Discussion Paper No. 656

THE DEMISE OF BANK-CENTERED ECONOMY AND INCREASING ROLES OF CREDIT RATING IN JAPAN

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March 2006

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[Abstract]

After the burst of the bubble economy, Japanese economy has been changed drastically. Traditionally, Japanese economy was characterized as a bank-centered economy, but the banking system did not function well in the 1990's. Responding to banking problems, the Japanese government initiated the Financial Big Bang in 1996 to strength the capability of capital markets. Also, accounting and disclosure rules have been revised to make more credible and wider information available to market participants. If other things be constant, more extensive and timely disclosure should result in more accurate evaluation of firm's risks. However, there is a lack of research that investigates how effective current disclosure is in evaluating corporate risks. This lack of research is mainly because there are not appropriate data sets and methodology to be used for empirical tests. Fortunately, Morgan (2002) proposed a very useful method. That is, he used the disagreement between credit rating companies (i.e., Moody's and Standard and Poor's) over new issued bonds to measure the difficulty in evaluating firms' risks. In this paper, we follow Morgan (2002) and investigate whether credit rating companies likely agreed on the evaluation on Japanese firms' risks after the financial and accounting Big Bang. If there are still large disagreements among credit rating companies, this

fact suggests that the current disclosure is not enough for outsiders to evaluate firms, or that there is an inherent limitation of disclosure usage. Also, we are interested in what sectors credit rating companies more often disagree on. Contrary to Morgan (2002), which pointed out that financial industries, such as banks and insurance companies, are difficult to evaluate, we failed to find that disagreements among credit rating companies over banks and insurance companies are larger than disagreements over other industries. However, consistent with Morgan (2002), we found that public utilities industry is easy to evaluate.

This paper is organized as follows. In Section 2, we discuss the current Japanese economic situation and explain the accounting and disclosure reform. In Section 3, we explain data and methodology that are used in this paper. In Section 4, empirical results are provided. Section 5 concludes this paper.

JEL Classification Code: G10, G21
Key words: Credit ratings; Japanese finance; Credit raters; Bank.

The Demise of Bank-centered Economy and Increasing Roles of Credit Ratings in Japan

1. Introduction

After the burst of the bubble economy, Japanese economy has been changed drastically. Traditionally, Japanese economy was characterized as a bank-centered economy, and capital markets played only a marginal role. Unfortunately, many banks that took too much risk exposures in the late 1980's faced financial difficulties in the 1990's, and some banks actually went into bankruptcy. Failures of Hokkaido Takushoku Bank in 1997 and Long-Term Credit Bank of Japan in 1998 were splendid examples. As these banks consisted of the core of Japanese financial society, many firms that heavily financially depended on these failed banks experienced serious financial problems (Yamori and Murakami, 1999). Furthermore, even banks that survived were seriously lack of capital and reluctant to extend loans to small and medium size enterprises.

As the banking system did not function well, the government concluded that it was necessary to strength the market-based finance, and started to deregulate securities markets and modernize banking regulations in 1996. This extensive reform initiative is called "Financial Big Bang." Also, accounting and disclosure rules have been revised to make more credible and wider information available to market participants because appropriate disclosure is essential for the market-based finance. Now, Japanese observers agree that the disclosure standard of Japanese firms is far better than before.

If other things be constant, more extensive and timely disclosure should result in more accurate evaluation of firm's risks. However, it may be still very difficult to monitor firms' risks from outside due to the following reasons. First, disclosure regulation may be useless if it does not require firms to disclose really important information. Second, nowadays firms operate more complex businesses whose risks are hard to evaluate. Typical examples are found in banking businesses. Traditionally, banks operated very simple business; raising funds as deposits and lending them to corporations. Now, banks operate internationally and engage in various businesses, such as investment banking and derivative transactions. Therefore, the issue of whether risk evaluation is easier than before is an empirical research question.

Although investigating how effective current disclosure is in evaluating corporate risks is relevant to current regulation, there are only a few papers investigating this issue. This lack of research is mainly because there are not appropriate data sets and methodology to be used for empirical tests. Fortunately, Morgan (2002) proposed a very useful method. That is, he used the

disagreement between credit rating companies (i.e., Moody's and Standard and Poor's) over new issued bonds to measure the difficulty in evaluating firms' risks. In this paper, we follow Morgan (2002) and investigate whether credit rating firms agree on the evaluation on Japanese firms' risks more often than before. If there are still large disagreements among credit rating companies, this suggests that the current disclosure is not enough for outsiders to evaluate firms' creditworthiness. Also, we are interested in what sectors credit ratings companies more often disagree on in terms of risk evaluation. Morgan (2002) pointed out, financial industries, such as banks and insurance companies, are difficult to evaluate. We investigate whether his findings are confirmed by using Japanese data.

This paper is organized as follows. In Section 2, we discuss the current Japanese economic situation and explain why Japan aimed to shift from bank-based finance to market-based finance. Also, we briefly explain the accounting and disclosure reform. In Section 3, we explain data and methodology that are used in this paper. In Section 4, empirical results are provided. Section 5 concludes this paper.

2. The Changing Japanese Economy

2.1 The Lost Decade

The Japanese economy, whose nominal GDP for 2002 was 499 trillion yen, is the second largest economy in the world. Although Japan had experienced remarkable economic growth after the Second World War, Japan suffered from a stagnant economy in the 1990's. The 1990's are often called 'the Lost Decade' because of low nominal GDP growth rates, prolonged deflation, and huge declines of asset prices in that decade. The GDP growth rate was very low or even negative in the late 1990's. Average annual nominal GDP growth rates were 6.4% from 1985 to 1990, 2.2% from 1990 to 1995, 0.4% from 1995 to 2000, and -1.6% from 2000 to 2002. Low economic growth has increased unemployment rates significantly. Although Japan was known as a country with low unemployment rates (e.g. 2.1% in 1990), recent unemployment rates are above 5 percent (e.g., 5.3% in 2003).

The second feature of the stagnant economy in the 1990's is the prolonged deflation. GDP deflator has been negative since 1994. To fight against deflation, the Bank of Japan reduced interest rates to almost zero. Overnight interbank loan interest rates (i.e., call rates) have been about 0.001% since 2001. Long-term interest rates are also very low. For example, the yield of newly issued government bonds (10 years maturity) was below 1% in 2002.

The third characteristic is the sharp decline in asset prices in the 1990's, which is often called the burst of the bubble. Land prices have continued to decline since 1992. According to Officially Published Land Prices (*Chika Koji*) issued by the Ministry of Land, Infrastructure,

and Transport, the average land prices for 2002 were only 55 percent of those for 1991. Also, stock prices drastically declined in the 1990's. For example, the Nikkei 225 Average, the most popular stock price index, recorded its highest value of 38,915 at the end of 1989, while it declined to below 7,900 in April 2003.

During the Lost Decade, Japanese banks met unprecedented difficulties. Traditionally, real estates were often used as collaterals for bank loans. According to the data on bank loans by collaterals released by the Bank of Japan, Real Estate and Floating Mortgages are often used as loan collaterals. Namely, as shown in Figure 1, the ratio of loan with Real Estates and Floating Mortgages as collateral to total bank loans peaked in 1992 (i.e., 28.4%). Furthermore, in the late 1980's (i.e., the bubble period), Japanese banks were eager to provide funds to real estates companies. At that time, Japanese banks felt that they were well secured because of so-called "Land Myth," which means that land values never decline. Banks' high dependency on land values functioned very well so long as land prices continued to rise.

Owing to the deflation in the 1990's, borrowers suffered from the appreciation of real values of debts. As real estate companies had huge land in the portfolio and borrowed huge money from banks, they were vulnerable to land price declines. Unfortunately, the deflationary effect was not limited to the real estate industry. With the prolonged deflation, the number of firms that went into bankruptcy rose to an unprecedented level (e.g. the number of corporate bankruptcies was 19,164 for 2001, three times larger than that for 1990). Japanese financial institutions suffered from huge bad loan problems[1]. Figure 2 shows that bad loans remained large in spite that Japanese banks incurred over five trillion yen losses every year by writing off or selling off problematic loans. Although recently bad loans tend to decline, Japanese banks still held 36.2 trillion yen in bad loans at the end of Fiscal 2003 (i.e., March 31, 2004)[2].

The bad loan problems seriously damaged banks and other financial institutions, and some of them went into bankruptcy in the late 1990's. (See Table 1). These frequent bank failures were all the more shocking because there was no bank failure for fifty years until 1995. More seriously, even solvent banks were reluctant to extend loans to riskier borrowers, such as small size enterprises. After the failure of Hokkaido Takushoku Bank in November 1997, severe credit crunches were observed nation-widely. As shown in Figure 3, bank loans amounted to 493 trillion yen at the end of 1997. Then, bank loans have declined to 413 trillion yen at the end of 2003.

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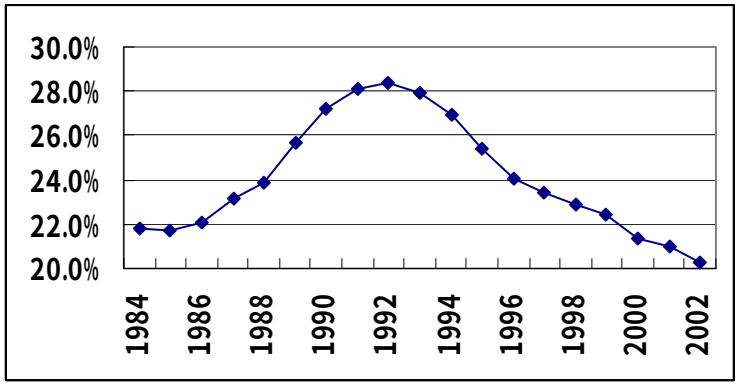
[1] When a borrower fails to repay loans, a bank forecloses collaterals and sells them. Japanese banks usually ask borrowers to pledge as collateral that is more worth than the loan amount. Unfortunately, the price of land declined very much, banks often found that collateral values were smaller than loan amounts in the late 1990's. Eventually, although bank sold the collaterals, bank could not cover the default losses.

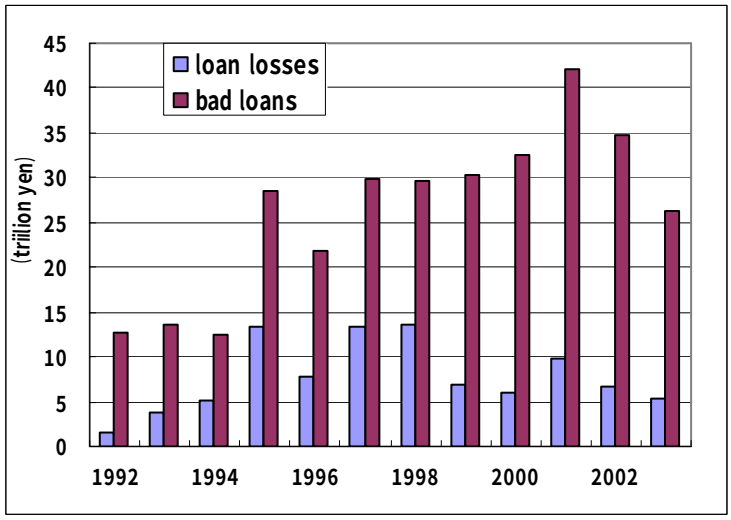
[2] There are several definitions of bad loans in Japan. The figures that we used in this chapter are those of risk monitored assets (*Risuku-Kanri-Saiken* in Japanese).

Figure 1. The Ratio of Loan with Real Estate as Collateral



(Source) Bank of Japan.

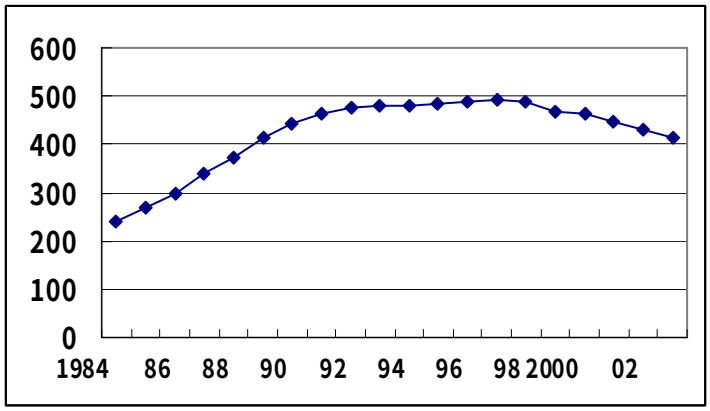
Figure 2. Bad Loans and Loan Losses of Japanese Banks



(Note) Figures until 1994 were based on only major banks, and figures since 1995 were based on all domestic banks.

(Source) Financial Services Agency.

Figure 3. Loans and Discounts of Domestically Licensed Banks (trillion yen)



(source) Bank of Japan.

Table 1. Major Failures of Japanese Banks, Insurance and Securities Firms: 1995-1999

Date	Financial Institution	**Deposit Insurance Expense** (100 million yen)
7-31-95	Cosmo Credit Cooperative	1,250
8-30-95	Kizu Credit Cooperative	10,340
8-31-95	Hyogo Bank	4,730
12-7-95	Osaka Credit Cooperative	2,526
4-1-96	Taiheiyo Bank	1,170
11-21-96	Hanwa Bank	2,960
4-25-97	Nissan Life Insurance	NA
5-14-97	Tanabe Credit Cooperative	1,081
5-14-97	Chogin Osaka Credit Cooperative	3,159
10-14-97	Kyoto Kyoei Bank	1,019
11-04-97	Sanyo Securities	NA
11-17-97	Hokkaido Takushoku Bank	33,726
11-25-97	Yamaichi Securities	NA
11-25-97	Tokuyou City Bank	2,888
3-17-98	Wakayamaken Shoko Credit Cooperative	2,193
5-15-98	Midori Bank	10,560
10-23-98	Long-term Credit Bank of Japan	40,378
12-14-98	Nippon Credit Bank	32,365
4-12-99	Kokumin Bank	2,180
5-24-99	Koufuku Bank	6,647
6-7-99	Tohou Life Insurance	NA
6-14-99	Tokyo-Sowa Bank	8,868
8-9-99	Namihaya Bank	8,431
10-4-99	Niigata-Chuou Bank	4,838

(Source) Spiegel and Yamori (2004a).

2.2 Decreasing Importance of Banks' Roles in Japanese Economy

Japanese banks have played very important roles in Japanese financial system, and a vast amount of studies has been devoted to clarify their roles. It is well-known that Japanese banks keep close long-term relationship with corporate customers. This is called "main-bank" relationship. A main-bank is generally a bank; (1) that provides the largest amount of loans to the firm, and (2) that is a major shareholder of the firm. Furthermore, it is often observed that persons who retired from the main-bank are employed as board members of customer firms. Several studies demonstrate that as the "main-bank" relationship reduces the costs induced by asymmetric information, it has economic rationale. As the asymmetric information problem is severer when firms face financial distress, the values of main-bank relationship may be easily observed regarding financially distressed firms. For example, Hoshi, Kashyap, and Sharfstein (1990) investigated investment of firms in financial distress and found that firms that belonged to *Keiretsu* invested more than independent firms. Gibson (1995, 1997), Yamori and Murakami (1999), Kang and Stulz (2000) and Brewer, et al. (2003) showed that weak main banks had negative effects on corporate customers. Kaplan and Minton (1994) showed that bankers were likely to be appointed as firm' directors when their customer firms were in financial distress. To summarize, previous studies agree that Japanese banks have played active corporate governance roles.

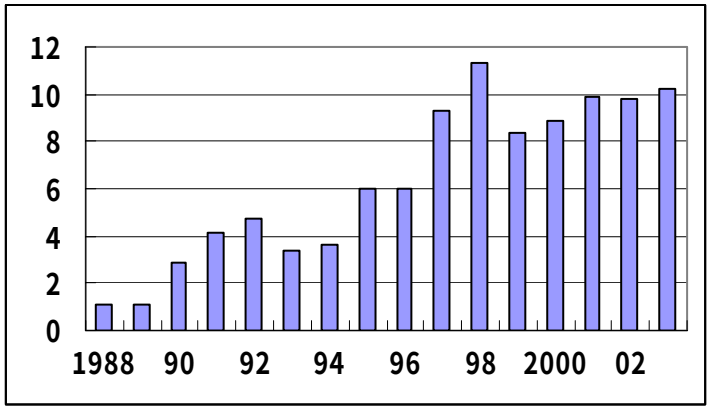
However, the importance of the role of banks has been decreasing as financial deregulation advances since the late 1970's. Big firms raise more funds through financial markets. For example, amount of new corporate straight bonds issue was only one trillion yen in 1988, while it was 12 trillion yen in 2003. (See Figure 3). As a result, banks begun to lose their priority in firm information, and their customer pool begun to deteriorate in the late 1980's. Japanese banks had to find new customers and started to increase loans to real estate firms. Hoshi and Kashyap (2001) regarded this trend as a major cause of bad loans problems.

The financial Big Bang accelerated the declines of bank roles. First, Japanese banks used to hold huge amounts of stocks of customer firms, but were forced to sell them due to their fragile capital positions. Domestically licensed banks held stocks of 47 trillion yen in their banking account at the end of 1997, while they halved stock holdings to 24 trillion yen at the end of 2003. Second, foreign investors increase investment in Japanese firms. For example, foreign investors had 8.1% of outstanding stocks of all listed companies at the end of March 1995, while they had 21.8% on March 31, 2004. Unlike traditional friendly shareholders, foreign shareholders are active to govern management. Under foreign investors' pressure, Japanese managers have to consider their stockholders' profits first. Third, as bank capital position weakens, it is very hard for banks to assist financially distress firms. That is, main bank can not

execute the implicit insurance contract with customer firms.

In sum, the government advances the deregulation of capital markets to harmonize Japanese capital markets with international markets[3]. Currently, the usability of Japanese capital markets is improved. Although banks are still important in screening and monitoring small and medium-sized enterprises, capital markets are now expected to play important roles regarding at least large companies finance and corporate governance.

Figure 4. New Issues of Corporate Straight Bond (trillion yen)



(Source) Japan Securities Dealers Associations.

2.3 Accounting Reform; Kaikei Big Bang

It is often said that as banks can observe firm's daily transactions through its checking accounts, banks have a lot of private information to assess customer's risks. In the bank-centered economy, as firms borrowed necessary money from banks, they did not take care of conveying their true financial conditions to capital market participants. Therefore, it was natural that Japanese firms were reluctant to disclose their financial condition. In contrast, the quality of the disclosed financial reports is crucial in the market economy. Market participants evaluate firm's creditworthiness based on disclosed documents, such as B/S and P/L. Therefore, disclosure and accounting reform conducted since the late 1990's were badly necessary to help market participants, including credit rating companies, to evaluate the creditworthiness of Japanese firms.

Although the government has conducted wide range disclosure reforms, we explain some examples. First, Tokyo Stock Exchange requires companies listed in its Mothers Section (a

[3] Of course, Japanese capital markets are different from U.S in several ways. For example, Kang, et al. (1995) and Kang and Stulz (1996) fund that Japanese managers decide to issue shares and offshore dollar-denominated convertible and warrant bond based on different considerations from American managers.

special section for venture firms) to disclose quarterly financial reports since 1999 and all other companies listed in other sections since 2004, while Japanese listed companies were required to disclose biannual reports before. A second example is bank disclosure on bad loans. Banks did not disclose their bad loans, and depositors were not interested in such figures because they believed that their deposits were protected by Ministry of Finance. However, as bank failures frequently occurred, depositors wanted to evaluate bank solvency and demanded information on bad loans. Responding to such demand, the government required banks to disclose these figures. (See Table 3).

In Japan, the accounting reform is often called "Kaikei Big Bang." The basic purpose of the Big Bang is to harmonize Japanese accounting rule with the International Accounting Standard (IAS). Important steps includes the introductions of consolidated accounting and statement of cash flow since March 2000, the introduction of mark-to-market evaluation of financial products and accounting standard of retirement benefit since March 2001, and the introduction of mark-to-market evaluation of cross-holding shares since March 2002.

Of course, some observers criticize that important information that affects market evaluation of the firm is not disclosed yet. For example, although current values of the "Other Securities" are disclosed, what kinds of securities consist of them is not disclosed. So, market observers do not know the maturity and denomination of "Other Securities." If substantial parts of "Other Securities" are foreign-currency denominated bonds, then investors should consider exchange rate risks. Furthermore, development of financial markets enables firms to change their risk exposures by reshuffling their balance sheet contents easily[4].

[4] Morgan and Stiroh (2001) found that capital markets negatively evaluate banks with larger trading account and commercial loans. Flannery et al. (2004) also found that the bid-ask spread of bank stocks is correlated with components of bank portfolios.

Table 3. "Bad-loan" Disclosure Requirements among Japanese Financial Institutions[a]

	BAD1	BAD2	BAD3	BAD4
Large Banks (City, long-term credit, and trust banks)	March 1993	March 1993	March 1996[b]	September 1996[c]
Regional Banks	March 1993	March 1996	March 1997[d]	March 1997
Second Regional Banks	March 1993	March 1997[d]	March 1997[d]	March 1997
Shinkin Banks	March 1996[e]	March 1998	March 1998	March 1998

Notes:

a. This table is based on financial statement disclosure requirements. The total amount of bad loan that the entire deposit-taking financial institutions held has been disclosed since September 1995.

b. Voluntary disclosure has existed since September 1995. However, the figures were not included in the official financial statements for that year.

c. The figures have been voluntarily disclosed in annual report since March 1996.

d. The disclosure for March 1996 was voluntary and became required after March 1997. However, all banks actually voluntarily disclosed their figures in March 1996.

e. The National Association of Shinkin Banks recommended disclosure by Shinkin banks with deposits exceeding 100 billion yen. However, compliance was not universal.

(Source) Spiegel and Yamori (2004b).

2.4 Credit Rating Companies in Japanese Financial Markets

Credit rating companies are important players in developed financial markets. They evaluate the creditworthiness of bond issuers, based on public information and sometimes on private information that is obtained through interviewing managers. As the evaluation of credit rating companies over bonds are made public, market participants can use the credit grades to judge whether the bond is properly priced. In the developed financial markets, the bond should be priced based on its risks. Of course, as shown in Figure 5, companies with higher credit grade obtain cheaper funds in recent Japanese market.

Although credit rating companies have more than one century experience in the United States, they have shorter history in Japan. As Japanese companies borrowed from banks and did not issue substantial amount of bonds, there were no needs for credit rating companies for a long time. Credit rating companies are necessary only when many firms consider issuing bonds. At first, when Japanese companies issued foreign bonds, they obtained credit grade from foreign

credit rating companies. Then, due to the development of domestic bond markets, domestic credit rating companies were established, and foreign credit rating companies started their operation in Japan.

Now, there are four major credit rating companies in Japan[5]. Two are Japanese companies, and remaining two are U.S. based companies. The leading domestic credit rating company is Rating and Investment Information, Inc.(R&I). R&I succeeded Nihon Bond Research Institute (NBRI) and Nihon Investors Services (NIS). The NBRI was established in 1979 by Nihon Keizai Shinbun, and the NIS was established in 1985. In 1998, the NBRI and the NIS were merged into R&I. In 2003, R&I covered approximately 600 domestic firms. Another Japanese credit rating company is Japan Credit Rating Agency (JCR), which was established in 1985. In March 2004, JCR assigned credit ratings to 590 domestic firms. JCR is active in providing the credit ratings to financial, retail, and services sectors.

Although two U.S. based companies operate internationally and have more than one century history, their operations in Japan started only in mid 1980's. Moody's Japan K.K. was established in 1985 as a subsidiary of Moody's Investors Service Inc. Now, Moody's Japan (simply Moody's below) covers about 300 Japanese firms. Standard & Poor's (S&P) first assign credit grades to a Japanese firm in 1975 and opened Tokyo branch in 1986. Now, 140 people work for S&P in Tokyo and about 360 Japanese firms obtain credit grade from S&P.

The number of firms that these credit rating companies assign credit ratings is increasing. According to Japan Credit Rating Agency, 916 firms and organizations had credit rating as of March 2004[6]. In the real business world, the influence of credit ratings was deeply recognized during the Yamaichi and Hokkaido Takushoku crises. It is commonly believed that these financial institutions could not obtain necessary funds from the short-term markets because of the rapid downgrade of their credit ratings and were forced to go into bankruptcy. For example, Yamaichi, one of four Japanese big securities companies, was downgraded several times before the failure. Concretely speaking, the NBRI downgraded Yamaichi Securities from A+ to A in February 1997, which was only nine month before the Yamaichi failure (November 24). The NBRI announced that it would downgrade Yamaichi further on July 30, and actually downgraded it from A to BBB on November 20. Moody's first announced that it would downgrade Yamaichi from BBB+ on November 6, and then it downgraded Yamaichi from BBB+ to BB+ on November 21, just three days before the bankruptcy. S&P was more aggressive in downgrading Yamaichi. S&P first announced that it would downgrade Yamaichi from BBB+ on April 17, and actually downgraded it from BBB+ to BBB on June 5. On

[5] The Financial Services Agency declares five credit rating companies (i.e., Moody's, S&P, R&I, JCR, and Fitch ratings) as "Authorized Credit Rating Companies."

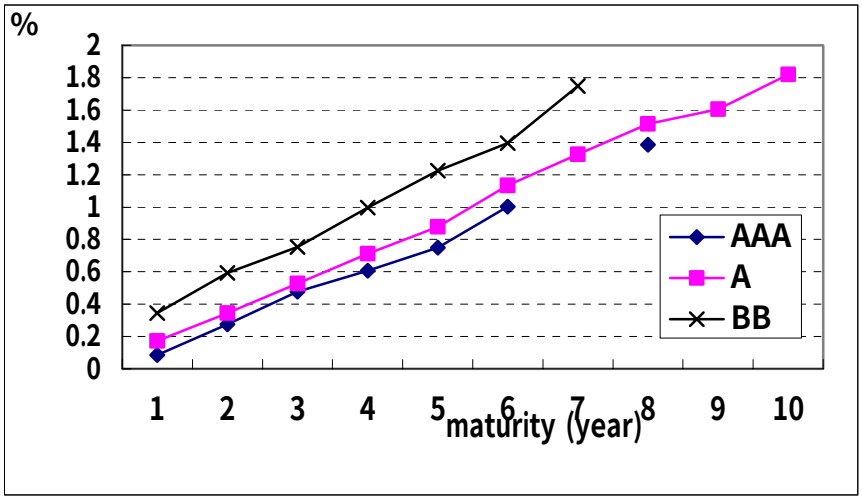
[6] Recently, not only listed companies, but also government agencies, local governments, and universities request rating companies to assign the grades.

November 17, S&P downgraded Yamaichi from BBB to BBB-, and on November 21, announced that it would downgrade Yamaichi furthermore. Similar situation occurred regarding Hokkaido Takushoku Bank.

There is another evidence to verify that credit ratings enhanced influence in the late 1990's. That is, we counted how many articles in Nihon Keizai Shinbun, the most popular business newspaper in Japan, used a word "credit ratings" (*Kakuzuke* in Japanese). We found that 773 articles used Kakuzuke during 1980 to 1984, 2070 during 1985 to 1989, 5379 from 1990 to 1994, 8906 during 1995 to 1999, and 5019 during 2000 to 2004[7]. The number of usage of Kakuzuke during the 1995-99 period is more than ten times larger than that during the 1980-84 period.

Above informal evidences were supported by Bremer and Pettway (2002), who examined the stock prices of Japanese banks that were subsequently downgraded by Moody's Investors Services during the 1986–1998 period. The paper found that the market imposed a significant penalty before as well as at the time of downgrades by Moody's. This suggests that the rating company created information that affected shareholders' evaluation.

Figure 5. Market Interest Rates of Bonds by Credit Ratings



(Notes) Credit ratings are based on S&P's. Interest rates and ratings are as of May 2004.
(Source) Japan Securities Dealers Association.

3. Methodology and Data

3.1 Methodology

[7] Note that we include data only until September 22, 2004.

As mentioned above, the accounting reform has been advanced and credit rating companies have played more and more important roles in Japanese economy. However, there is a critical question whether credit rating companies appropriately rate the grade. When a credit rating company downgrades Company A, Company A often claims that the downgrade is not justified by the company's true situation[8]. Therefore, it is interesting to investigate the ability of credit rating companies. A standard method is to evaluate the ex-post default probability by credit grade. But we have to wait for a long time to accumulate relevant information.

Therefore, we use another methodology that can be conducted with current data sets. Concretely, we follow Morgan (2003), who focuses on disagreement between rating companies over new issue bonds. The basic idea of Morgan (2002) is simple: if firm's risk is harder to observe, the raters in the business of judging risks should disagree more often over firm creditworthiness. Similarly, we assume that the fact that credit rating companies likely agree on the creditworthiness of a firm suggests that credit rating companies make more accurate judgment. If there is one true solvency condition of Company A, the answer about its solvency should be the same among credit rating companies. Both more information and higher ability of credit rating companies should lead to smaller gaps in evaluation among credit rating companies. Unfortunately, we confess in advance that we can not separate the more-information hypothesis from the higher-ability hypothesis. So, at this stage, we can only document how differently four credit rating companies rate Japanese firms.

The methodology that Morgan (2003) used is as follows. First, he collected credit ratings by Moody's and S&P regarding newly issued bonds during 1983-1993. Second, he mapped the letter ratings of rating agencies, such as AAA, to a single numeric scale in the following manner. As shown in Table 4, AAA (or Aaa) is assigned 1, AA+ (Aa1) is 2. So, better letter ratings correspond to lower numbers and vice versa. Third, he calculated basic statistics, such as average scores and rank correlations in order to compare credit ratings assigned by S&P and Moody's. Finally, he found that the disagreement over banks and insurance companies are larger than the disagreement over other industries.

We follow the Morgan's methodology and examine the disagreements among four raters. Note that two Japanese credit rating companies, R&I and JCR, use the same letter ratings as S&P.

[8] For example, Moody's downgraded Japanese life insurance companies on March 11, 2002. Nihon Life Insurance, the largest insurance company in Japan, which was downgraded from Aa3 to A3, announced that as its solvency remained good, it could not understand this sudden downgrade. (See Mainichi Shinbun, March 11, 2002).

Table 4. The Letter Ratings and Numeric Scale

Score	Moody's	S&P
1	Aaa	AAA
2	Aa1	AA+
3	Aa2	AA
4	Aa3	AA-
5	A1	A+
6	A2	A
7	A3	A-
8	Baa1	BBB+
9	Baa2	BBB
10	Baa3	BBB-
11	Ba1	BB+
12	Ba2	BB
13	Ba3	BB-
14	B1	B+
15	B2	B
16	B3	B-
17	Caa1	CCC+
18	Caa2	CCC
19	Caa3	CCC-

3.2 Data Source

While Morgan (2003) used credit ratings of U.S. new issued bonds, it is hard to use those data regarding Japan. First, unlike the United States, not so many Japanese companies issue bonds. Particularly, financial institutions, including banks and non-bank finance companies had been prohibited from issuing bonds until recent year. For example, Japanese banks were allowed to issue straight bond since 1999. So, new issue bonds data are only available regarding some limited sectors[9]. Second, it is not so common that more than two credit ratings companies rate new issued bonds in Japan. For example, R&I alone rated new straight bonds that were issued by Sanwa Bank, a city bank, in 1999. Third, theoretically we expect that firms that could issue straight bonds suffered from less asymmetric information problem. In other words, firms with larger disagreement among credit rating companies were hard to issue bonds. Therefore, new issue sample might be biased toward concluding that the disagreements are small.

[9] The numbers of new issues of straight bonds since 1998 are 764 for 1998, 694 for 1999, 411 for 2000, 354 for 2001, 282 for 2002, and 366 for 2003. Many firms issue several times.

Here, we use issuer ratings, which are often cited in Japan[10]. The issuer ratings are reported in various sources, such as *Nikkei Kaisha Joho* and *Kaisha Shikiho*, both of which are quarterly issued and are commonly used by Japanese investors. The problem to use the issuer ratings exists due to the different timing of the revision. Credit rating companies regularly consider whether current credit rating is appropriate. The difference in credit ratings may simply reflect that a credit rating company revises the grade faster than others. This timing issue is minimized if we use the Fall issue of Kaisha Joho. Accounting year of most Japanese firms are from April 1 to March 31. The Laws require that the authorized accounting data should be disclosed within three months after the end of the accounting year. So, when the Fall issue is published, we can fairly expect that all rating companies consider new information that was released by July, and revise the grade if necessary.

Here, we examine the disagreement of firms' ratings by using the Fall issue of *Nikkei Kaisha Joho* for years 1999, 2002 and 2004. These years are the exact period that the Japan's Big Bang has developed. We are interested in investigating credit ratings in the earlier period. However, both *Kaisha Joho* and *Kaisha Shikiho* did not include information on credit ratings before 1997. This also suggests that credit ratings were not important before the financial crises. Fortunately, all four credit rating companies kindly provided us the list of their rating grades around the end of August 1996. Therefore, we use these data for 1996. Furthermore, we cannot use the Fall issue of 2004 because our investigation was conducted in Summer 2004. Note that we use the Summer 2004 version for the 2004 investigation.

3.3 Data Description

As mentioned above, there are four major credit rating companies in Japan. The coverage of firms that four credit rating companies assigned credit rating varies. For our purpose, the firms that are rated by at least two credit rating companies do matter. We call them multi-rated companies. Table 5 shows that the number of multi-rated firms increased from 1996 to 2004. In

[10] The current credit ratings are available at the homepages of credit rating companies without any charge, but the old data are not available on homepages.

	Address
R&I	http://www.r-i.co.jp/
S&P	http://www.standardandpoors.com/japan/
JCR	http://www.jcr.co.jp/
Fitch	http://www.fitchratings.co.jp/
Moody's	http://www.moodys.co.jp/

2004, more than 250 Japanese firms are multi-rated, and (although not shown in the table) 817 firms out of 3700 listed companies have a credit rating from at least one credit rating company. This is consistent with our findings in Section 2.4 that credit ratings have played more and more important roles in Japan.

Table 5 also shows average ratings of four credit rating companies. American raters assigned more unfavorable grades to Japanese firms than Japanese raters. For example, there is 0.79 notch difference between S&P's mean grade and JCR's mean grade for 2004. However, this comparison may not be appropriate because each rater evaluated different companies. There are only a few companies that have credit ratings from four rating companies for all four years. One of them is Japan Airlines (JAL). Figure 6 shows the changes of the credit ratings of JAL by four credit rating companies. As of 1996, JCR rated JAL as AA, while S&P rated it as BBB+. Then, all credit rating companies downgraded JAL by four to seven notches. There are two remarkable features. First, the credit ratings of JAL are not converging among four rating companies. Large disagreement remains. Second, although there are a few notch differences among credit ratings, the relative evaluation is stable. That is, S&P's rating is always the lowest and JCR's rating is always the highest among four. Another firm that had four credit grades is Mitsui-Sumitomo Insurance. All four rating companies rated Mitsui-Sumitomo Insurance as AAA for 1996. (See Figure 7). Then the evaluation became various. For 2004, JCR still rated it as AAA, while Moody's and S&P rated it as AA- (Aa3).

As there are few firms that have credit grades from all four companies, it is impossible to compare four credit rating companies at once. For example, if we use only observations common to four rating companies, the sample for 1996 includes only seven firms. However, there are many companies that have credit grades from two credit rating companies[11]. In this paper, we focus on firms that have grades from two rating companies and investigate disagreement of grades over these firms.

[11] It is interesting, but beyond the scope of this chapter, to consider so-called rating shopping. Usually, firms ask credit rating companies to rate the grade and pay some fees for the rating. However, credit rating companies sometimes announce the rating of firms without firms' request. Furthermore, Moody's does not separate requested credit ratings from non-requested ratings. Therefore, it is technically difficult to analyze the rate shopping issue.

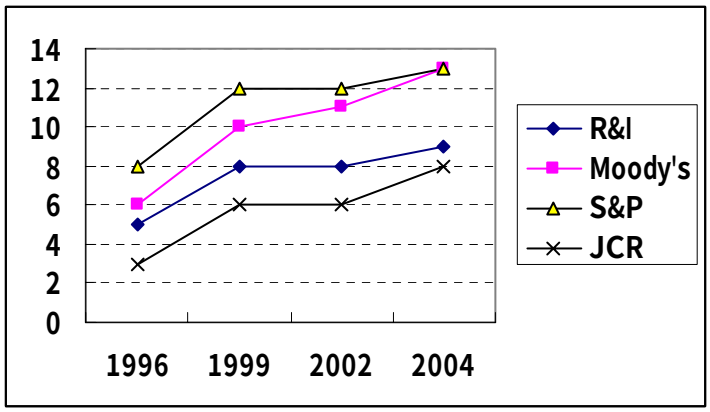
Table 5. The Number of Multi-rated Firms

	1996		1999		2002		2004	
	Number	Average	Number	Average	Number	Average	Number	Average
R&I	271	5.89	472	7.25	418	7.14	316	7.07
Moody's	202	7.37	260	8.40	249	8.73	232	7.53
S&P	57	4.95	182	8.52	255	9.31	276	7.38
JCR	185	6.69	359	7.25	330	6.65	271	6.74
All four	7		63		96		79	

(Notes) Number = number of firms that the rater assigned the grade

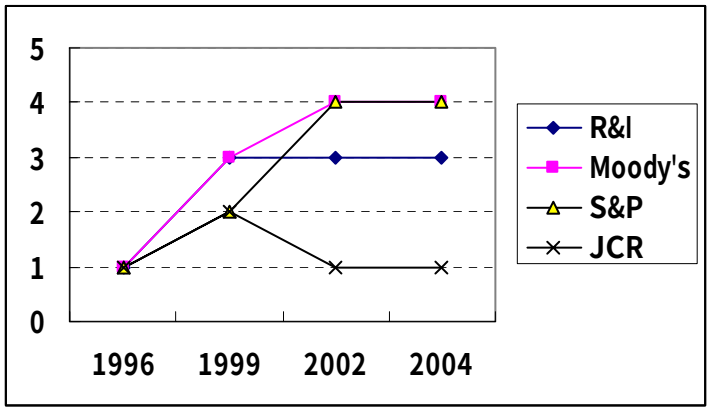
Average = mean of the credit ratings for all firms that the rater assigned the grade

Figure 6. Credit Ratings of Japan Airlines (JAL)



(Note) JAL was merged with Japan Air System (JAS) in 2002.

Figure 7. Credit Ratings of Mitsui Sumitomo Insurance Co.



(Note) For 1996 and 1999, we used Mitsui Insurance, which was merged with Sumitomo Insurance to Mitsui-Sumitomo Insurance in 2001.

4. Results and Interpretation

4.1 Whole Industries

In this sub-section, we use all firms to measure the size of disagreement among rating companies. As every rating company rates different firms, we perform one by one comparison (e.g., R&I vs. Moody's). Table 6 shows the results of comparison between two rating companies[12]. Table 6 indicates average score of ratings for each rating company (numerical number), difference between them and their t-statistics.

First, we compare R&I and Moody's. In 1996, these two credit rating companies commonly rated 149 firms. The average rate of R&I was 4.50 (i.e., between AA- and A+) and that of Moody's was 7.28 (i.e., between A3 and Baa1). As shown in the same table, the difference in the mean is statistically significant. As the larger number means lower credit rating in our scoring rule, Moody's evaluated Japanese firms more negatively than R&I did. Results for 1999, 2002, and 2004 are similar to that for 1996. Some readers may remark that the difference for 2004 is the smallest. There are two possibilities. First, the evaluation of firms' creditworthiness by R&I and Moody's are converging. Second, the use of Summer 2004 issue of *Kaisha Joho* may affect the results. Therefore, we should be cautious about drawing a final conclusion based on results for 2004.

Table 6(ii) considers disagreement between Moody's and S&P. The average rate of Moody's was 4.96 and that of S&P was 5.20 for 1996[13]. For all four years, S&P assigned more unfavorable grades to Japanese firms than Moody's. Except 1996, the differences are statistically significant. Finally, between R&I and JCR, R&I assigned more unfavorable grades to Japanese firms than JCR.

Table 6 shows that domestic rating companies tend to evaluate Japanese firms' creditworthiness more highly than foreign rating companies. Although this tendency is an interesting research topic, this paper does not consider this issue. What is important for this paper is the fact that there remains large disagreement among credit rating companies over Japanese firms' creditworthiness.

[12] As there are four companies, there are six combinations. Here, we display three representative results to save the space.

[13] Note that the Moody's average value in Table 6(i) is 7.28 and that in Table 6(ii) is 4.96. This difference is caused by the different sample firms.

Table 6. Disagreement between Two Credit Rating Companies

(i) R&I and Moody's

	Number	R&I	Moody's	differences	t-value
1996	149	4.50	7.28	-2.79	-22.9
1999	227	5.71	8.39	-2.68	-28.6
2002	220	6.27	8.69	-2.42	-29.2
2004	171	6.84	7.54	-0.70	-3.3

(ii) Moody's and S&P

	Number	Moody's	S&P	differences	t-value
1996	50	4.96	5.20	-0.24	-1.3
1999	157	7.83	8.38	-0.55	-4.5
2002	188	8.54	9.27	-0.73	-6.9
2004	167	6.94	7.38	-0.44	-2.4

(iii) R&I and JCR

	Number	R&I	JCR	differences	t-value
1996	154	6.91	6.83	0.08	0.8
1999	336	8.02	7.35	0.66	13.2
2002	298	7.47	6.74	0.73	16.5
2004	211	7.20	6.64	0.56	3.4

4.2 Correlation Analysis

The above results suggest that the absolute level of the credit ratings is different among rating companies. However, if the relative evaluation is similar, the absolute difference may not be crucial. For example, there are three companies, X, Y, and Z. A rating company rated X as AAA, B as AA, and C as A, while another rating companies rated X as AA, Y as A, and Z as BBB. In the sense that they ranked X is the best, Y is middle, and Z is the lowest, the relative creditworthiness evaluation is the same. Here, similarity is measured according to values of correlation coefficients between scores assigned by two rating companies. Namely, we examine simple correlation and rank correlation among credit rating scores[14].

Table 7 shows that the coefficients of correlation tend to increase in recent year except 2004, suggesting that relative evaluation converges in recent years. The irregular results for 2004 may

[14] Here, we used Spearman's Ro to show rank correlation.

be due to the fact that we used the *Nikkei Kaisha Joho* 2004 Summer issue, not the Fall issue because of the availability when we conducted this research. That is, we suspect that there are some time gaps in revising the grades based on newly released financial accounting reports among rating companies, and that the observed increase of disagreement for 2004 may be at least partially due to asynchronous changes in rating over time. Therefore, at this stage, although we believe that the relative evaluation of credit rating companies likely converges, we can not draw a definitive final conclusion.

Table 7. Correlation of Credit Grades between Credit Rating Companies

Correlation Coefficient with R&I

	Moody's			S&P			JCR		
	Correlation	Rank Correlation	observation	Correlation	Rank Correlation	observation	Correlation	Rank Correlation	observation
1996	0.901	0.897	149	0.798	0.788	33	0.874	0.862	154
1999	0.891	0.895	227	0.868	0.879	153	0.947	0.932	336
2002	0.925	0.911	220	0.904	0.885	217	0.966	0.960	298
2004	0.609	0.463	171	0.292	0.28	202	0.637	0.635	211

Correlation Coefficient with Moody's

	S&P			JCR		
	Correlation	Rank Correlation	observation	Correlation	Rank Correlation	observation
1996	0.872	0.874	50	0.689	0.674	79
1999	0.907	0.906	157	0.833	0.812	117
2002	0.912	0.899	188	0.892	0.877	140
2004	0.682	0.674	167	0.363	0.436	141

Correlation Coefficient with S&P

	JCR		
	Correlation	Rank Correlation	observation
1996	0.854	0.883	16
1999	0.832	0.794	86
2002	0.902	0.876	151
2004	0.486	0.459	168

4.3 Disagreements by Industry

Generally speaking, some industries may be difficult to evaluate. It is interesting to show the differences in credit ratings by industry. Morgan (2003) found that there are significant differences in raters' evaluation regarding banks and insurance companies, while there is little disagreement in evaluating other industries. That is, he found that there is 0.83 notch difference regarding banks and 1.33 notch difference regarding insurance companies, while there is 0.65 notch difference regarding other industries[15]. Morgan concluded that these differences came from the fact that banks and insurance companies involved larger asymmetric information about the quality of their assets and liabilities. This conclusion is consistent with Morgan and Stiroh (2001) and Flannery et al. (2002), which argued that it is very hard for outsiders to evaluate commercial loans and other liquid financial assets[16].

Unfortunately, Tables 6 and 7 suggest that 2004 data are problematic. So, we use 2002 data in this sub-section. Table 8 shows the industry results (i.e., average absolute gaps). Here, we classify all firms that have credit ratings from at least two credit rating companies into 21 industries[17]. Regarding R&I and Moody's, there are more than 3 notch differences for nine industries, while the difference for industry 20 (electric and gas) is the smallest. It is consistent with Morgan (2002), which found the smallest disagreement over public utilities industry. Surprisingly, the difference for banks is relatively small. We will investigate banks in more depth in the next sub-section. Regarding Moody's and S&P, Industry 7 (steel) recorded the largest difference, followed by industry 1 (construction) and industry 19 (transportation). Industry 15 (other finance) recorded the smallest difference. Finally, regarding R&I and JCR, Industry 17 (Insurance) recorded the largest difference, and industries 10 (equipment for transportation) and 15 (non-bank financial institutions) recorded the second largest, while industry 4 (chemical) recorded the smallest difference.

We should be cautious to derive a definitive conclusion because many industry results are based on small sample. It seems that there are no clear features about industrial differences. For example, disagreement over insurance industry between R&I and JCR is the largest, while that between R&I and Moody's is the second smallest. Regarding other finance, disagreement between R&I and JCR is the second largest, while that between Moody's and S&P is the smallest. Morgan (2002) found that disagreements between Moody's and S&P over "other

[15] These figures (i.e., average absolute gap) are cited from Table 2 of Morgan (2002).
[16] Morgan (2002) ascertained that the fact that bank assets are mainly financial assets invites agency problem because risks of loans to small business are hard to observe and trading assets are easy to change.
[17] Note that most of Japanese life insurance companies are mutual, not stock companies. As our data source included credit ratings regarding only listed companies, all firms belonging to insurance sector in this chapter are general insurance companies, not life insurance companies.

finance" sector were smaller. He claimed that other finance sector was not so opaque because they favored the asset-backed bonds. The unclear result regarding Japanese non-bank finance may be due to their different asset structures from their U.S. counterparts. Finally, the only result that we can fairly conclude is that public utilities industry (i.e., industry 20) is the easiest to evaluate.

Table 8. Credit Rate Differences by Industry (Average Absolute Gaps)

industry code	Industry	R&I vs. Moody's	Moody's vs. S&P	R&I vs. JCR
1	Construction	3.00	1.88	0.85
2	Food	2.18	0.73	0.47
3	Fiber, pulp, and paper	3.25	1.67	0.82
4	Chemistry	3.00	0.45	0.40
5	Medicine	1.57	0.71	0.82
6	Oil, coal, rubber, the glass, and earth and stone product	3.10	1.30	0.73
7	Steel, nonferrous metals, and other metal	2.58	2.80	0.88
8	Machine	2.40	1.25	0.63
9	Electric equipment	2.52	1.27	0.50
10	Equipment for transportation	2.56	0.63	1.25
11	Precision machine and other machine	2.70	1.00	1.00
12	Wholesale	2.75	1.40	0.79
13	Retail	3.09	1.42	0.83
14	Bank	1.74	1.32	1.06
15	Other finance	3.00	0.25	1.25
16	Securities	3.33		1.00
17	Insurance	1.43	1.00	1.50
18	Real estate	3.20	1.25	0.75
19	Transportation by land, marine and air, and warehouse	2.36	1.71	1.00
20	Electric and gas	1.38	0.69	0.76
21	Service	3.00		0.71

4.4 Disagreement over Bank Creditworthiness

Finally, we scrutinize disagreement over bank creditworthiness, which was actually a main

research interest of Morgan (2002). Investigating Japanese bank case itself is also interesting because of less transparent bank disclosure than U.S. banks and frequent bank failures in the late 1990's. Table 9(i) shows some measures of disagreement between R&I and Moody's over Japanese banks. Although the average rating differences are still significantly large, differences for 2002 and 2004 are smaller than those for 1996 and 1999. Also, correlation coefficients (and rank correlation coefficients) increase. These findings suggest that the disagreement between R&I and Moody's over bank creditworthiness become smaller. However, disagreement between Moody's and S&P seems not to have any clear tendency. Namely, the gap for 2002 is larger than previous years, while the correlation between them for 2002 is the largest.

Table 9. Disagreement over Banks

(i) R&I vs. Moody's

	observations	Average rating difference	Average absolute gap	correlation between ratings	Rank correlation
1996	6	-2.50	2.50	0.693	0.664
1999	23	-2.13	2.48	0.674	0.858
2002	27	-1.74	1.74	0.899	0.943
2004	25	-1.88	1.88	0.805	0.862

(ii)Moody's vs. S&P

	observations	Average rating difference	Average absolute gap	correlation between ratings	Rank correlation
1996	19	-0.37	1.11	0.625	0.699
1999	43	-0.93	1.02	0.787	0.785
2002	38	-1.31	1.31	0.832	0.811
2004	25	-0.76	0.84	0.745	0.770

5. Conclusion

The Japanese economy has drastically changed since the burst of the bubble, and the role of banks in Japanese economy has decreased. The government wants capital markets to play more important roles and deregulates capital markets. Credit ratings are crucial for capital markets, and we actually observe that credit rating companies enhance their influence. However, there is no research to investigate whether how differently credit rating companies rate firms. Using methodology that Morgan (2002) used, we find that the foreign credit rating companies tend to assign lower grade to Japanese firms than Japanese rating companies. And the differences

among raters remain large, in spite of the disclosure and accounting rule reforms. However, when we focus on the correlation between scores of credit ratings, we find that credit rating companies tend to agree more often on the relative risk evaluation. Although we need further examination, we understand that the *relative* risks become easier to monitor due to the reforms.

We are also interested in investigating what sectors credit ratings more often disagree on. Similar to Morgan (2002), we found that the smallest difference existed regarding evaluation on public utilities sectors. Regrettably, we failed to find larger disagreements among credit rating companies over banks and insurance companies.

Although we find several interests facts, we need further research. First, we only document the disagreement among credit raging companies, but we do not consider why they disagree. Insufficient information, their low ability or less-sophisticated experiences, and credit rating companies' risk preference may matter. Second, to directly compare U.S. market results with our results, we have to use new issue bonds ratings regarding Japanese firms. Third, the rate shopping is an interesting topic. Fourth, as argued in the text, it is interesting to examine the effect of the enhancing role and influence of credit ratings companies on Japanese corporate governance.

Acknowledgement

Yamori appreciates the Postal Life Insurance Culture Foundation (Kan-ihoken Bunka-Zaidan), the Ministry of Education, Science, Sports and Culture (Grant-in-Aid for Scientific Research) and Nomura Foundation for Promoting Academic Research for their financial supports. All remaining errors, of course, are ours.

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