manufacturing industries.

Source: Ministry of Finance "Quarterly Report of Corporate Statistics and Securities Reports"

ing growth rate.

Based on Table 1-2, industries having a large contribution to $\hat{\sigma}_t$ are surveyed together with the business cycle. Since the 1980s, office services constantly contributed significantly to $\hat{\sigma}_t$. While petroleum, steel and other material-type manufacturing industries and the energy sector were prominent until the first half of the 1980s, real estate, wholesale and other transportation and telecommunications ranked near the top from the latter half of the 1980s. Recently, precision machinery, with a surge in capital spending for semiconductor production in the latter half of the 1990s, and broadcasting, in which equity finance plays a major role due to recent listings on stock markets, have been prominent.

3. Relationship to Economic Growth

With regard to the relationship between changes in corporate financing and economic growth, the causality between the vigor of inter-industry credit shifts $\hat{\sigma}_t$ and the actual economic growth rate is examined. The Vector Autoregressive model (VAR) is estimated simply, and Granger causality tests are run. To gain an overview of the conditions of financing other than the vigor of credit shifts, the growth rate ΔM_t of total corporate financing is included in the model as a variable.[11] The results of the bivariate Granger causality tests with two of three variables are indicated in Table 1-3. As indicated in Figure 1-7, causality was obtained by which, when inter-industry credit shifts are activated, they spread to growth in total financing and thereafter the economic growth rate increases.

Table 1-3 Results of Bivariate Granger Causality Tests

		Explanatory variables		
		GDP	ΔM	log $\hat{\sigma}$
Explained variables	GDP		10.27** (0.002)	7.28** (0.009)
	ΔM	0.59 (0.446)		7.78** (0.007)
	log $\hat{\sigma}$	3.80 (0.055)	0.31 (0.582)	

Notes: 1. GDP is the real economic growth rate.
2. The upper value is the F value and the lower value in parentheses is the P value. ** indicates significance at a level of 1%.
3. The estimate period is from the second quarter of 1983 through the fourth quarter of 2001.

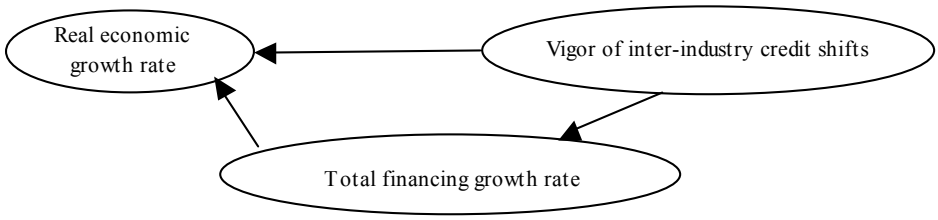


Figure 1-7 Results of Granger Causality of Financing and Economic Growth

Note: There is causality in the sequence of vigor of inter-industry credit shifts → total financing growth rate → real economic growth rate

[11] Logarithm is used for $\hat{\sigma}_t$. In addition, a lag length of one quarter is used based on Schwartz information criteria.

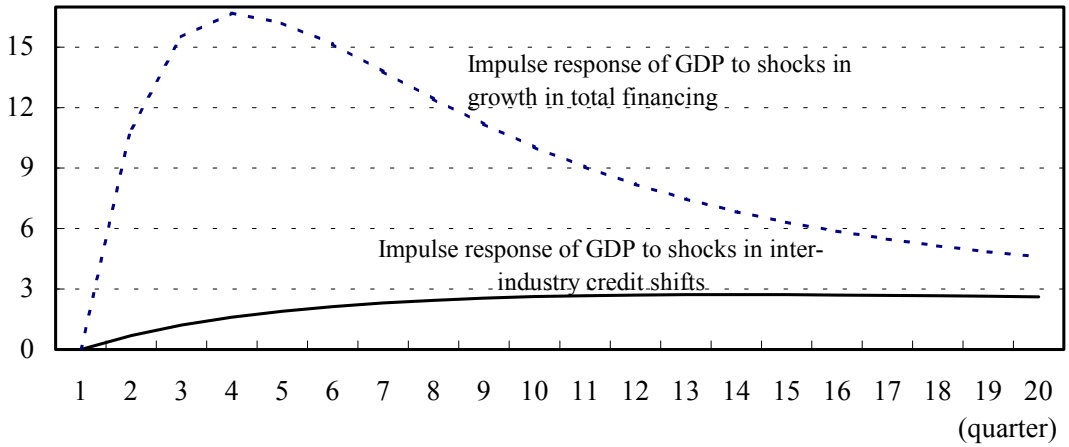


Figure 1-8 Impact of the Real GDP due to a One-unit Rise in the Index

Note: Estimated based on the data of Figure 1-4 (capital of ¥10 million or more, 35 industries, quarterly of the corporate statistics).

Figure 1-8 shows impulse responses obtained by VAR according to the three variables above. It indicates the change of the real economic growth rate over time against the shock of a one-unit rise in the variable. The reaction to the rise in the growth rate of total financing is a rapid increase, reaching a peak in four quarters and then switching to decline. Meanwhile, with the activation of credit shifts, the initial reaction, while gradual, continues to have an impact in the long term. Consequently, one factor in the prolonged sluggish growth in Japan in the 1990s was that the intermediary function of financial institutions for allocating funds appropriately between industries declined. If the economic growth rate was estimated with $\hat{\sigma}_t$ reverted from its current level around 0.05 to around 0.09, where it had been during the first half of the 1980s, and with the other conditions constant, the growth rate could be raised by 0.9% after one year, 1.4% after two years, and about 1.6% after three to five years.[12] In contrast, for an equivalent effect to be achieved by increasing lending and other total financing, ΔM, under the same conditions, growth of about 10% would be necessary.

Since highly developed economies rarely realize a broad increase in the total amount of financing in the overall economy by deliberately promoting all corporate financing, fund allocation needs to be dynamically changed on the fund supply side.[13]

[12] Estimated when the difference between log 0.05 and log 0.09 is applied using an impulse response.

[13] Although the decline in financial intermediation is stressed in this study as a factor in lowering $\hat{\sigma}_t$ and reducing inter-industry credit shifts, the decline in the shock of real economy like labor reallocation can be a factor theoretically. Regarding the latter, the analysis by Fujita (1998) indicates that the shock of labor reallocation declined in the first half of the 1990s, whereas Presad (1997) and Saida and Sekine (2001) found no significant difference between the 1980s and 1990s.

In addition, the estimation of $\hat{\sigma}_t$ in this study is limited purely to inter-industry credit shifts targeting large firms with capital of ¥1.0 billion or more, while Saida and Sekine (2001) conducted estimates including inter-scale credit shifts with capital divided into five levels. However, the results of Saida and Sekine were similar to those of this study.

II Financing and Loan Environment of Japanese Banks

1. Loan and Share Holding Trends of Japanese Banks

This section examines asset management of the banking sector, i.e., the fund supply side. As indicated in Table 2-1, of the ¥740 trillion in assets under management in the domestic banking sector, loans to companies account for 50%, with 6% in the form of shares and investments. Including industrial bonds, CPs, about 60% is supplied from banks to the corporate sector. Changes in the amount under management are examined below based on loans and shares, which are of higher relative importance.

Figure 2-1 shows the change in total corporate loan exposure and the market value of share holdings of Japanese banks. Their loan exposure and unrealized profit on shares both increased in the 1980s. As share value declined throughout the 1990s, however, they inevitably carried out trading to make profits realized on share hold-

Table 2-1 Total Financial Assets of Japanese Banks (end 2001)

	Amount (¥ tril.)	Ratio (%)
Cash and deposits	29	4
Loans	470	64
(corporate loans)	(372)	(50)
(housing loans)	(73)	(10)
(consumer credit)	(10)	(1)
(government)	(15)	(2)
Corporate bonds and CPs	10	1
Government bonds and short-term government securities	45 66	6 9
Other securities	56	8
Derivatives	27	4
Others	37	5
Total	740	100

Source: Bank of Japan Research and Statistics Bureau "Flow of Funds Accounts (preliminary), Statistics of Loans by Recipient"

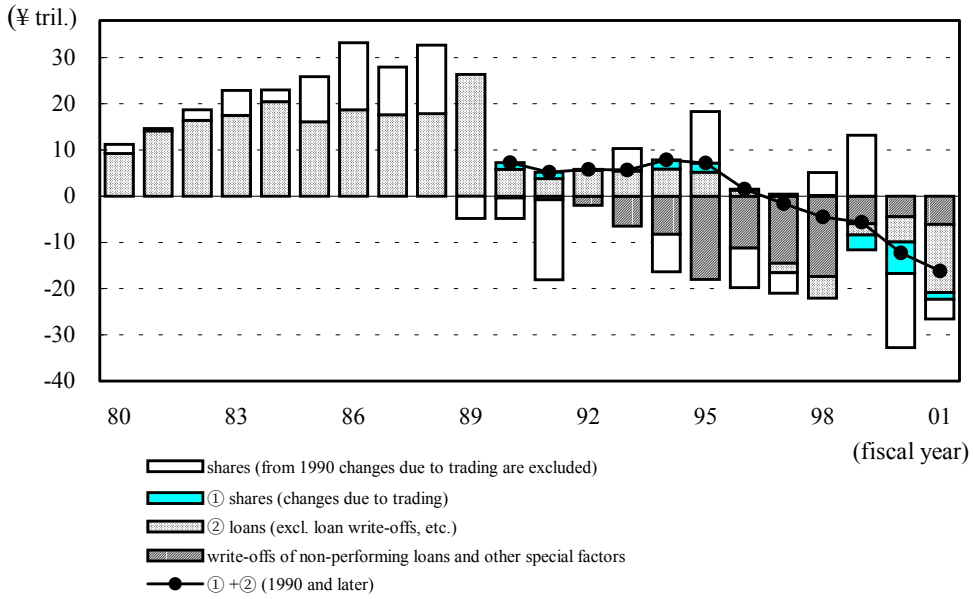


Figure 2-1 Changes in Total Corporate Loan Exposure and the Market Price of Share Holdings

Notes:
1. Only the shares of listed companies are targeted.
2. Total loan exposure is based on bank account book value before deduction of individual credit loss provisions.
3. Credited loan write-offs and the value of share trading are estimated using "Flow of Funds Accounts Statistics" of the Bank of Japan Research and Statistics Bureau.
4. The calendar year is used for 2001.

Source: Bank of Japan Research and Statistics Bureau "Financial and Economic Statistics Monthly", National Conference of Stock Exchanges "Share Ownership Survey"

ings for the purpose of offsetting the losses from writing off non-performing loans, thus rapidly reducing the unrealized profit on shares. Consequently, their risk absorbers weakened and their loan outstandings declined gradually in the 1990s. The trading had been carried out primarily by "cross-trading", in which share holdings are bought back immediately after selling them at almost the same prices. The effect of a decrease in share value coupled with an increase in its book value increases the risk of asset value volatility due to the share holdings. The act of selling them off to avert that risk first became conspicuous in FY1999. Meanwhile, total loan exposure since the financial crisis in FY1997 until recently has been declining based on pure trading, which excludes loan write-offs and other special factors. Active asset management, excluding the changes by share value volatility or the write-off of non-performing loans, has decreased these assets in amount since 1997.

In Figure 2-2, the changes of Figure 2-1 are decomposed into total loan exposure and the market price of share holdings by industry. As the total loan exposure gradually decreased overall in the 1990s, it is evident that the main players in these changes were the service, real estate, construction, wholesale & retail, restaurant and other non-manufacturing industries. On the other hand, shares underwent a broad repeated decline due primarily to the volatility of shares of manufacturing industries, which account for 60% of

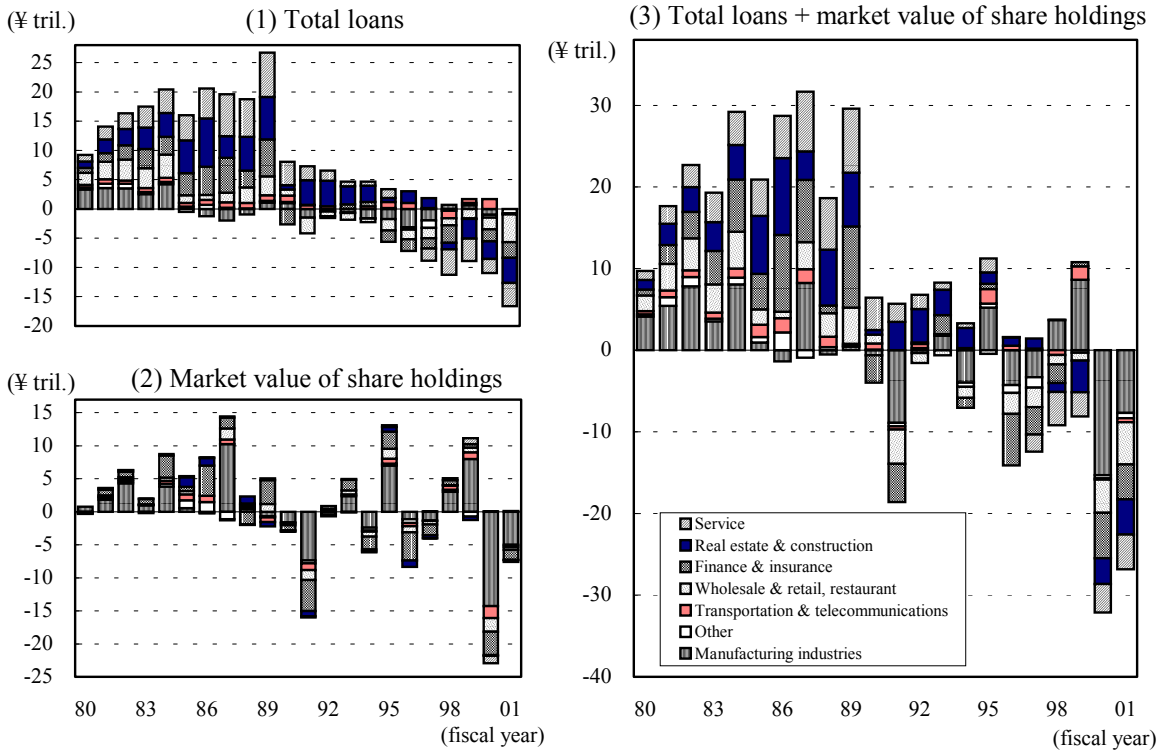


Figure 2-2 Changes in Total Loan Exposure by Industry and Market Value of Share Holdings

Notes:
1. Only the shares for listed companies are targeted. It is assumed that there is no change in the composition of share holdings by industry during the year.
2. Loan outstanding to each industry is based on bank account book value before deduction of individual credit loss provisions.
3. Credited loan write-offs and value of share trading are estimated using "Flow of Funds Accounts" of the Bank of Japan Research and Statistics Bureau.
4. The calendar year is used for 2001.

Source: Bank of Japan Research and Statistics Bureau "Financial and Economic Statistics Monthly", National Conference of Stock Exchanges "Share Ownership Survey"

holdings. Theoretically, risk could have been reduced by substituting assets through market sales of listed shares. However, the market had little capacity to absorb large-scale inflows of shares, and perhaps, reflecting the traditional structure of cross-holdings, Japanese banks continued to assume high risk by maintaining their holdings.

As a result, both manufacturing and non-manufacturing industries contributed to the volatility in asset value of Japanese banks in the 1990s. In other words, manufacturing industries mainly accounted for volatility in share holdings, while non-manufacturing industries did so in loans. Consequently, the credit exposure on the assets of Japanese banks has decreased greatly in both the manufacturing and non-manufacturing industries through the decline in market value of share holdings and total loan exposure. Because share holdings with excessive price volatility constitute a serious business risk, reducing the magnitude of such holdings is a matter of urgency; however, from the standpoint of absorbing the risk in portfolios, bias in industry risk might be introduced by greatly reducing only manufacturing industries that are strongly inclined toward shares.[14] Thus future portfolio management of banks has to consider seriously to assess whether or not to actively take credit risk in specific industries.

Figure 2-3 shows the vigor of inter-industry credits shifts $\hat{\sigma}_t$, calculated in the same manner as in the case of corporate statistics, using the changes in total loan exposure and share holdings in the banking sector. While the calculation using corporate statistics consists of quarterly data for 35 industries, this is a somewhat rougher calculation using annual data for 23 industries. However, it resembles the configuration of the graph for the period from the 1980s through the 1990s. In the most recent FY 2000, however, it is worth noting that the value of $\hat{\sigma}_t$, inter-industry credit shifts, increased at the same time as a sharp decrease in the combined total of total loan exposure and share holdings. This can be seen as a sign of evolving adjustments in the industrial structure in the form of a significant reduction in funding to specific industries in banking sector

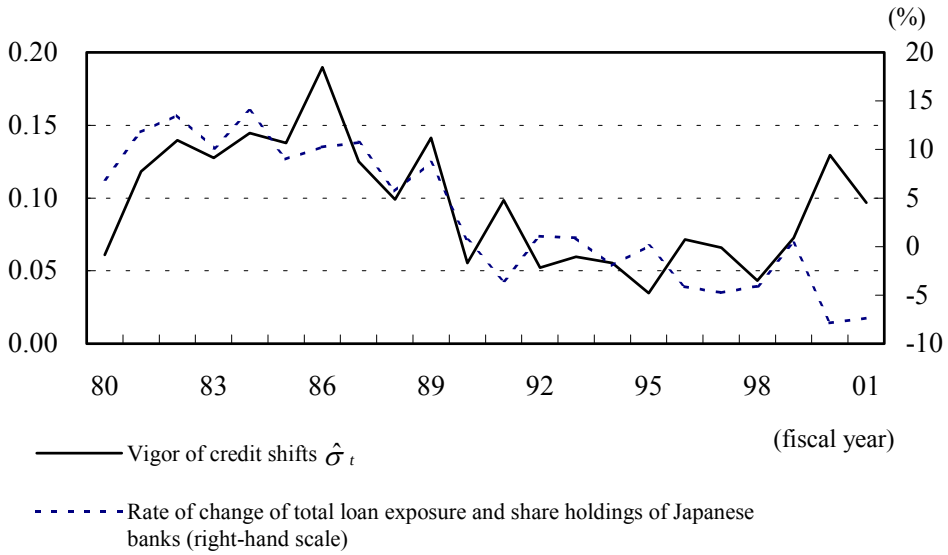


Figure 2-3 Changes in Total Loan Exposure and Share Holdings of Japanese Banks

Note: Estimates of 14 manufacturing industries and 9 non-manufacturing industries in year units using the data of Figure 2-2. The calendar year is used for 2001.

[14] As indicated by Dewatripont and Tirole (1994), since a new advance into an industry with little prior involvement may be considered a new business risk, in some cases, depending on the bank, the diversification of industry risk may not necessarily lead to a decline in business risk.

assets. Behind this has been a change in the stance of the banking sector, exemplified by an increase in the legal liquidation of companies and the promotion of write-offs of credited loans as the economy briefly recovered from FY1999 through FY2000. There were also considerable differences in valuation by industry in the stock market at this time.

2. Defaulting Firms and Main Banks

The analysis so far has looked at the decline in the function of inter-industry credit shifts centered on the banking sector in the 1990s. This section discusses the causes of that decline. One characteristic of Japanese corporate finance, namely the intimate relationship between firms and specific banks (the so-called "main bank" relationship), partly explains why funds have been retained by firms with little potential to grow.

Here, cases in which firms depend on financial support from business banks and ultimately fail through legal liquidation are defined as "default". The amounts of borrowings from the main banks of listed companies that fell into default since the 1990s were surveyed, total short-term and long-term borrowings were combined to give the "total borrowings", and the bank that provided the highest amount of this figure was considered to be the main bank. The survey covered 69 non-financial listed firms having a borrowing history of over five years reckoning from the accounting year prior to the year of default that could be traced retroactively to specific financial institutions. Figure 2-4 divides those firms into groups by year of default and indicates transitions in the main bank borrowing ratio of individual firms using arithmetic mean. Total borrowing is based on detailed borrowing statements for each financial institution that are contained in the Corporate Financial Databank of the Development Bank of Japan.[15]

As indicated in Figure 2-4, the graph shows a generally constant expansion each year. In other words, the main bank borrowing rate increased as the default approached. For example, the main bank borrowing ratio of the seven companies that failed in FY2001 was 41% at the end of the accounting year immediately prior to default, compared to 22% five years earlier. Banks other than the main bank were averse to financing for the purposes of corporate bond redemption or refinancing of borrowings, and the main banks were eventually compelled to respond to cash flow needs. Therefore, the burden for funding those firms frequently became concentrated in specific banks. In addition, seen from the perspective of the bank, not only do operating funds become shackled, but considerable manpower must be allocated to the management of loan recipients. As a result, as Japanese banks were faced with the need to streamline their operations, they could allocate only limited management resources to the active evaluation of firms with latent growth potential and provide them with funds.

The graph on the right in Figure 2-4 is a regrouping by fiscal year of the groups that defaulted since FY1998. The main bank borrowing ratio in FY1996 - FY1997 rose rapidly from 30% to 42% for firms defaulting in FY1998, 15% to 28% for those in FY1999, 26% to 31% for those in FY2000, and 22% to 32% for those in FY2001. All of these were in a range of about 10% except for those in FY2000, as shown by the steep inclination in the graph.[16] As the screening of borrowers intensified following the financial crisis and commencement of self-assessment toward the end of FY1997, as well as the introduction of early corrective measures in FY1998, the burden on specific banks is likely to have increased rapidly at this time. Subsequently, although banks pursued turnaround of the defaulting firms by searching for sponsors, this increased the number of firms that, unable to endure the burden, were compelled to choose legal liquidation.[17]

[15] Not all firms that had loan exposure disclosed their loan statements in their account settlements of FY1999. In such cases, only major lenders that could be ascertained were targeted using Securities Reports. In addition, firms that received financial support prior to bankruptcy were considered to have defaulted in the year in which they received support.

[16] Refer to the Notes, Figure 2-4, for statistical implications.

[17] This study deals with the conditions of increased inflexibility in the provision of Japanese banks' funding and management resources to bankrupt firms as a result of the main bank relationship, focusing on defaulting firms. In contrast, Kobayashi, Saida and Sekine (2002) recognized a significant positive correlation in regard to the so-called

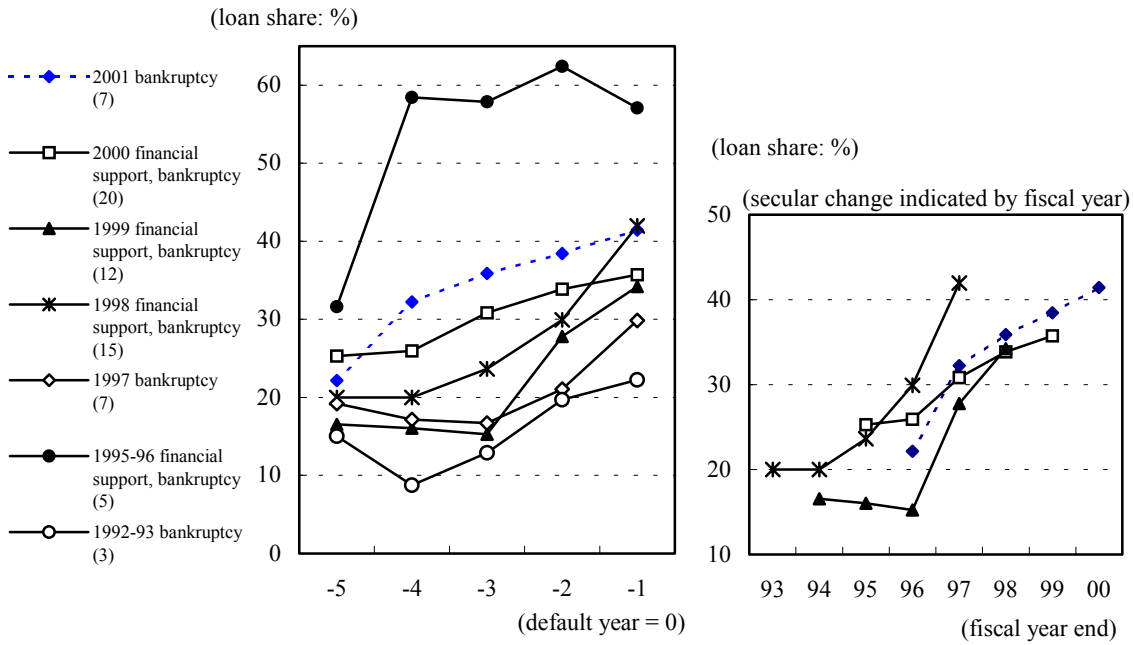


Figure 2-4 Changes in Main Bank Borrowing Share

Notes:
1. The targets were the 69 firms among listed firms (excluding financial) that underwent legal liquidation or posted liability exemption profit in the 1990s, and that had total borrowings that can be ascertained continuously by financial institution over a 5-year period reckoning retroactively from the end of the accounting year immediately prior to that point in time. The figures in parentheses in the legend represent the number of firms in each year.
2. The main bank is considered to be the bank with the maximum share of total borrowings as of the end of the accounting term immediately prior to default.
3. The constant term, dummy and T coefficient were each at a significant level (1%) when the following least squares method estimate was implemented for defaulting firms since FY1997. This confirms that dependence on the main bank increased as the default approached, particularly accelerating in FY1997.

$$\Delta S_t = 6.47 + 6.66D - 1.64T + \varepsilon_t$$
(3.70) (4.01) (2.66)

T = -4, -3, -2, -1 Adj. $R^2 = 0.09$, D.W. = 2.03 n = 61 Figures in parentheses are t values.

ΔSt = changes in the main bank borrowing share (%), D: dummy (= 1: FY1997, = 0: otherwise)

Source: Development Bank of Japan "Corporate Financial Databank", Securities Reports

3. The Disposition of Non-performing Loans

Based on Table 2-2, the changes in credited loans since FY1999 (using the conditions of self-assessment) indicate that more than 90% of the decrease in total exposure of about ¥80 trillion that occurred over a three-year period resulted in a decrease in unclassified, or good, credits. Behind this was a considerable deterioration in the situation of borrowers in debtor categories (due to the weakening business performance of borrowers, increased severity of banks' self-assessment) or the transformation to non-performing loans, as well as the decrease of loan outstanding to excellent firms.

The results of sample surveys of major banks in Table 2-2 have been released by the Financial Services Agency, underscoring the deteriorating evaluation of loans. According to this data, 7.1% of the shifts in debtor categories during FY2000 were from "normal" to "caution required", while 12.8% shifted from "caution required" (accounting for less than one-fourth of the balance) to "normal". Virtually none shifted

"forbearance lending" between the liability ratio and loans centered in non-manufacturing industries by estimating the loan function for firms that were continuously listed from FY1993 to FY1999. The present study complements that of Kobayashi, et al. with respect to the increasing inflexibility of Japanese banks.

Table 2-2 Conditions of Loan Self Assessments

(unit: ¥ tril.)

	End FY00 balance	Decrease against end FY97	Contribution rate
Total	536	▲80	100.0
Unclassified	471	▲74	92.5
Classified loans	66	▲6	7.5
(class II)	(66)	▲2	3.0
(class III)	(3)	▲4	4.4
(class IV)	(0)	▲0	0.2

Note: The figures are for all banks. Effects of financial institutions that have failed since FY1998 are not adjusted.
Source: FSA "Conditions of Risk-monitored Loans"

Table 2-3 Transitions in Debtor Category

(%)

	Normal	Caution required	Potential bankruptcy and lower
Normal	92.9	6.5	0.6
Caution required	12.8	78.8	8.4
Potential bankruptcy and lower	1.0	6.3	93.7

Source: FSA (2001) "Issues in the Financial Capital Market and Measures Addressing Them "

to "normal" from "potentially bankrupt" or lower categories, which accounted for an even smaller portion of the balance. In addition, with regard to conditions since FY1998, disposal loss reached a cumulative total of ¥22 trillion from mainly direct write-offs, with a net increase of ¥3.7 trillion in total risk-monitored loans based on the disclosure standards of the Japanese Bankers Association. If the recovery rate of direct write-offs were assumed to be 20% of the book value at the time[18], the amount disposed—even taking into account the reversal of credit loss provisions—would be estimated to be ¥23.6 trillion, and the amount of non-performing loans generated in terms of total risk-monitored loans to be about ¥27 trillion. Considering these conditions over a three-year period, in practice bankers must spend much time for the control of credited loans that become classified loans and for self-assessment tasks in line with changing standards and more rigorous management.

4. The New Basel Capital Accord

The new Basel Capital Accord[19] requires banks that are expanding globally to maintain a certain minimum level of capital. This standard for capital requirements functions as an impartial condition in international competition between banks and encourages the soundness and security of the international banking system.

To give a simple example, as indicated in Figure 2-5, while accumulating provisions for the average value of anticipated loss generated by irrecoverable loan holdings (that is, an amount equivalent to expected losses), banks are obligated to maintain capital to cover the maximum expected loss in the event of unforeseen circumstances. The expected loss at that time is calculated by multiplying the expected value of the default probability by a fixed loss rate given default based on past recovery performance. In addition, the maximum loss in many cases is the maximum value of losses generated at a certain or higher probability of less than 1% based on VaR (value at risk) or other methodology.

With regard to actual standards for capital ratio in Japan, Japanese banks expanding globally were obligated to maintain a capital ratio corresponding to a minimum of 8% of risk assets beginning with the March 1993 term settlement based on an international agreement in 1988. This prompted Japanese banks, which had consistently increased loans throughout the 1970s and 80s, to issue subordinated bonds.[20] Later, a change involving incorporation of the exchange and interest fluctuation of trading account asset holdings as market risk was added beginning with the March 1998 term settlement. Based on the current standards, however, the capital ratio of major banks at the end of March 2002 is an-

[18] According to the Cabinet Office (2001), the loan principal purchase price of the Cooperative Credit Purchasing Company averaged about 22% during the period of April 1997 to March 2001.

[19] Convened at the Bank of International Settlements in Basel, Switzerland, by the G-10 countries, central bank of Luxembourg, and regulatory authority representatives.

[20] Ito and Sasaki (1998) explained that, as the result of the introduction of the capital ratio standard in March 1993, the capital ratio of city banks and long-term credit banks after deduction of subordinated bonds had a significant impact on lending behavior.

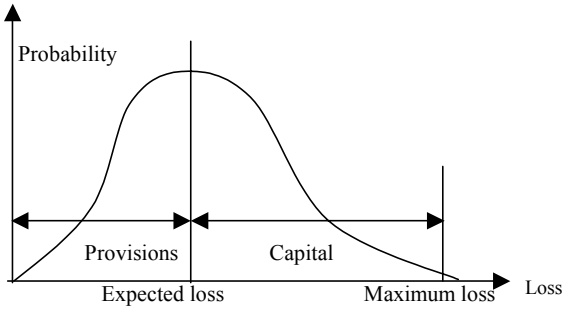


Figure 2-5 Bank Capital and Credit Risk Concepts

Expected loss = default probability × (1 – recovery rate)

* Default probability: calculated according to an internal rating model

* Recovery rate: a constant rate based on past loan recovery performance

ticipated to be just over 10% on average[21] with about 2.4% covered by public funds.

Currently, the Basel Committee on Banking Supervision has announced proposals for new standards and the views of the various countries are now being coordinated. Taking into account the views of each country regarding the second Consultative Document in January 2001, the direction for revision was clarified in November 2001 and there are prospects for the announcement of the third Consultative Document before long. Implementation as initially planned was postponed twice and is now set for the end of 2006. While establishing internal bank supervisory systems and reinforcing disclosure of risk and capital composition as additional pillars, the proposals also require more sophisticated risk management when calculating the minimum capital ratio.

In the risk management based on the newly proposed standard, operational risk[22] (such as loss due to computer failure, misconduct, and so forth) is added and credit risk is more elaborate. As indicated in Figure 2-6, operational risk is considered to be equivalent to 12% (after the November revision) of the sum total of credit risk and market risk. Meanwhile, the more elaborate credit risk is as indicated below.

First of all, the risk weight of loans to the non-financial private sector, which had been a uniform 100%, will change under the new standard in accordance with the default probability and the loss rate given default of individual firms. In addition, as indicated in Table 2-4, in order to encourage the development of more substantial risk management systems at each bank, it would be possible, when calculating risk weight, to reflect risk weight on the default probability only or, aside from default probability, on the loss rate given default in accordance with the level of the internal ratings approach. Figure 2-7 plots loans to companies, housing loans to individuals, and other loans to individuals, thus illustrating the relationship of risk weight set by the authorities and default probability when the basic approach is adopted. The slope of the November revision is somewhat gentler than that of the first Consultative Document. However, when the bankruptcy rate for corporate loans exceeds 1%, for example, a risk weight of 100% or more is required.

Table 2-4 Risk Asset Calculation Method of the Basel Consultative Document

		Default probability	Loss given default
Standardized approach		Set by the authorities	Set by the authorities
Internal ratings-based approach	Basic method	Bank estimate	Bank estimate
	Advanced method		

Source: Basel Committee on Banking Supervision (2001a)

[21] Based on Financial Services Agency(2002) "FY2001 Settlements of Major Banks"

[22] According to the Basel Committee on Banking Supervision (2001a), operational risk is defined as "risk relating to direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events."

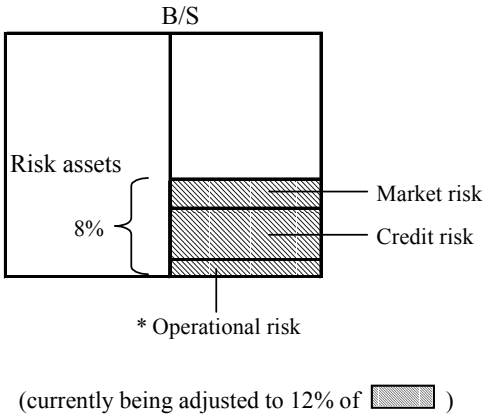


Figure 2-6 Operational Risk

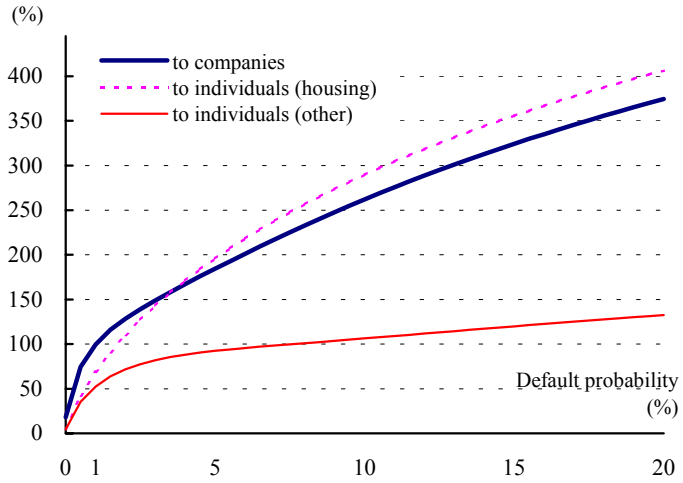


Figure 2-7 Credited Loan Risk-Weight by the Basel Committee on Banking Supervision

Source: Basel Committee on Banking Supervision (2001b)

Furthermore, the correlation coefficient of the default probability of multiple borrowers is set at 0.1 – 0.2 for loans to companies and 0.04 – 0.15 for loans to individuals. However, it is set so that the correlation coefficient decreases as the probability of default of individual loans increases. In other words, the probability of simultaneous default is limited as long as the company, for example, is not a group company. Thus, as indicated in Figure 2-8, it is possible to reduce the maximum loss of credited loans by broadening borrower diversification. Rather than concentrating loans on large borrowers, it is more advantageous for banks to have a large number of smaller loans. Furthermore, promoting analysis of the correlation coefficient would stimulate the formation of a balanced loan portfolio that incorporates the effects of diversified borrower types, regions, and so forth.

Although the profit margin of large corporations is generally small, they do have the potential for earning fee income from incidental op-

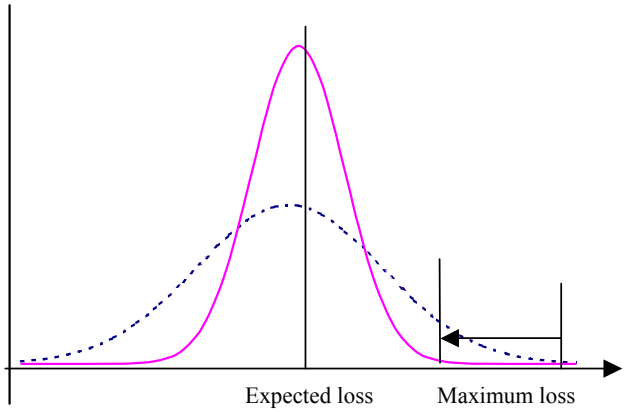


Figure 2-8 Conceptual Diagram of Diversified Investment

erations and so forth, and credit risk is low. On the other hand, although the credit risk for loans to small- and medium-size firms and to individuals is high, a somewhat higher profit margin as well as loan diversification can be anticipated. In order to be able to meet international standards in the future, Japanese banks will be expected to a) assess the credit risk of borrowers and the revenues that can be obtained from them, and b) develop an optimal loan portfolio as they upgrade the risk management of credited loans.

Though the risk weight of share holdings is set at a maximum 1,250%, the existing long-term holdings evident in Japan and Germany remain at the level of 100% as before.

5. Prospects

Given the fact that Japanese banks have share holdings with substantial price volatility, and that credited loans account for the majority of assets as indicated above, there is a considerably high risk of price fluctuations in asset holdings. This includes an increase in the burden placed on enterprises expected to serve as main banks when business conditions deteriorate. Meanwhile, for banks to stabilize their management and meet international standards in the future, they are expected to shift to a level at which portfolio risk can be offset by the earning capacity of core business operations. Consequently, besides upgrading earning capacity, banks will need to reexamine portfolios as indicated below.

The first point is to reduce risk assets by selling share holdings, writing off non- performing loans, and increasing the liquidity of credited loans or through credit swaps in order to alleviate existing asset risk. Japan needs to develop the market basis for this portfolio rebalancing by Japanese banks. Expanding the liquidity of stock markets, trading non-performing loans and providing Debtor-in-Possession financing for company revitalization have already begun, and such efforts must be aggressively pursued. The important points at that time will be to enhance market reliability for the fund supplying entities that will take the place of Japanese banks and to ensure that sufficient information is provided for making investment decisions. As indicated in Table 2-5, more than one-third of the institutions inspected by the Securities and Exchange Surveillance Commission every year since FY1997 have been advised that they are subject to administrative disposition, including suspension of business operations and the suspension of the functions of employees. This is powerful evidence of the lack of trust in securities market intermediaries. Better legal compliance by secu-

Table 2-5 Supervisory System of the Securities and Exchange Surveillance Commission

Year	96	97	98	99	00	01	02
No. of inspections	86	97	78	94	97	n.a.	n.a.
No. of recommendations	11	36	34	37	33	n.a.	n.a.
Staff	207	209	224	238	250	265	364

Notes: 1. The year for inspections, etc., is from July to the end of June the following year.
2. "Staff" represents the total budgeted staff of the Securities and Exchange Surveillance Commission and Local Finance Bureau inspectors.

Source: Securities and Exchange Surveillance Commission "Annual Announcement", FSA"FY2002 Budget"

Table 2-6 Actual Performance of the Resolution and Collection Corporation in Non-performing Loan Purchase and Recovery Operations

(1) Purchases (unit: ¥100 mil.)

FY	1st half, 1999	2nd half, 1999	1st half, 2000	2nd half, 2000	1st half, 2001	2nd half, 2001
Principal of purchased loans (a)	1,384	3,126	1,505	3,717	1,035	2,267
Purchase price (b)	67	150	63	63	50	156
(b)/(a)	4.8%	4.8%	4.2%	1.7%	4.8%	6.9%

Notes: 1. Purchases from sound financial institutions.
2. The first half of FY2001 includes a portion of applications from the second half of FY2000. The second half is January-March.

(2) Recovery (unit: ¥100 mil.)

FY	98	99	00	01
Total cumulative assigned book value (a)	20,167	31,377	38,580	42,206
Cumulative recovered amount (b)	3,475	9,525	18,892	27,207
(b)/(a)	17.2%	30.4%	49.0%	64.5%

Note: Assigned loans are mainly from failed financial institutions.
Source: Resolution and Collection Corporation Website (http://www.dic.go.jp)

rities market agents and stricter market surveillance are essential. Fortunately, among the regulatory authorities, the Securities and Exchange Surveillance Commission has broadly increased staffing while developing an exclusive inspection system for foreign securities, Internet securities, and so forth in FY2002[23]. Meanwhile, in May, the Financial Services Agency concluded contracts for information exchange with the Securities and Exchange Commission and the Commodity Futures Trading Commission in the U.S. in order to monitor and detect international misconduct. The Tokyo Stock Exchange has also fortified its system for legal compliance and, beginning in FY2002, began releasing the names of violators of market trading laws and ordinances, all of which have resulted in an improvement in conditions.

In addition, there is also the issue of disclosure of information. Under current conditions, and reflecting strong interest in the creditworthiness of individual banks, discussions have focused on the reliability of both the self-assessment of each bank and the results of the Financial Services Agency's inspections. The

[23] The net increase in staff members budgeted for FY2002 is 130 for the Financial Services Agency overall, 60 of whom are for deployment at the Securities and Exchange Surveillance Commission. In addition, there was an increase of 39 staff members at the Ministry of Finance, and a total increase of 89 brings the total to 364 staff members in FY2002. Although there are differences in the scale of the securities markets, fields of responsibility of institutions and so forth, the SEC in the U.S., according to its FY2001 annual report, had a staff of 3,285 as of 2001.

key points there are disclosure of information on non-performing loans and their prospects. Nevertheless, this alone will not produce the information required to set prices when trading corporate loans. Post-default information is also important when actually assessing and dealing in credited loans and collateral value. In other words, much more information on the conditions of collection of defaulted loans as well as examples of the disposal price of secured assets is required. Although the Resolution and Collection Corporation discloses average values over a given period as indicated in Table 2-6, there is not enough information for statistical purposes. Moreover, among advanced approaches in the use of internal ratings proposed by the new Basel Consultative Document, individual banks would be capable of estimating loss given default; however, such estimates require information for at least one business cycle as standard. Therefore, banks and regulatory authorities need to accumulate a considerable volume of information.

At times, restructuring of borrowers requires restructuring of business operations, but in order to select and concentrate on profit-making operations, specialized internal information is necessary. This is an area of so-called "asymmetrical information", which is beyond the ability of general outside investors to judge. Thus, there is a need for such investors who would consider participating in management while making authoritative judgments that reflect their familiarity with the relevant business operations.

Secondly, in regard to new loans, Japanese banks cannot easily take the risk of becoming involved in immature industries. In addition, when building a balanced loan portfolio, considerable risk tolerance is required when taking overweight positions in specific industries. Considering their small appetite for risk, Japanese banks are unlikely to become actively involved in financing growth industries.

Like corporate restructuring, the allocation of funds to potential growth industries also requires in-depth technical judgments of business operations by professional investors. In addition, since the two fields have the shared characteristic of producing high earnings when successful but also having high risk, risk money should be supplied through the market. However, risk money markets remain under-developed in Japan. Investment markets that can supply investment funds from household finances through professional investors need to be developed. However, in view of the weakness of the financial sector, a mechanism for attracting existing funds from overseas, combined with government engagement, should be implemented as the basis for building such markets.

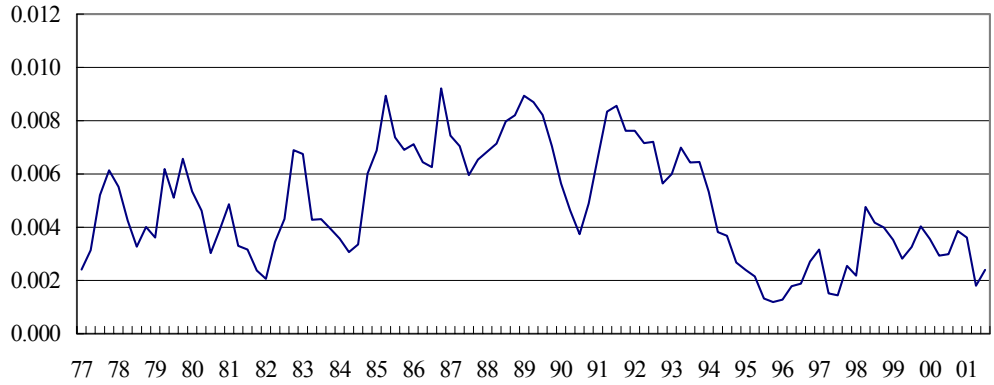
What other issues remain? First, when estimating inter-industry credit shifts in this study, firms were classified by industry, and only those with capital of ¥1.0 billion or more were considered. In contrast, since in recent years differences in the proficiency of business management among companies have become significant even within the same industry, data by company has become even more important.

In addition, in order to avoid bias in the samples in the Quarterly Report of Corporate Statistics, firms with capital of less than ¥1.0 billion, which were excluded from this analysis, may also have an important influence.[24]

Next, activation of inter-industry credit shifts appears to be related to economic growth, but the mechanism by which such shifts affect the real economy remains unclear. When estimating growth produced by external funds, it has been considered that this growth consists primarily of physical investment and so analyses have focused on physical investment and financial intermediation. Nevertheless, since some burgeoning firms have few facilities in comparison to their size, the demand for funds that will support the growth of the Japanese economy in the 21st century will require closer scrutiny.

[24] With regard to this point, although new business starts are important among small- and medium-sized firms, according to Appended Table 2 (1), the rate of new business starts in Japan in the 1990s coincided with trends and changes in the rate of business closures. In addition, the comparison of Japan and the U.S. in Appended Table 2 (2) shows that both the rate of business starts and the rate of closures are higher in the U.S. and that a linkage can be observed between the two rates. Many policies have been devised thus far with the aim of protecting businesspeople; however, the development of firms that can drive economic growth in the future should also be encouraged.

Appended Table 1 Degree of Vigor of Inter-industry Credit Shifts (according to share changes)



Note: With regard to the estimation of $\hat{\sigma}_t$ of Figure 1-6, changes in the share of fund procurement by industry were used instead of the rate of change in fund procurement.

$$\hat{\sigma}_t = \left\{ \sum_{i=1}^{35} \frac{m_{it}}{M_t} \left[\Delta \left(\frac{m_{it}}{M_t} \right) \right]^2 \right\}^{\frac{1}{2}}$$

Appended Table 2 (1) Transitions in the Rate of New Business Starts and Business Closures in Japan

(unit: annual rate %)

	1989-1991	1991-1994	1994-1996	1996-1999
New business starts	4.1	4.6	3.7	4.1
Business closures	4.7	4.7	3.8	5.9

Notes: 1 Based on the number of private-sector businesses excluding agriculture, aquaculture, forestry and fisheries
2. Since Business Office Statistical Surveys are generally conducted by the Ministry of Public Management, Home Affairs, Posts and Telecommunications every three years, there are statistical limits in using the simple new business start and business closure rates. For example, it is not possible to ascertain the number of new business starts and business closures between surveys.

Source: FY1996, FY1999: Ministry of Public Management, Home Affairs, Posts and Telecommunications "Business Office and Company Statistical Survey"
FY1994, FY1989: Ministry of Public Management, Home Affairs, Posts and Telecommunications "Business Office Registry Development Survey"
FY1991: Ministry of Public Management, Home Affairs, Posts and Telecommunications "Business Office Statistical Survey"

Appended Table 2 (2) Comparison of New Business Starts and Business Closures in Japan and the U.S. (2000)

(unit: 1,000 companies, annual rate %)

	Japan	U.S.
No. of business offices	2,021	5,730
Business starts (rate)	99 (5.0)	605 (10.8)
Business closures (rate)	80 (4.1)	561 (10.0)

Note: The number of business offices and corporations that hire employees is used as the standard for both Japan and the U.S.
Japan: New business starts: Number of newly established business offices participating in the employment insurance system; business closures: Number of businesses participating in the employment insurance system that closed
U.S.: Number of companies hiring employees. These figures are estimates of the Small Business Administration.

Source: Ministry of Health, Labor and Welfare "Employment Insurance Business Annual Report", SBA "Small Business Economic Indicators"

Appended Table 3 Major Financial Administration Items

		Financial institution failures, restructuring	Disclosure and accounting standards, Basel capital standard
1993	January:	Establishment, Cooperative Credit Purchasing Company	Introduction of self-assessment ratio rules (March 1993 term settlement) Basel Committee on Banking Supervision standard (1988): response to credit risk Release of non-performing loans based on the Japanese Bankers Association's unified disclosure standards (Sept. 1995 term settlement)
1996	June:	Decision on time limit measure until 3/01 Full protection of deposits (amended Deposit Insurance Law) Injection of capital into financial institutions (Financial Function Stabilization Law) credit associations and credit cooperatives at the end of March 2002	
	July:	Establishment, Jusen Resolution Corporation	
	August:	Reorganization of the Tokyo Cooperative Bank and the launch of the Resolution and Collection Bank	
	November:	Hanwa Bank	
1997	April:	Nissan Life Insurance	March: Self-assessment guidelines - Ministry of Finance inspection No. 104
	October:	Kyoto Kyoei Bank (business operations transferred to Kofuku Bank) Merger of Fukutoku Bank and Naniwa Bank (Namihaya Bank)	April: Institute of Certified Public Accountants practice guidelines – Special Bank Audit Committee Report No. 4 Accounting procedures and auditing guidelines for writing off non-performing loans and provisions
	November:	Sanyo Securities Hokkaido Takushoku Bank Yamaichi Securities Tokuyo City Bank	
1998	January:	Release of self-assessment trial results	
	March:	Injection of public funds (first time), 21 banks, total: ¥1,815.6 billion	Commencement of self-assessment (March 1998 term settlement)
	April:	Introduction of early corrective measures	Amendment of capital ratio rules (March 1998 term settlement)
	September:	SPC Law	Basel Committee on Banking Supervision standard (1996): Response to market risk
	October:	Decision of financial early corrective measures Principle for the resolution of failed financial institutions, bridge bank (Early Financial Correction Law) Resolution and Collection Corporation (merger of Jusen Resolution Corporation and Resolution and Collection Bank) Financial Reconstruction Commission (launched in December)	
	October:	Long-Term Credit Bank of Japan	
	December:	Nippon Credit Bank	
1999	January	(announcement of merger of Chuo Trust & Banking and Mitsui Trust & Banking)	January: Approach to write-offs and provisions when increasing capital - Financial Reconstruction Commission announcement
	February:	Launch of Bank of Japan's zero interest policy (Temporalily cancelled 8/00 – 2/01)	
	March:	Injection of public funds (second time), 31 banks, total ¥7,049.3 billion (until 3/02) Release of disclosed loans under the Financial Reconstruction Law (March 1999 term settlement)	Consolidated-based disclosures (March 1999 term settlement)
	April:	Kokumin Bank	April: Institute of Certified Public Accountants, amendment of practice guidelines
	May:	Kofuku Bank	June: Amendment of self-assessment guidelines – Financial Reconstruction Commission notification Assurance of consistency between tax law and self-assessment category (March 2000 term settlement)
	June:	Toho Life Insurance, Tokyo Sowa	
	July:	Introduction of financial inspection manual	
	August:	Namihaya Bank (announcement of Mizuho three-bank business integration, corporation established 9/00)	
	October:	Niigata Chuo Bank (announcement of merger of Mitsui Bank and Sumitomo Bank, merger 4/01)	
	December:	Agreement by political parties in office to extend the lifting of the payoff ban until April, 2002	
2000			Posting of deferred tax assets concomitant with tax effect accounting (March 2000 term settlement)
	March	(announcement of business merger of UFJ, merger 1/02)	
	April	(announcement of business merger of Tokyo Mitsubishi and Mitsubishi Trust, holding company established 4/01)	
	May:	Dai-ichi Fire & Marine Insurance, Daihyaku Mutual Life Insurance	
	July:	Launch of the Financial Services Agency	
	August:	Taisho Life Insurance	
	October:	Chiyoda Life Insurance, Kyoei Life Insurance	
2001			January: Submission of a bill for the amendment capital ratio regulations
	March:	Start of quantitative easing by the Bank of Japan	Newly proposed Basel Capital Accord standard: more elaborate credit risk and introduction of operational risk
	September:	Announcement of private liquidation guidelines	
	September	(announcement of convergence of Asahi Bank with the Daiwa Bank group)	September: Application of current value accounting, disposition of share holding losses (September 2001 term settlement)
	November:	Start of special inspections by the Financial Services Agency Decision to limit equity holdings of banks, etc. (starting 2004)	October: Reversal of reserves approved (Commercial Code amendment)
			November: Release of the new Basel Capital Accord revision proposal
	November:	Taisei Fire & Marine Insurance	
	December:	Ishikawa Bank	
2002	January:	Establishment, share-purchasing organization (until 9/06)	
	March:	Chubu Bank	
	March:	Establishment, the Bridge Bank of Japan, Limited	
until 2003		Concentrated coordination period for the resolution of non-performing loans by the Financial Services Agency	2006 Anticipated introduction

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