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Bank credit risk disclosure in Japan

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## Abstract

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# Bank credit risk disclosure in Japan

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# Extended abstract

The recent banking crisis has highlighted deficiencies in the credit risk management of Japanese banks. To correct the problem by leveraging market discipline, the industry needs to enhance its transparency in the quality of lending assets. An additional impetus for reconsideration of the present disclosure regime comes from the endorsement of the new Basel (II) regulations on capital adequacy and expected revision of Japan's mandated disclosure rules for banks.

The report reviews the present disclosure practices in the Japanese banking and analyzes the quality of disclosed information about the banks' lending assets. It reveals the strong and weak sides of the present disclosure regime and delivers important insights into determinants of the banks' disclosure activities. The results lead to the formulation of specific suggestions on what is needed to improve transparency in the lending activities of Japanese banks.

Findings and suggestions of the report are as follows.

1.  At present, Japanese banking organizations disclose information via multiple channels including the disclosure reports, securities reports, business result briefs, and company presentation meetings. Information releases via the disclosure and securities reports follow mandated rules set up in by-laws, and the other two channels convey information disclosed largely on a voluntary basis.

    The banking organizations have relatively weak incentives for voluntary releases in the disclosure reports, because they are targeted mostly at protected creditors and too costly for meaningful comparison across multiple organizations. Unlike the reports, business result briefs are less costly in use, and they have recently become the main channel of voluntary disclosures made by the commercial banks to manage mass-media and reputation risks.

    The credit associations and cooperatives typically have no unprotected creditors. For that reason, they disclose only through the mandatory reports, and the total flow of information they make open to the market falls far behind that of the commercial banks.

2.  The present disclosure regime places strong emphasis on information about non-performing loans. The information is largely consistent across banking organizations, takes explicit account of collateral and guarantees, and is directly linked to the structure of the loss provisioning system. These properties and the recent efforts of the authorities to enforce strict loan classification largely alleviate the long-standing concern about underprovisioning in Japanese banks.

    Unlike, the NPL figures, loss provisioning rates receive far less attention. Furthermore, in the present provisioning framework they are strongly tied to the historical loss experience. As a result, the value of provisioning rate disclosures as a source of information about expected credit losses is reduced.

3. A large survey of credit risk disclosures on the level of individual banking organizations shows that the presence of specific data requirements in the nation's mandatory disclosure regime ensures that the banking industry delivers a relatively large flow of financial information.

    The disclosures are rather uniform across individual organizations and generally supply market participants with sufficient information about the magnitude of losses expected from impaired credit assets.

    By comparison, the disclosures of forward-looking information, which is related to the probability and magnitude of losses expected from the non-impaired asset portfolio, are shown to be much scarcer or absent.

4. The statistical analysis of survey results finds voluntary disclosures unattractive to financially weak banks. It leads to the conclusion that given the present degree of protection of banks' creditors by the financial safety net, the voluntary disclosures are unlikely to assure the market has all the needed information about the credit risk of individual banking organizations.

    The analysis confirms that the business result briefs are relatively more driven by the information demand of market participants, but the content of the disclosure reports is predominantly shaped by the official requirements and lacks feedback from the information users.

5. Based on the results, the report suggests to:
    (1) retain the mandatory disclosure principle as an effective basis of the disclosure regime in the future;
    (2) make a mechanism of consensus-making over desirable disclosures an explicit integral part of the mandatory disclosure regime;
    (3) employ electronic filing of the disclosure reports with a publicly accessible centralized storage; and
    (4) augment and rebalance specific disclosure requirements toward enhanced disclosure of forward-looking information about future credit losses.

# Acknowledgements

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## I. Introduction

As the tidal wave of bank failures in late 1990s has settled down and the Japanese banking system has slowly turned to recovery, the nation again faces the long-standing task of improving efficiency of its financial sector. It is no more the problem of removing regulatory constraints and building conditions for new advances in financial technology. Instead, the society has got increasingly concerned about deficiencies in the core activity of managing bank credit risks. The nation's banking sector has been too slow in its adaptation to macroeconomic changes and continued to misprice loans by setting credit margins far below the level needed to cover credit costs (Oyama and Shiratori, 2001).

The failure of the bank management to adapt is rooted in the weakness of market discipline for the banks. It is apparent that the bank management will continue to drive the industry to new insolvencies if the bank creditors and other market participants do not start strongly discriminating among the banks upon their performance. The market has certainly got more focused on distinguishing between "good banks" and "bad banks", after the banking crisis showed the government was no more willing to extend its implicit protection to the entire banking industry. But it is obvious that to eventually succeed in getting incentives right, influence of the market over the banks' managerial decisions needs to be further strengthened.

The importance of effective market discipline for the future recovery of the Japanese banking sector propels the issue of bank transparency to a list of prerequisites for developing a high-quality financial market. Bank transparency, in this respect, is defined as public disclosure of reliable and timely information that enables users of that information to make accurate assessment of a bank's financial condition and performance, business activities, risk profile, and risk management practices (BCBS, 1998, p. 4). Market discipline benefits from public disclosure, because it improves the ability of market participants to make informed decisions: It allows more accurate assessment of a bank's financial strength and performance, increases the credibility of information disclosed by the bank, demonstrates its ability to monitor and manage risk exposures, and reduces market uncertainty (pp. 5-6).

The last decade has witnessed a continuous debate over the sufficiency of disclosure in the Japanese banking sector. And it is quite obvious why the discussion has predominantly been focused on rebalancing and enhancing disclosure requirements set up by the authorities. Public disclosure of bank information, *per se*, does not necessarily imply government intervention with mandated disclosure rules, because banking organizations have incentive to voluntarily disclose to the public. A role for mandated disclosure rules arises as far as the incentive is weakened by the presence of the government policy of financial safety net. That is, the mandated rules should aim at bringing bank disclosures back to the socially desirable, optimal level.[1] Still, the extent of the optimal disclosures is not very clear both in general and in the specific cases of individual

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[1] For further elaboration on this point refer to Frolov (2004b). This paper and another background study for this report (Frolov, 2004a) are available from the author upon request.

banks. Hence, finding the optimum is a precondition for the bank disclosure regime to contribute to enhancing the quality of the nation's financial market.

The experience of recent years shows the problem of finding an optimal form for the national disclosure regime has grown into an acute issue of significant practical interest. In early 1990s the authorities started putting pressures on the industry to disclose more information on risks arising from the banks' lending activities. The industry was generally reluctant to disclose open new indicators of credit risk, expressing its concern that the indicators may mislead the public, since they do not reflect the true risk exposure and lack comparability across individual banks. The pressures, however, mounted as the banking crisis became acute. New disclosures were hectic and just fueled further suspicion of the general public that the banks were still hiding the true degree of credit quality deterioration. Although the financial safety net prevented major agitations among depositors, as a result, many banking organizations have switched to active management of mass-media and reputation risks and started seeking ways to improve their disclosures.

These developments coincided with the Basel Committee's work on the new capital adequacy framework. Its adoption in June 2004 set a deadline for the implementation of the Japanese national version of the improved capital adequacy regulation. Since the new framework includes explicit disclosure requirements, it equally means that the regulators and the industry should have scrutinized the existing disclosure regime and developed its revised version by the end of 2006.

In this report we shall address the challenge and examine the credit disclosure activities of banking organizations in Japan. Our primary focus will be on analyzing the quality of disclosed information about the banks' lending assets and investigating the strong and weak sides of the present disclosure regime. Our ultimate intention in this study is to formulate specific suggestions on what is needed to improve bank transparency in lending activities.

The structure of the report is as follows. In the next section we review the disclosure practices in the Japanese banking system. Section III analyzes the quality of information conveyed by the conventional indicators of credit risk. Sections IV and V survey credit risk disclosures on the level of individual banking organizations and develop a proposal to enhance the present disclosure regime. Section VI concludes.

## II. Disclosure practices by banking organizations in Japan

The present disclosure practices of the Japanese banking organizations include those based on legal requirements, rules set by industrial organizations and stock exchanges, and voluntary actions. Table 1 summarizes the mandatory disclosure regime for the main types of banking organizations in Japan – commercial banks, credit associations, and credit cooperatives. Commercial banks are joint stock companies licensed for the banking business under Art. 4 of the Banking Law.[2] Credit associations (also called the *shinkin* banks) and credit cooperatives are smaller, cooperative-type banking organizations chartered and regulated under their industry legislation. The associations and cooperatives conduct deposit-taking, lending and other basic banking activities, and the only material difference from the traditional commercial banking is the presence of restrictions either on their geographic location or on the types of their customers.

### 2-1. General mandatory disclosures

The first type of the mandatory disclosures reflects the general disclosure requirements for publicly held joint stock companies. Since the banking legislation requires banks to have at least ¥1b (about $9m) of own capital, all the commercial banks meet the large company criteria under the Commercial Code and, thereby, must follow its special auditing and disclosure rules for financial statements. In particular, Art. 283 para. 4 of the Code stipulates the requirement for large joint-stock companies to make a public notice of their balance sheet and income statement immediately after the general shareholder meeting.

The nature of business transactions of the commercial banks, however, is different from that of ordinary non-financial firms, and for that reason Art. 20 and 57 of the Banking Law rule that such public notices have to be made in a daily newspaper and the disclosed financial statements should have a special reporting format as stipulated in the Banking Law Enforcement Ordinance. This disclosure requirement developed at an early stage as an effort to convey information about publicly held companies to potential investors in their stock or debt. The prescribed reporting format (Forms 6-8 of the Ordinance) is rather brief and contains just major entries from the full version of a bank's balance sheet and income statement reporting forms.

The credit associations and credit cooperatives are not required to make public notices of their balance sheets and income statements, since they are closed-firms by the nature of their corporate organization. Still the industry legislation of both associations and cooperatives mirrors the Commercial Code in that it stipulates disclosures aimed at the existing association (cooperative) members and creditors. As a result, the owners and creditors of all the three types of banking organizations are entitled to inspect and copy the annual business reports and (full-scale) financial statements of their organizations.

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[2] Besides the commercial banks, there is a number of banking organizations chartered or licensed under special legislation – such as long-term credit banks, trust companies, etc. They all are joint-stock companies, and all the disclosure requirements of the Banking Law and Commercial Code equally apply to them.

# Table 1. Mandatory disclosures by banking organizations in Japan

| Disclosure practice | Commercial Banks | Credit Associations | Credit Cooperatives |
|---|---|---|---|
| 1. Public notice of the balance sheet and the profit and loss statement in a daily newspaper within 3 months after the lapse of each business year | BL Art. 20, 57[1]; BL Ordinance Art. 19 | — | — |
| 2. The business report, balance sheet, profit and loss statement, profit appropriation statement (or loss disposition statement), schedules, and auditing report are kept in the main office for 3 years and other offices for 3 years and offered for inspection and copying by shareholders (credit association / cooperative members) and creditors upon their request. | CC Art. 282, BL Ordinance Art. 20 | CAL Art. 37, para. 8~9; CAL Ordinance Art. 5-2 | LFBC Art. 5-4, para. 8~9; LFBC Ordinance Art. 5-3 |
| 3. Explanatory documents stating the matters relating to the circumstances of business and property (the "disclosure report") are prepared within 4 months after the lapse of each business year and along with the balance sheet and the profit and loss statement kept in the business places and offered for the inspection of the public for one year. | BL Art. 21, para. 1; BL Ordinance Art. 19-2, 19-4 | CAL Art. 89; CAL Ordinance Art. 20-2, 20-4 | LFBC Art. 6; LFBC Ordinance Art. 22-2, 22-4 |
| 4. The amounts of asset risk categories (sound assets, assets requiring special attention, risk assets, and irrecoverable or valueless assets after asset disposition upon semiannual and annual closing of books) are announced and stated in the disclosure report, which is prepared to offer for the inspection of the public. | FRL Art. 7; FRL Ordinance Art. 5~6. | FRL Art. 7; FRL Ordinance Art. 5~6. | FRL Art. 7; FRL Ordinance Art. 5~6. |
| 5. A report stating the important matters relating to the circumstances of accounting and other content of business operation of the company,[2] and other matters necessary and appropriate for protecting public interests and investors (the "securities report") is submitted annually (semiannually) to the Prime Minister within 6 (3) months after the lapse of each business year (of the first half of each business year). The Prime Minister keeps the securities report for 5 years (3 years) and offers it for the inspection of the public. | SEL Art. 24, para. 1; Art. 25, para. 1; BED Ordinance Art 15. | — | — |
| 6. Brief business results (annual, semiannual, and quarterly), business projections, important corporate decisions and events of the company are filed with a stock exchange in a timely manner and made available for the inspection of the public. | TSE-TDR Art. 2, 2-3.[3] | — | — |

Notes
1. The Commercial Code (Art. 283, para. 4) and the Law for Special Exceptions to the Commercial Code Concerning Audit, etc. of Kabushiki Kaisha (Art. 16, para. 2) contain a similar disclosure requirement for joint-stock companies with the own capital of ¥500m and higher. The requirement is binding for all commercial banks as they fall in the large joint-stock company category according to the minimal capital requirement of the Banking Law (Art. 5, para. 2).
2. The reporting requirement applies to companies whose securities are listed on a stock exchange or by a securities dealers' association, or a registered offering of whose securities has been made.
3. Similar rules exist on all other Japanese stock exchanges.
4. Abbreviations: BL – the Banking Law; BL Ordinance – the Banking Law Enforcement Ordinance; CC – the Commercial Code; CAL – the Credit Association Law; CAL Ordinance – the Credit Association Law Enforcement Ordinance; LFBC – the Law Concerning Financial Business by Cooperatives; LFBC Ordinance – the Ordinance to Enforce the Law Concerning Financial Business by Cooperatives; FRL – the Financial Revitalization Law; FRL Ordinance – the Financial Revitalization Law Enforcement Ordinance; SEL – the Securities and Exchange Law; BED Ordinance – the Cabinet Ordinance Concerning the Disclosure of Business Enterprises, etc.; TSE-TDR – the Tokyo Stock Exchange Rules on Timely Disclosure of Corporate Information by Issuer of Listed Security.

The business reports include a brief description of business activities, annual changes in business offices, personnel and management, and key indicators of deposits, lending, and securities holdings. Information covered by this disclosure requirement is not unique, as it typically becomes available via the disclosure reports (under Art. 21 of the Banking Law) one to two months later. Nevertheless, banking organizations seem to be reluctant to disclose the statements and the business report to persons other than those entitled by the law.[3]

## 2-2. Disclosure reports

The third type of the requirements in Table 1 is by far the most comprehensive mandatory disclosure aimed at a financially unsophisticated general public. Art. 21 of the Banking Law (and corresponding parts of the credit association and credit cooperative legislation) requires banks to prepare explanatory documents stating the circumstances of business and property and offer them for public inspection at bank branches.

The so-called disclosure reports were introduced in 1982 after a recommendation made by the Financial System Research Committee (FSRC), a consultative body to the Prime Minister.[4] Initially, pressures by the Japanese Bankers Association (JBA)[5] led to the adoption of a declarative disclosure requirement (Yamori, 2002): The banks had complete discretion over types of disclosed information and there were no sanctions against failure to comply with the requirement. But three years later the FSRC suggested that banks should go beyond disclosing only their operating performance and should make public information on their financial soundness. The Committee also pointed to the poor comparability of the disclosure reports and recommended to set up a uniform disclosure standard for all types of banks. In response to the recommendations, in September 1987 the JBA issued a set of 52 minimum disclosure requirements. Although the Uniform Disclosure Standard (UDS) was developed on the basis of the disclosure reports of major banks, its content strongly resembled the format of the securities report filed by banks under the Securities and Exchange Law.[6] It included regular accounting information, but indicators of bank soundness were limited to the capital adequacy ratio, operating margin and interest margin,[7] deposit-loan and deposit-securities ratios.

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[3] In March 2004, the author requested the inspection of recent business reports in branches of a credit association and a credit cooperative located in Tokyo metropolitan area. In both cases, branch managers refused to grant access before the author became a member of the institutions.

[4] The peculiarity of the decision-making process in the Japanese government is that decisions made by ministries or individual officials typically follow related recommendations by one of the government consultative bodies. The recommendations are not binding legally, but deliberations in the consultative bodies often help to develop a consensus among the government, regulated entities, and other related parties. Even if a party is dissatisfied with an outcome of the deliberations, typically it turns out to be difficult to change something, once a recommendation has been issued.

[5] Before April 1999, known as the Federation of Bankers' Associations of Japan (FBAJ).

[6] It is no surprise since the securities report's format had also been developed by the JBA.

[7] Banks could omit the margin indicators at their discretion.

During the next decade, the UDS went through several rounds of extension – mostly in the indicators of asset quality and risk:[8] In 1993, after an interim report by the FSRC recommended improvements in the disclosure of loan quality (and the Ministry of Finance, the banking regulator at that time, made a similar request), the JBA reluctantly adopted disclosures of bankrupt and non-accruing credit exposures in the banks' loan portfolios.[9] It also made mandatory the disclosure of the net operating profit, market price information about securities, and loan loss allowances broken down by type.

Few years later, as the situation in the Japanese banking started aggravating, the national regulator got increasingly concerned with having the domestic disclosure regime for non-performing loans in line with the SEC's bank disclosure requirements adopted in the US. In 1995 the FSRC delivered the final report in which it insisted on disclosing not only impaired exposures but also positions that may affect profits in the future, and set a timetable for achieving the full NPL disclosure by all other types of banking organizations by March 1998. In response to the request, the JBA started disclosures of interest-exempt and other restructured loans, and the national associations of *shinkin* banks and credit cooperatives similarly introduced uniform disclosure standards for their members.

The large bank failures of 1997-1998 triggered further pressures and led to the full adoption of the US SEC's classification of loans for disclosure purposes (the so-called "risk-monitored loans") and ultimately to the replacement of the industry's UDS with explicit requirements in by-laws in 1999. The new legal rules made the disclosure reports truly mandatory (including penalties for the failure to comply),[10] but they brought, however, just minor qualitative improvements: Information on the maturity structure of deposit, loan and securities positions was added and some redundant data removed.

Despite the thorough legal requirements, the effectiveness of the disclosure reports seems to be rather mixed. First, as noted by Shiba (1996), information in the reports is difficult to comprehend by customers with low financial knowledge but considered insufficient by customers with some financial knowledge. This halfway feature of the official disclosure reports is reflected, for instance, in the emphasis by banking organizations on the so-called "mini-disclosure reports" – semiannual or quarterly leaflet-type in-branch handouts that contain just key indicators of financial soundness and very often accompanied by comics-based explanation.

Second, despite the uniform structure of reported information, the comparison of the

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[8] Other extensions boiled down to breakdown changes in the accounting reporting format and to the introduction of performance ratios (though readily computable from the data of the financial statements).
[9] Suggestions to start disclosing non-performing loans had been voiced long before the date, but the JBA was constrained by the lack of consensus among its members and officially opposed such suggestions arguing that they would undermine the financial order (Hoshino, 1996).
[10] For instance, Art. 63, para. 1-2 and 1-3 of the Banking Law prescribe up to 1 year of imprisonment and ¥3m of fines for the failure to comply with the requirements of Art. 20 and 21. Similar provisions exist in the industry legislation of credit associations and cooperatives.

disclosure reports is rather a challenging task in practice: Since the law demands the reports be available to customers only in branch offices, in many cases one cannot compare them without visiting branches of all banking organizations under consideration. Certainly, libraries of the national associations (e.g. that of the JBA) receive copies of the reports on a voluntary basis, and most banking organizations make the reports available on their homepages in the Internet. Still, as shown below, the reports are too often missing from these sources whenever there are financial difficulties or a major reorganization, their collection for meaningful comparison turns to be laborious, and access to the hardcopy library collections is very burdensome.

Third, the disclosure reports have surprisingly low level of recognition among bank customers. For instance, Yamori (2002) provides circumstantial evidence that customers' requesting inspection of the reports is so rare that it requires a while for the staff of a bank branch to find a copy.

## 2-3. Disclosures according to the Financial Revitalization Law

The fourth type of mandatory bank disclosures in Japan is solely related to the quality of credit portfolio. Since late 1998, the Financial Revitalization Law (FRL) and its Enforcement Ordinance have stipulated that all deposit-taking financial institutions shall annually and semiannually self-assess the quality of their credit assets, report the results to the authorities and make them public by stating in the disclosure reports.

"The FRL-disclosed assets" are the second type of mandatory disclosure of credit risk categories after the risk-monitored loans disclosed under the Banking Law. Although the FRL-disclosed assets are somewhat wider in scope and more realistic, they generally duplicate information conveyed by the risk-monitored loans and equally ignore collateral and other means of risk mitigation. The redundancy in the mandatory disclosure of credit quality comes from the nature of the Financial Revitalization Law. The legislation was enacted in the aftermath of large-scale bank bankruptcies to lay down a system of financial crisis management and permanent schemes of bank-failure resolution. Accordingly, the mandatory disclosures stipulated in this legislation aimed primarily at providing some objective criteria for resolution actions.

## 2-4. Securities reports

The reporting requirements under the Securities and Exchange Law apply only to companies that issue negotiable securities to the general public.[11] As of June 30, 2004, 118 commercial banks, 11 bank holding companies, and 6 trust companies have filed securities reports for financial year 2003 ended on March 31. They represent all domestically incorporated banks excluding 4 commercial banks and 10 trust companies, whose stock is held privately by

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[11] A company is granted exemption for the report filing obligation if its registered securities are held by 25 or less holders (Hamada and Matsumoto, VIII 1-39).

their parent companies.

The reporting requirements of the Securities and Exchange Law are typically not binding for the cooperative-type banking organizations, because their securities are not negotiable. The only exception is the *Shinkin* Central Bank, a central institution for the credit association network: It also files a securities report, for it issues preferred fund certificates listed on the Tokyo Stock Exchange.

The commercial banks file securities reports that follow a reporting format specific to the banking industry. The reporting format is developed by the JBA and during the last two decades has gone through changes similar to those of the disclosure report. At present, the annual securities reports of banks include: the full-scale version of financial statements and attached schedules; a breakdown of costs and revenues by type of financial activity and by (domestic vs. foreign) place of origination; an itemized breakdown of business costs; year-end and year-average figures of deposit, loan and securities holdings broken down by the type of customer (industry) and transaction; itemized regulatory capital, etc. As a rule, the data is reported on the consolidated basis, but for the sake of comparison the reports also contain references to non-consolidated figures and to the results of previous periods.[12]

The format of the securities report seems to influence the way the commercial banks present information in the disclosure reports: The additional ("voluntary") disclosures provided by banks in their disclosure reports beyond the minimum requirements of the Banking Law Enforcement Ordinance are very similar to the required entries of the securities report's format. Certainly, unlike the disclosure report, the banks cannot experiment with the layout of the securities report and are not free to add new entries to its reporting format. Still, from the standpoint of bank risk assessment, the information content of a bank's disclosure report typically mirrors that of its securities report.

Furthermore, the securities report outperforms the disclosure report in the accessibility of the information to market participants. Since the former one is filed with the authorities, its users enjoy the benefits of low-cost centralized access to the information. In particular, the securities reports are available for public inspection as hardcopies at all the domestic stock exchanges and the MoF regional bureaus. But what is far more important, they are also available in an electronic form either via commercial information vendors, or recently via the EDINET, an Internet-based electronic disclosure system run by the government. The disclosure reports, on the contrary, do not allow centralized access, and this feature makes comparison of their information across multiple banks rather costly. Since comparability is among the essential requirements to credit risk disclosure, the feature explains why the present disclosure regime of commercial banks should be viewed as practically more effective than that of the credit associations and cooperatives that do not convey their disclosed information in a centralized way.

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[12] The semiannual report is based on the provisional settlement of accounts at the end of September. For that reason, its format is less itemized and misses some non-financial data.

## 2-5. Business result briefs

The last type of disclosures listed in Table 1 is mandatory only for commercial banks and bank holding companies whose stock is listed for trade on one of the domestic stock exchanges. As of June 30, 2004, 95 listed commercial banks and bank holding companies have announced their brief business results for financial year 2003 at major stock exchanges and filed them through the stock exchange electronic disclosure network. Nevertheless, the same information is regularly released by other banks on a voluntary basis. For instance, 23 non-listed commercial banks have also briefed mass media on their business results in FY 2003 exactly matching the released information and its presentation format to those of the disclosure requirements at stock exchanges.[13]

Information released at stock exchanges encompasses both regular briefs of business results and irregular disclosures of changes in business result projections, important corporate decisions and material events. The regular disclosures have their origin back in the 1970s when an association of financial journalists accredited to the Tokyo Stock Exchange (TSE)[14] requested the listed companies to supply business result information according to a pre-specified format. Soon thereafter, the TSE itself included the reporting form into its manual for the listed companies. Starting August 1998, the business result briefs are also released in an electronic form through the TDnet, a public access computer network which is run jointly by all the domestic stock exchanges (excluding the Osaka Stock Exchange). Furthermore, since September 1999 the TSE and other exchanges have introduced mandatory rules for timely disclosure of important information by the listed companies and explicitly required them to do it via the TDnet.

At present, the press is briefed on the annual (semiannual) business results of a commercial bank immediately after the results are approved by its board of directors. A typical announcement consists of three parts: (1) a one-page brief of financial results, (2) supplementary information, and (3) explanatory materials. Strict requirements to content exist for the first part only. The first page contains data on the operating and net profit, return on equity, total and net assets of the last two business years and profit projections for the next business year. The page is formed on the basis of an entry form in the TDnet.

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[13] Only 2 other non-listed commercial banks released information about their business results in FY 2003 with significantly different presentation format.

[14] The so-called "journalist clubs" are a phenomenon specific to the mass-media in Japan (and South Korea). They are formed as professional clubs of journalists accredited to the press-rooms of public institutions – government ministries, political parties, economic organizations, etc. On many occasions, participation in press-conferences, etc. held at these public institutions is limited to the members of corresponding journalist clubs. The clubs have rotating secretaries who give approval for the organization of press conferences inside the clubs and communicate in advance with the information-releasing parties about topics the journalists are interested in. The TSE serves as a basis for the "*Kabuto* Club", but questions for the press conferences of large commercial banks are often originated from the "*Nichigin* Club" accredited to the Bank of Japan.

The supplementary part includes qualitative information, financial statements, and notes on changes in the top management. There is no required format for the qualitative information; instead, stock exchanges suggest possible topics for discussion. As a general tendency, in this part commercial banks briefly discuss all the suggested topics but change their presentation layout depending on the emphasis they want to make.

The explanatory materials are those actually used during business result announcements. There are no mandatory rules for such materials, but comparison across multiple organizations reveals that core information content of the materials is quite similar and follows a common presentation format. In fact, the information has two distinct parts usually referred to as the common and additional questions. The former one seems to be a result of some sort of coordination by sectoral associations of Japanese bankers, and the latter one is related to a questionnaire sent to large banks by the "*Nichigin* Club", an association of financial journalists covering banking organizations.[15] Although the banks are free to choose what questions to answer, and whether or not to use the suggested tabular forms, they tend to closely watch their peers' presentations and, as a result, to provide core information according to an industry-wide *de facto* standard.

By information content, the core data of the annual and semiannual[16] business result briefs is close to that of disclosure reports or securities reports. Nevertheless, the business result briefs are an important element of the present disclosure regime. First, they appear several months before other disclosures. Second, they have high comparability and allow low-cost centralized access by market participants. Third and potentially most important, the banks have discretion over what to disclose above the minimum requirement, but unlike disclosure reports there is also a peer competition effect that partially improves incentives for voluntary disclosure.

## 2-6. Voluntary disclosures

Voluntary forms of disclosure among the Japanese banking organizations are strongly

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[15] To confirm the observed tendencies, the author sent inquiries regarding the explanatory materials to the sectoral banker associations, several banks, and the *Nichigin* Club. By the time the report is prepared, the only response has been received from the *Nichigin* Club. According to it, the questionnaire aims at supplying financial journalists with exact figures when they prepare their reports, and thus it reflects the mass media's areas of interest. The *Nichigin* Club presents the questionnaire only to the city and long-term credit banks that give their corporate presentations of financial results in the Club. Although all other banks give press-conferences at their corporate headquarters, many of them also include answers to the questionnaire to their explanatory materials. Apparently, the banks regard the questionnaire as reflecting the locus of mass media concern and use it to identify disclosure demand.

[16] Since 2002, the commercial banks have also started disclosing their brief results for the first and third quarters of business year. The JBA's guidelines suggest that banks show the following quarterly data: the FRL-disclosed assets, capital adequacy ratio, market pricing of securities and derivatives, and other qualitative information deemed necessary. Since April 2004, the TSE and other domestic stock exchanges have also made the quarterly disclosures mandatory for all the listed firms. Their minimum requirements include the disclosure of the quarterly sales, operating, current and net profit, quarter-end gross assets and equity capital. At present, the quarterly disclosures are really brief, and it is yet to be seen whether they will develop into a meaningful information source from the standpoint of credit risk assessment.

influenced by the prevailing type of information users. Credit associations and cooperatives emphasize the use of mini-disclosure reports and other in-branch "propaganda" leaflets targeted at the general public with low financial knowledge.[17] Being limited to these customers as the only source of funding, the cooperative-type banking organizations focus on persuading local communities and neighborhoods of their financial soundness and low risk. Accordingly, in their voluntary disclosures they use clear-cut figures and soundness indicators, which are usually played up by the mass media, and take steps to build a positive image in the customers' eyes.

The commercial banks also use these voluntary disclosure tools, but they typically add more information content and make the mini-disclosure reports closer to an abridged version of the mandatory disclosure reports. In addition, the banks emphasize disclosures targeted at the individual and institutional investors in their equity capital. These investor-relation (IR) tools include regular company-presentation meetings, press releases, etc.

Unlike the voluntary disclosures targeted at the general public, the explanatory handouts distributed at the presentation meetings (and later posted at the banks' websites) tend to contain detailed data and forward-looking information, which is not available from the mandatory disclosure sources. The usability of this information for regular credit risk assessment is, however, somewhat limited, because it lacks comparability and may be difficult to obtain without attending such presentation meetings.

When using the IR tools, the commercial banks exhibit clear differences from the mainstream of Japanese firms. A recent opinion survey of 3655 publicly-traded corporations conducted by the Japan Investor Relation Association (JIRA, 2004) has showed that, when compared to other firms, Japanese financial institutions (mostly large and medium size banking organizations) are more concerned with conveying their business strategy and inviting long-term investors, and relatively less focused on achieving an appropriate price level of their stocks. In particular, a notable emphasis is made on having company-presentation meetings targeted at individual investors, because the financial institutions are eager to increase the number of individual shareholders and to assure the long-term nature of stock ownership.

Responses to the survey also indicate that the financial institutions tend to use the IR activities for the purpose of risk management in public relations: They do not simply make more steps towards early disclosure of data on their financial soundness, but also more strongly monitor the web for the presence of unfavorable rumors.

Finally, the survey indirectly confirms that financial institutions are generally more active in disclosure than publicly traded corporations on average: The annual cost of investor relation activities among financial institutions is 43% higher than IR costs paid by an average respondent firm of the same size.

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[17] Recently, credit associations have started publishing electronic versions of the materials at their websites. Credit cooperatives are generally less active in this respect.

## 2-7. Comparison and discussion

Table 2 summarizes the present situation in information disclosure by the Japanese banking organizations. The mandatory disclosures in the annual disclosure report and the securities report are intended mostly for the general public (either depositors, or investors) and supply information about the current period results in comparison with performance during the past 1 to 4 periods. The disclosure report targets mostly protected creditors and typically demands much time and effort if to be used for comparison across many organizations. For that reason, the banking organizations have weak incentives for voluntary disclosure in these reports beyond the minimal legal requirements. The format of the securities report leaves no place for the voluntary disclosures at all.

The mini-disclosure reports and similar types of information aim at filling gaps in the mandatory disclosures: Their content is timelier and takes better account of the financially unsophisticated audience. Besides the improved periodicity, however, the mini-disclosure reports add no much new information and also suffer from insufficient incentives for active voluntary disclosures.

Originally, the business result briefs were no more than routine announcements of the current business performance by commercial banks. But recently, the combination of the ongoing crisis in the industry and relatively good comparability of the briefs has produced peer competition and propelled the banks to active management of mass media and reputation risks in these voluntary disclosures. Although the banks are still generally reluctant to disclose any information, they are also strongly concerned with the risk of being left behind the average level of disclosure in their peer group and the corresponding risk of being unfavorably publicized by the media in the volatile financial environment. This, in turn, necessitates active steps to augment the information available through the specialized media and analyst reports, and to convey to investors the banks' own view of their business condition.

On balance, the combination of differences in mandatory requirements and funding sources explains why the commercial banks produce a larger flow of both past/current and forward-looking information than the cooperative-type banking organizations. Although large urban credit associations have recently made steps to more active disclosures, the incentive for voluntary disclosure among credit associations and cooperatives is much weaker than among the commercial banks.

**Table 2. Comparison of the main types of information disclosure by banking organizations in Japan**

| Disclosure type | Applicability | | Legal (contractual) requirement | Prevailing type of information | Periodicity | Targeted information users | Low-cost (centralized) access to information | Incentives for active voluntary disclosure |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Commercial banks | Coop.-type organizations | | | | | | |
| Disclosure reports (BL, Art. 21) | Yes | Yes | Yes | Current and past information | Annually | General public (depositors) | No (partial²) | Weak |
| Securities reports | Yes | No | Yes | Current and past information | Semiannually | Investors | Yes | Not applicable |
| Mini-disclosure reports | Yes | Yes | No | Current information | Semiannually and quarterly | General public (depositors) | No (partial²) | Somewhat weak |
| Business result briefs | Yes | No | No¹/Yes | Current and forward-looking information | Annually and semiannually | Mass media and investors | Yes (partial²) | Somewhat strong |
| Company-presentation (IR) meetings | Yes | No | No | Current and forward-looking information | 1-4 times a year | Investors and mass media | No (partial²) | Somewhat strong |

Notes:
1. For the most part of disclosed information.
2. At corporate web-sites

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## III. Disclosure of conventional indicators of bank credit risk

Among the credit risk information disclosed by banking organizations, several types of data, such as the levels of non-performing loans, loss provisioning and loan write-offs, command especial interest of the market participants. The rate of general allowance for doubtful loans may be an important source of forward-looking information about future credit losses, the rate of the specific allowances conveys insights into the value of impaired but not yet collected loans, whereas the rates of non-performing loans and loan write-offs may augment the allowance rates if their levels get distorted by banks' underprovisioning (Frolov, 2004a). The usability of these conventional indicators, however, may be strongly influenced by prevailing accounting practices, regulatory policies, taxation rules, and other institutional factors. This section will explore the quality of information conveyed by such indicators in the Japanese institutional environment.

### 3-1. Credit quality classification systems

At present banking organizations in Japan use three systems of credit quality classification: Two of them (the Risk-Monitored Loan classification and the FRL-Disclosed Asset classification) are used for the purpose of official reporting and public disclosure, and the third one (asset classification under the Self-Assessment Framework) is used internally for the purpose of calculating officially required provisioning and allowed tax-exempt write-offs. Figure 1 compares the three classification systems.

As discussed above, the Risk-Monitored Loan classification is an early disclosure requirement stipulated in the Banking Law Enforcement Ordinance and modeled after the disclosure requirement for banks by the US SEC. In this classification framework, both "Loans to borrowers in legal bankruptcy" and "Overdue loans" represent impaired credit exposures. The two are different in whether or not formal legal procedures have been taken upon bankruptcy. "Loans past due three months or more" and "Restructured loans" represent intermediate classification categories between sound and impaired exposures. The specific feature of this classification system is that it deals only with bank loans and ignores other types of credit exposures, such as securities loaned, foreign exchanges, suspense payments, etc.

By comparison, the classification system envisioned in the Financial Revitalization Law covers all the types of impaired credit exposures. Another difference of the latter system is that the decision on whether or not an asset is ultimately impaired is not necessarily linked to the fact of formal legal actions taken against the borrower. In all other respects, the two classification frameworks are the same, and disclosures based on them convey largely the same information.[18]

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[18] As mentioned above, this overlapping of disclosure requirements comes from the fact that the latter classification system was established as an emergency response to the banking crisis and used for decisions on whether or not a banking organization should be granted public funds.

**Risk-Monitored Loans**

| (Loans) |
| --- |
| Loans to borrowers in legal bankruptcy[2] (D) |
| Overdue loans[3] (C) |
| Loans past due 3 m or more (B) |
| Restructured loans[4] (A) |
| (Sound loans) |

**FRL-Disclosed Assets**

| (Loans) | (Other assets)[1] |
| --- | --- |
| Unrecoverable or valueless assets[5] (D) | |
| Risk assets[6] (C) | |
| Loans requiring special attention[7] (B) | |
| Sound assets (A) | |

**Asset Classification by Self-Assessment**

(Loans + Other assets)[1]

| Classification by borrower | portion secured by superior collateral (guarantees)[12] | portion secured by other-than-superior collateral (guarantees)[13] | remainder of the appraisal value of collateral (guarantees) | portion not secured by collateral (guarantees)[14] |
| --- | --- | --- | --- | --- |
| Bankrupt borrowers[8] (e) | I | II | III | IV |
| Effectively bankrupt borrowers (d) | I | II | III | IV |
| Borrowers in danger of bankruptcy[10] (c) | I | II | III | III |
| Borrowers that need attention[11] (b) | I | II | II | II |
| | I | II | II | II |
| Normal borrowers (a) | I | I | I | I |

*Classification by collateral[14]*

**Figure 1. Credit quality classification systems in the Japanese banking**

*Notes*: 1.Securities loaned, foreign exchange, accrued interest, suspense payments, customers' liabilities for acceptances and guarantees. 2. Of loans for which interest is not accrued due to long overdue, the loans claimed for disposal in accordance with the procedure laid down in law. 3. Loans for which interest is not accrued due to long overdue and which do not come under "loans to borrowers in legal bankruptcy" and "restructured loans". 4. Loans for which contract conditions are revised to provide specific concessions that benefit borrowers in financial difficulties, such as exemption from interest payments, deferment of interest payments, deferment of principal payments, and renunciation of financial claims. 5. Assets to "bankrupt or effectively bankrupt borrowers" under the self-assessment framework. 6. Assets to "borrowers in danger of bankruptcy" under the self-assessment framework. 7. Loans past due three months or more, and "restructured loans" under the risk-monitored loan classification framework. 8. Borrowers who are legally and formally bankrupt. 9. Borrowers whose businesses are in a critical situation with no possibility of recovery (borrowers who are virtually insolvent and have long overdue payments). 10. Borrowers whose businesses are problematic, for example, being exempt from interest payments, and borrowers who have difficulties in repaying principal, such as those with overdue loans and those whose business conditions are weak or unstable due mainly to large net losses. 12. May also include the portion recognized as collectible from liquidation dividends, etc. in case of bankruptcy. 13. The difference between the appraisal value and the disposal value of both superior and other-than-superior types of collateral (guarantees). 14. I, II, III, and IV denote classification categories under the self-assessment framework.
*Source*: based on Bank of Japan (2001)and FSA (2004a) with minor alterations by the author.

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The third classification system reflects rules established by the banking supervisor in order to introduce an industry-wide standardized approach to banks' self-assessment of asset quality and to their calculation of necessary loss allowances. The classification system is stipulated in "Financial Inspection Manual" issued by the Financial Service Agency (FSA), the Japanese banking supervisor.[19]

Unlike the other two systems, the self-assessment classification takes into account the presence of collateral and guarantees. In particular, the assets are classified in two steps: At first, a bank classifies its obligors into six risk groups, and then divides exposures in each risk group into four portions (risk categories) depending on the extent of protection by collateral or guarantees; finally, summing up by risk category across all borrower groups gives a rough breakdown of the assets by the level of expected default losses.

Figure 1 suggests that all three classification systems convey similar information about the distribution of impaired credit exposures among risk groups (i.e., exposures above a borderline between groups (b) and (c) in Figure 1).[20] Furthermore, in all the three systems the impaired assets are classified according to uniformly set *pro forma* criteria. This implies that the classification results should not be strongly affected by possible differences in the classification policies of individual banks, and the figures should be roughly comparable across banks, as long as the banks have the same treatment by regulatory authorities during inspections.

At the same time, the Self-Assessment Framework improves on the other two systems when it comes to the classification of non-impaired assets: The self-assessment procedure implies classification of obligors and not their obligations; therefore, whenever a borrower defaults on one claim, all her other claims will be classified as if she defaulted on them as well (for instance, all the claims will go to "need special attention" group, if just one of them has been past due for more than three months or restructured). The treatment can be justified on the grounds that the risk of impairment depends on a borrower's condition, and thereby economically it is roughly the same for all claims on the borrower regardless her actual

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[19] Legally, the manual is just a uniform guideline for inspectors when they examine banking organizations' approach to risk management and the accuracy of their assessment of asset quality. The results of asset classification and loss provisioning, however, are a very sensitive issue for banks, as they affect their (regulatory) capital adequacy ratio and may trigger the application of the prompt corrective measures by the FSA. Accordingly, the banks can be effectively punished for their self-classification results' being softer than those delivered by inspectors during on-site examinations, and for that reason, the manual serves as a *de facto* standard for the banks' self-assessment activities.

[20] Correspondence between groups (C) and (D) of the FRL-Based system and groups (c) and (d)+(e) of the Self-Assessment Framework is explicitly laid down in Inspection Manual. In addition, since group (B) of the FRL-Based system is referenced in the manual to combined groups (A) and (B) of the Risk-Monitored Loan system, the borderline between impaired and non-impaired credits is roughly the same for all the three classification systems. Furthermore, a uniformly binding definition of the borderline is given by the Japanese Institute of Certified Public Accountants (JICPA) in its "Practical Guidelines for Accounting Standard Concerning Financial Instruments". In particular, "borrowers in danger of bankruptcy" are interpreted as those who have long overdue of payments (roughly for 1 year or more) or have problems in the present financial condition (e.g., such as *de facto* negative capital).

performance on particular claims. By comparison, the FRL-Based and Risk-Monitored-Loan systems are focused on classification of individual claims and may fail to correctly recognize some credits to risky borrowers, where the definition of a risk group is not referenced to obligors' condition. Consequently, the Self-Assessment Framework leads to more precise classification of (non-impaired) credit exposures.

Under the existing legislation, banking organizations in Japan are explicitly required to disclose asset classification results of the first two systems. The self-assessed asset classification is officially intended for internal use only. Nevertheless, its results are also made public by the majority of commercial banks, as well as by the largest credit associations. For instance, the self-assessed classification of assets by borrower risk group is present in 74% of business result briefs and 45% of disclosure reports of commercial banks for financial year 2002.

The tendency may have a twofold explanation. On the one hand, the legally required disclosures do not fully reflect the exposure to assets, which raise concerns but are not yet recognized as impaired. Since the size of this ("borrowers that need attention") risk group is important for explaining future dynamics of the default rate, disclosure of the group's size may help to calm down suspicions over the true state of credit quality. On the other hand, the disclosure of self-assessed risk classification categories also gives better understanding of the true exposure to the risk of credit losses. The legally required disclosures of the risk-monitored loans and FRL-based assets inform the public about the amount of non-performing loans (assets), which are generally a poor proxy for the risk of credit losses in individual banking organizations (Frolov, 2004a). In such a situation, the voluntary disclosure of the self-assessed risk categories may help to correct possible negative biases in the public's perception of a bank's riskiness.[21]

## 3-2. Loss provisioning and write-off information

As with asset classification, the basic premise of the loss provisioning regulation is that banking organizations calculate and establish loan loss allowance based on the results of their self-assessed asset classification and according to their own views on the likelihood and magnitude of losses in each risk category. In practice, however, the applied provisioning rates are also strongly driven by the guidelines of Financial Inspection Manual.[22]

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[21] A breakdown by risk category was disclosed in 57% of cases in which commercial banks disclosed their self-assessment data in business result briefs, and in 47% of cases they disclosed it in disclosure reports for FY 2002.

[22] As obvious from its wording, the manual is intended to give the FSA inspectors a benchmark for the minimal adequate level of provisioning while taking in account the specific conditions of a bank. The examination process implied in the document assumes, however, that the examined banks employ the same calculation procedure as that used in the benchmark calculations, and the inspectors are effectively targeted at checking whether or not each component of the provisioning formula satisfies corresponding minimum requirement laid down in the manual.

*– Provisioning rules –*

Figure 2 reports the provisioning guidelines laid down in the manual. Allowances for impaired credit exposures are set up as a specific ADL (allowance for doubtful loans) for each obligor and calculated taking into account existing collateral and guarantees. In particular, the banks are required to provide for the entire portion of bankrupt and effectively bankrupt exposures, which is not covered by the disposal value[23] of superior collateral (e.g., deposits, government and local authority bonds, bank debentures, prime-rating stocks, etc.), the disposal value of other types of collateral (e.g., real estate), and the portion of liquidation dividends deemed collectible in case of bankruptcy.[24] In the case of "borrowers in danger of bankruptcy", the banks similarly provide for the unsecured portion, but may use several alternative calculation schemes. The basic scheme suggests establishing allowance equal to a cumulative loss expected from the unsecured portion over three years, and generally refers to the historical loss experience as a basis for loss estimates.[25]

Allowances for non-impaired credit exposures are established as a general ADL for a borrower category and calculated without taking an explicit account of collateral and other risk mitigation tools. In the case of both "borrowers that need attention" and "normal borrowers", the calculation formula suggests establishing an ADL equal to a loss estimate calculated cumulatively on the basis of historical loss experience. The period of cumulative loss calculation is three years for "borrowers that need special attention", and one year for other non-impaired credit exposures.

*– Information quality concerns –*

On balance, in the present regulatory environment of detailed rules for loss allowance calculation and their enforcement by the banking supervisor, the observed ADL levels of the Japanese banking organizations are likely to deviate from the banks' best estimates of expected credit losses. First, the provisioning levels may be excessively driven by the historical loss experience and tend to neglect forward-looking information. This feature is likely to be especially distorting for credit risk information conveyed by the general ADL established for non-impaired credit exposures.

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[23] The disposal value is calculated as the product of collateral appraisal value and a weighting parameter. The weights are: 70% for real estate, 95% for government bonds, 70% for listed stocks, etc.

[24] To have a portion of the liquidation dividends included in Category II, the examined banking organization has to prove that their calculation is rational and collection is certain.

[25] The manual also suggests that historical loss rates should be corrected for future forecasts of changes in business conditions, etc., but it does not lay down rules of how to do it. At the same time, it drives inspectors to very conservative assessments: The manual explicitly stipulates that inspectors should check whether or not the loss estimates of the previous period were adequate as compared to the actually observed rate of losses, and if the correction of the historical rates in the previous period's loss estimation was sufficient. As a result, inspectors are more likely to take into consideration future forecasts suggesting an upward correction of loss rates than to consider those in favor of downward corrections.

**Loan write-offs and loss provisioning guidelines**

| Borrower category | Asset category | | | |
|---|---|---|---|---|
| | Nonclassified (I) | Category II | Category III | Category IV |
| Bankrupt and effectively bankrupt borrowers | Secured by superior collateral (guarantees) | Secured by other-than-superior collateral (guarantees) | 100% provisioning as specific ADL | 100% write-off or provisioning as specific ADL |
| Borrowers in danger of bankruptcy | | | Provisioning as specific ADL, as far as necessary | |
| Of which: Borrowers that need special attention | | | | |
| Borrowers that need attention | | | | |
| Normal borrowers | | | | |

| (Inspection Manual) | (the "Viewpoint"[11]) |
|---|---|
| The amount of allowance for (or/and direct write-off of) credit to a specific borrower $=$ The portion of the credit classified to Category III (or Category IV). | — |
| The amount of allowance for credit to a specific borrower (borrower group) $=$ (a) The portion of the credit classified to Category III $\times$ Cumulative expected loss rate[1] over a projection period[2] (or 3 years) $=$ (b) The portion of the credit classified to Category III – Collectible amount from cash flow[3] over a certain period[4] $=$ (c) The portion of the credit classified to Category III – Sellable value[5] $=$ (d)[6] The book value of the credit – The sum of discounted cash flows[7] over a certain period[4] | 70% of the portion of the credit classified to Category III |
| The amount of (general) allowance for credit to borrowers in the category $=$ (a) The amount of the credit in the borrower category $\times$ Cumulative expected loss rate[1] over a projection period[8] (or 3 years) $=$ (b)[6] The book value of the credit – The sum of discounted cash flows[7] over a certain period[9] | 15% of the portion unsecured by collateral or guarantees |
| The amount of (general) allowance for credit to borrowers in the category $=$ The amount of the credit in the borrower category $\times$ Cumulative expected loss rate[7] over a projection period[8] (or 1 year) | An appropriate amount[10] |
| The amount of (general) allowance for credit to borrowers in the category $=$ The amount of the credit in the borrower category $\times$ Cumulative expected loss rate[7] over a projection period[8] (or 1 year) | — |

**Figure 2. Loan write-off and loss provisioning system in the Japanese banking**

*Notes:* 1.The actual loss rate in the past. Assessed as the average (over at least three calculation periods) historical share of credit losses in the principal amount (or as the average product of bankruptcy probability (incidence) and the forecasted rate of non-collection), which is calculated cumulatively for a (calculation) period in the past corresponding to the set projection period. If necessary, may be corrected for future forecasts in light of changes in economic conditions, forecasts for business conditions in the industry etc. of the borrower, forecasts for local economic conditions in the business territory of the borrower, and other relevant information. 2.A period in the future deemed rational for loss projection. 3.The portion that is deemed certain of collection from the amount of current profits of the borrower (group of borrowers) adjusted for depreciation charges and other non-financial items. 4.A period of three years or a period of five years if the borrower has formulated a business improvement plan etc. 5.The rationally calculated sellable value of the credit. Applies to claims for which there exists a market for possible sale. 6.Advisably applied to large borrowers (i.e., borrowers with the credit amount of ¥10b and more). 7.The sum of cash flows relating to the collection of the principal amount of the credit and received interest on the credit. The cash flows are discounted using the originally contracted interest rate. 8.A period in the future corresponding to the average remaining term to maturity. 9.A period of five years ore less. 10.An appropriate amount calculated on the basis of the historical loss ratio taking into account the average remaining term to maturity. 11.Viewpoint on the Write-offs and Allowances in Association with Capital Injection (FRC, 1999).
*Source:* based on Bank of Japan (2001), FRC (1999), and FSA (2004b).

Second, the levels of provisioning for "borrowers in danger of bankruptcy", "borrowers that need special attention", and other "borrowers that need attention" can also be distorted if the suggested classification procedures of the manual are applied in too formalistic fashion. The formal parameters used to classify borrowers (e.g., their business performance) during inspections may be slow to show verifiable improvement, and this may temporarily create misclassification towards lower borrower categories.[26]

Other possible areas of concern over the usefulness of observed ADL rates as an indicator of credit losses include the issue of officially targeted provisioning levels and that of the ADL rates' comparability across banks. Table 3 reports results of statistical analysis of the two aspects. First, it does not find support for the former concern and, to the contrary suggests, that the provisioning rates vary widely across banking firms and are not tied to specific thresholds. Since the Financial Revitalization Committee (FRC) expressed its view on the adequacy of loss provisioning in banks which apply for public fund injection, some commentators (e.g., Sudo 2004, p.67) have asserted that the target levels announced by the FRC[27] have considerable practical influence over the provisioning decisions of banks. Data in Table 3, however, indicates that as of March 2003, the loss allowance for the exposure to "in danger of bankruptcy" borrower group (calculated as its ratio to Category III portion) was on average below the officially suggested level of 70 percent and varied between 33 and 100 percent. Similarly, the loss allowance for the exposure to "need special attention" borrower group (calculated as its ratio to the portion unsecured by collateral and guarantees) was not confined to 15 percent level and instead exhibited large fluctuations between 4 and 82 percent.

Simple regression analysis in Table 3, nevertheless, provides some support for the view of diminished ADL-rate comparability across banks. In particular, it suggests that, besides differences in credit risk exposure, the variation of provisioning levels across banks is likely to be influenced by bank-specific approaches to problem loan resolution.

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[26] Since Inspection Manual is intended to check the sufficiency of loss provisioning against a set of formal rules, inspectors will naturally tend to follow the rules unless there is well documented evidence supporting special consideration (e.g., classification to an upward category). In practice, it may mean, for instance, that even if a bank knows that a borrower is going to recover, it may still be forced to classify the borrower as "in danger of bankruptcy", simply because the recovery has failed to appear yet as an improvement in the borrower's business performance. This concern seems to be real in the case of the FSA's inspection manual. Circumstantial evidence to support this view is provided, for example, by the fact that in June 2002 (three years after the adoption of the inspection guidelines) the FSA delivered "Supplementary Volume of Financial Inspection Manual", which was aimed at preventing "the mechanistic and uniform application of the rules" and contained special case examples of classification of credit exposure to small businesses.

[27] 15 percent of the unsecured portion of exposure to "need special attention" borrowers and 70 percent of Category III exposure to "in danger of bankruptcy" borrowers, as showed in Figure 2.

**Table 3. Statistical analysis of loan loss provisioning in Japanese banks**

*Descriptive Statistics*

|  | Mean | Std. Deviation | Minimum | Maximum | No. observ.[1] |
|---|---|---|---|---|---|
| *TOT-AS* | 4.34 | 10.54 | 0.14 | 62.57 | 105 |
| *DANG-CIII* | 66.37 | 13.56 | 33.71 | 100.00 | 105 |
| *SP-AT* (%) | 15.89 | 8.19 | 1.27 | 40.65 | 105 |
| *SP-AT-UN* (%) | 29.58 | 17.38 | 4.46 | 82.66 | 99 |
| *NORM* (%) | 0.17 | 0.32 | 0.004 | 1.80 | 30 |
| *CAP-02* (%) | 9.20 | 1.68 | 4.60 | 14.00 | 105 |
| *DUM-SP-AT* | 0.14 | 0.35 | 0.00 | 1.00 | 105 |
| *DUM-CAP* | 0.79 | 0.41 | 0.00 | 1.00 | 105 |

*Bivariate Correlation Analysis (Pearson correlation coefficients)[2]*

|  | *TOT-AS* | *DANG-CIII* | *SP-AT* | *SP-AT-UNS* | *NORM* | *CAP-02* | *DUM-SP-AT* | *DUM-CAP* |
|---|---|---|---|---|---|---|---|---|
| *TOT-AS* | 1.00 | | | | | | | |
| *DANG-CIII* | 0.12 | 1.00 | | | | | | |
| *SP-AT* | 0.15 | 0.23*** | 1.00 | | | | | |
| *SP-AT-UNS* | 0.04 | 0.24*** | 0.81*** | 1.00 | | | | |
| *NORM* | 0.05 | 0.20 | 0.60*** | 0.19 | 1.00 | | | |
| *CAP-02* | 0.19** | 0.18** | 0.04 | 0.00 | 0.46*** | 1.00 | | |
| *DUM-SP-AT* | -0.11 | -0.29*** | -0.17** | -0.35*** | -0.21 | -0.08 | 1.00 | |
| *DUM-CAP* | -0.38*** | -0.18** | -0.25*** | -0.24*** | 0.01 | -0.51*** | 0.21** | 1.00 |

*Regression Analysis (Ordinary Least Squares)[2]*

|  | (I) | (II)[3] | (III) | (IV)[3] | (V)[3] |
|---|---|---|---|---|---|
| Regressors: | Dependent Variable: *DANG-CIII* | | Dependent Variable: *SP-AT* | | D.V.: *NORM* |
| (Constant) | 0.515 [.000] | 2.600 [.001] | 0.185 [.065] | 0.551 [.323] | 0.014 [.405] |
| *TOT-AS* | 0.001 [.415] | -0.009 [.002] | 0.000 [.451] | -0.438 [.982] | -0.000 [.227] |
| *DANG-CIII* | — | — | 1.868 [.084] | 0.447 [.972] | -0.007 [.078] |
| *SP-AT* | 0.301 [.060] | 0.013 [.971] | — | — | 0.020 [.129] |
| *NORM* | — | -15.178[.143] | — | 15.854 [.004] | — |
| *CAP-02* | 1.183 [.271] | -5.273 [.116] | -0.654 [.393] | -2.595 [.201] | 0.018 [.781] |
| *DUM-SP-AT* | -0.095 [.019] | -1.325 [.000] | -0.016 [.373] | -0.158 [.569] | -0.013 [.222] |
| *DUM-CAP* | 0.004 [.930] | -0.098 [.219] | -0.051[.073] | -0.043 [.373] | 0.002 [.477] |
| Adjusted R-sq. | 0.101 | 0.572 | 0.078 | 0.321 | 0.517 |
| F (zero slopes) | 3.346 [.008] | 6.545 [.000] | 2.756 [.023] | 2.968 [.024] | 5.429 [.001] |
| No. observ. | 105 | 30 | 105 | 30 | 30 |

*Variables*: TOT-AS – total assets (in ¥ trillion), *DANG-CIII* – provisioning rate for Category III of "In Danger of Bankruptcy" borrower group, *SP-AT* – provisioning rate for "Need Special Attention" borrower group, *SP-AT-UN* – provisioning rate for the unsecured portion of exposure to "Need Special Attention" borrower group, *NORM* – provisioning rate for "Normal" borrower group, *CAP-02* – capital adequacy ratio in March 2002, *DUM-SP-AT* – a dummy variable for *SP-AT* (0 if data by the FRL criteria, and 1 if by the self-assessment criteria), *DUM-CAP* – a dummy variable for *CAP-02* (0 if data by the international (BIS) adequacy standard, and 1 if by the domestic adequacy standard).

*Notes*: 1. There are 25 valid observations listwise. 2. P-values (based on heteroscedastic-consistent errors) are in parentheses; ** and *** indicate (one-tailed) significance levels of 5 and 1 percent respectively. 3. Corrected for a sample selection bias using the Heckman (two-step) procedure.

*Data Source*: the author' calculations by the business result briefs of commercial banks for financial year 2002 (as announced in May 2003).

As discussed above, the present regulatory regime ties provisioning rate to the historical experience with losses from credit exposure to a borrower group. In these circumstances, one can hypothesize about two factors that may be responsible for systemic provisioning-rate differences across banks. First, banks may have *different policies with respect to how long they are willing to support problem borrowers*: Some of them may stop lending (and thus force bankruptcy) at a first sign of problems, while the others may continue funding until the problems develop into clear insolvency. Accordingly, the former banks will have relatively higher loss rates observed in low-risk borrower groups and lower loss rate in high-risk groups compared to those of the latter banks.

Second, all the borrower classification groups are likely to have higher loss rates, if *a bank specializes on lending to borrowers who, by the nature of their business, have less repayment capacity upon default*, and lower loss rates if lending to borrowers with intrinsically higher repayment capacity upon default.

Based on the two hypothesized effects, one may expect the following association links among the borrower classification groups:

| Hypotheses about the factors of provisioning differences across banks: | Expected signs of statistical association between | | |
|---|---|---|---|
| | *DANG-CIII* vs. *NORM* | *NORM* vs. *SP-AT* | *DANG-CIII* vs. *SP-AT* |
| H1: Continuity of support | "–" | "+"/uncertain | "–"/uncertain |
| H2: Intrinsic borrower risk | "+" | "+" | "+" |

In Table 3 we use data available from the business result briefs of commercial banks to see whether the actual statistical association among by-group provisioning rates can be explained by one of the effects or by their combination. Having controlled for other factors deemed practically important for the provisioning policy of Japanese banks,[28] we observe that there is a tendency to (1) negative association between *DANG-CIII* and *NORM*, (2) positive association between *NORM* and *SP-AT*, and (3) positive association between *DANG-CIII* and *SP-AT*.

Obviously, the first result can be attributed to the presence of differences in the banks' willingness to support problem borrowers. The second and third results suggest that, in addition, the variation of provisioning rates across the banks are likely to be driven by differences in borrower-specific risk. The results are based on limited data, and thus they should be treated with much caution. Still, they indicate that in Japan the observed ADL rates are noticeably influenced by bank-specific policies and may deliver misleading conclusions if plainly used for comparison across individual banks.

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[28] *TOT-AS* (total bank assets) is intended to control for a possible bias due to the recent focus of supervisory inspections on larger banks. *CAP-02* (capital adequacy ratio in March 2002) controls for differences in banks' ability to absorb losses without coming under the threat of regulatory actions. *DUM-SP-AT* and *DUM-CAP* are dummies to control for possible biases due to measurement differences among the data.

Before the explicit provisioning rules were introduced in 1998-1999, the provisioning practices of the Japanese banking organizations were strongly influenced by tax considerations. Japan's Corporate Tax Law and related by-laws allow loss provisioning to be treated as a tax-exempt expense, but set up ceilings for the exemption so that all allowances beyond the ceilings are regarded as appropriation of (after-tax) retained earnings. According to the tax accounting rules, banking organizations can establish specific ADLs subject to the following ceilings for tax-exemption: 50% of expected loss from claims on borrowers against whom a formal legal action (bankruptcy, company reorganization, suspension of business, etc.) has been taken, 100% of expected loss from borrowers with negative capital over a long time (1 year), expected loss from agreed plans of company reorganization, special liquidation, etc. For exposure to other borrowers, banking organizations establish a (tax-exempt) general ADL subject to the maximum limit equal to the average historical loss rate.[29, 30]

In the presence of such tax exemptions, banks have incentive to maintain loss allowances at a level no less than the provisioning ceilings, for they naturally want to fully exploit this tax benefit. Furthermore, accounting practices in Japan had traditionally allowed doing it,[31] and, as a result, levels of general ADL in Japanese banks were strongly driven by the tax treatment of loss allowances.

The practice had continued until the enforcement of Inspection Manual's rules in 1999 raised provisioning rates far above the tax-exemption ceilings. An additional incentive for banking organizations to stop sticking to the taxation-purpose standards of loss provisioning came with the introduction of the so-called tax-benefit accounting rules that recognized future tax-exemption benefits of loss provisioning (beyond the maximum limits) as deferred assets.

The influence of the taxation regime still largely persists in the way Japanese banking organizations write off impaired credits. As a general rule, the present taxation framework does not recognize losses from writing-off non-collectible credits as a business expense before all collateral has been liquidated and all guarantees called in. Since charging assets off the books

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[29] The calculation formula of the historical loss rate is different, however, from that outlined in Inspection Manual: The historical loss rate for taxation purposes is based on the ratio of annual loan losses (amount of provisioning to specific ADLs in a business year) to the book-value of claims on (formally) non-bankrupt borrowers at the end of a business year, and it is calculated as the simple average of such ratios for three business years before the beginning of the reporting year. By comparison, Inspection Manual suggests that claims, for instance, to borrowers who fall into "borrowers that need special attention" and "borrowers in danger of bankruptcy" categories (and thereby are not formally bankrupt) should be provided for at a three-year cumulative loss rate. Further, see Notes to Figure 2.

[30] Before 2003, commercial banks could also opt for using a fixed uniform provisioning rate (of 0.3% of the exposures). At present, the option is still available to smaller banking organizations with own capital of ¥100m and less.

[31] Some observers explain this tendency by the fact that, on the one hand, in the absence of clear reference criteria for loss provisioning, Japanese public accountants had traditionally used referencing to the tax treatment of loan losses as a short-cut way of assessing the appropriateness of banks' loss provisioning; on the other hand, both the MoF and JICPA had silently approved such policies. See, e.g., Daigo (1993).

before the date implies that in the future a bank will be unable to file them as an expense deductible from taxable profit, the bank would try to avoid the opportunity loss and keep the credits on the books all the time before the date. This explains why, unlike, for instance, US banks, Japanese banking organizations typically write off assets long after their impairment is evident and instead maintain specific allowances equal to the expected loss.

Since October 1998, Japanese tax authorities have also permitted banking organizations to charge off the Category-IV portion of impaired exposures (see Figure 4) and account it as a business expense even before legal actions against borrowers and collateral liquidation procedures have been finalized. Since then, some banks have started implementing the partial write-offs as a way of early disposal of impaired assets, but the use of the procedure is far from being a uniform and regular approach. For instance, only 26% of commercial banks (mostly large and some medium-sized organizations) reported their business results for financial year 2002 on the after-partial-write-off basis.

Although the procedure is likely to be employed mostly for cosmetic purposes,[32] it seems to further obscure the comparability of the NPL and write-off indicators across banks. As a result, many commercial banks and some large credit associations are strongly concerned about being unfavorably publicized and, besides ordinary NPL figures, also report NPL levels they would have if they employed the partial write-off approach.


## 3-3. Discussion

On balance, when assessing the information content of the conventional indicators of bank credit risk, one should conclude that the levels of credit loss allowance by (borrower) risk group are generally superior to the NPL and write-off figures as a source of credit risk information.

Still, in Japan, information conveyed by the ADL rates is likely to be distorted away from the best and honest estimates of *expected* credit losses. Although at present provisioning levels in Japanese banks are no longer strongly influenced by tax rules, they seem to be excessively tied to the historical loss experience and tend to ignore forward-looking loss information. This feature of the present provisioning framework is not very disturbing in the case of impaired credit exposures, and (when there is a sufficiently long track record of ADL rates for individual

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[32] Under the present provisioning rules, banks have to provide for the entire Category-IV portion of impaired assets and to state future-period reduction in tax payments (from the difference between the allowance and permitted tax-exempt provisioning) as deferred assets. In the case of the partial write-off scheme, they charge off the portion of assets classified to Category IV and state the entire amount as tax-exempt expense of the current period. At first glance, the two approaches look different in that the materiality of the deferred assets in the former case may be questioned if the pre-tax profitability of a bank is marginally low. But if so, the bank could not fully use the tax-exemption benefits of the latter case either, and it would account them as deferred assets. Since in both cases the deferred assets can be carried over for the same period of five years, the only difference between the two cases is that in the latter one, the reported amount of impaired assets is smaller, and the bank could use the reduced figures to appeal to a financially unsophisticated public.

banks) the levels of *specific* loss allowances can be well used to infer the value of impaired but not yet collected loans. The overemphasized reliance on the historical loss experience, however, makes information conveyed by the levels of *general* loss allowance insufficient to assess current changes in the economic value of (non-impaired) credit assets of Japanese banks.

Information about non-performing loans and, more generally, about the structure of bank credit portfolios by borrower risk group plays a centerpiece role in the Japanese disclosure regime for banking organizations. The important properties of this information are that it is largely consistent across banks, takes explicit account of collateral and guarantees, and is directly linked to the structure of the loss provisioning system.[33] In addition, recent efforts by the FSA to improve its on-site monitoring of banks and impose administrative penalties for loan misclassification[34] seem to assure banks' correct classification of their credit exposures across risk groups. In these circumstances, one may conclude that the present disclosures of NPL classification results make the long-standing concern about underprovisioning in the Japanese banks far less acute.

NPL figures are, however, a very imprecise indicator of bank credit risk (Frolov, 2004a), and putting them into the center of the national disclosure regime may lead to increased information noise. Japan's experience with NPL disclosures in the last decade seems to support the view: Since 1996, the Japanese banking industry has been gradually increasing the scope of disclosed credit assets. The process went from making public total amounts of loans to bankrupt borrowers to those with restructured terms and then to those with past due payments – each time increasing the announced total amount of classified (non-standard) loans.

Against a background of large-scale bank failures, the ever-growing total numbers led the general public to mistrust banks' disclosures and to perceive all classified credit exposures largely as losses (Takenaka, 1998). Although both the authorities and the industry warned on many occasions that the size of the classified exposures is not directly related to the degree of their impairment, the market en large was still holding the developed negative image of the banks and stereotypically reacting even on doubtful information (Yamada, 1998).[35]

The prevalence of the negative view seems to stem from the fact that market analysts develop their opinion about the financial position of Japanese banks being focused on future credit losses (IMF, 2001), but the present disclosure regime emphasizes NPL figures which cannot, by their nature, bring much certainty about expected credit losses in individual banks.

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[33] According to JCIF (2003), uniform rules for NPL classification and disclosure are not unique to Japan, and exist e.g. in US, France, and Korea. The direct linking to provisioning rules and the disclosure of the NPL figures net of collateral are also observed in Korea.

[34] The approach is quite different from that observed in other countries. As reported in CAAC (2003), banking regulatory frameworks of UK, Germany, and France (and to some extent that of US) rely more on banks' explicit commitments to specific classification and provisioning policies and on the monitoring of their observance by external auditors.

[35] The exaggerated view of credit losses has been observed among market participants until very recently. For instance, see Sawayama (2002).

## IV. A survey of credit risk disclosure

The concern over the quality of bank credit disclosure is the issue of whether practically available information is sufficiently complete and unbiased to allow correct inferences about the economic value of banking organizations. To assess the qualitative aspect of bank credit disclosure in Japan, we investigated the content of information publicly available from individual banking organizations. This section will report and analyze results of our survey of credit risk information contained in the disclosure reports and business result briefs of the Japanese banking firms.

### 4-1. Types of disclosed credit information and its availability

The survey covered all commercial banks, credit associations and cooperatives that maintained web homepages as of the beginning of March 2004. Table 4 reports the incidence of credit-risk related information among banking organizations, which published in the Internet full versions of their disclosure reports and (or) business result briefs for financial year 2002. The reported results cover over 95% of commercial banks, 43% of credit associations, and 9% of credit cooperatives that filed their disclosure information for this year.[36] The information is arranged in groups following the types of needed information as suggested in Frolov (2004a). The reported disclosures represent all available data, which may be directly or indirectly useful with respect to the needed credit risk information.

The survey results suggest that the present system of mandatory disclosures assures that all banking organizations report credit exposures with a uniform breakdown by major type: first, with a breakdown of the total exposure by loans and other credits and further with a breakdown of the loans by type of lending contract and by place of origination (domestic vs. abroad). In general, the breakdowns seem to provide rather a good description of the exposure to credit products, which are predominantly used by small regional banks and cooperative-type banking organizations.

The officially required breakdowns, however, are far from being sufficient in the case of Japan's largest banks: The organizations are active internationally and have assets over half a trillion US dollars each. Still, the itemization of their disclosures does not go beyond the officially required minimum. Another problem of the available information breakdowns is that they are limited to the amount of credit exposure and not extended to the indicators of credit losses from different exposure types.[37] This feature undermines the materiality of the uniform information breakdowns employed in the Japanese system of mandatory bank disclosures.

The survey found no facts of Japanese banks' making public their risk transition matrixes in either the disclosure reports or the business result briefs.[38] The gap, nevertheless, seems to be

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[36] The survey also covered other 55 associations and 14 cooperatives, which published only abridged (or altered) versions of their reports and are not included to Table 4.

[37] The only feasible exception is that the breakdown by loans and other credit exposures can be partially extended to the risk indicators of impaired assets if one compares figures supplied within the FRL-based system to those within the RML system.

[38] Although at present some banks are reported disclosing this type of information during their corporate presentations to investors.

much compensated by mandatory disclosure of the FRL-based asset categories and (for banks) by voluntary disclosure of the SAF borrower risk groups. In the case of the FRL-based classification, the accumulated data already covers a 5-year period for each bank and at least a 4-year period for each cooperative-type institution. Since the classification is rather uniform across the organizations, in principle the data allows one-period projection of by-category dynamics for

**Table 4. Availability of credit risk data on Japanese banking organizations**[1]

| Data description | Commercial banks | | | Credit Assoc. | Credit Coops |
|---|---|---|---|---|---|
| | Disclosure reports | Business result briefs | Combined | Disclosure reports | Disclosure reports |
| (number of sources) | (112) | (117) | (109) | (141) | (17) |
| ***Breakdown by sub-portfolios of credit products*** | | | | | |
| Total credit exposures by loans and bills vs. others | 100.0* | 94.9 | 100.0 | 100.0* | 100.0* |
| Loans and bills by type[3] | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|    by domestic vs. foreign exposures | 100.0* | 0.0 | 100.0 | 0.0 | 0.0 |
|    by variable vs. fixed interest rate | 0.0 | 0.0 | 0.0 | 2.8 | 0.0 |
|    period-average amount outstanding | 100.0* | 0.9 | 100.0 | 100.0* | 100.0* |
|      by domestic vs. foreign exposures | 100.0* | 0.0 | 100.0 | 0.7 | 0.0 |
| Total acceptances and guarantees | 100.0* | 0.9 | 100.0 | 100.0* | 0.0 |
|    by type | 15.2 | 0.9 | 15.6 | 0.7 | 0.0 |
| ***Risk category transition matrix (structure by risk category)*** | | | | | |
| Total credit exposures by SAF borrower group | 45.5 | 74.4 | 76.1 | 8.5 | 5.9 |
|    by current vs. past periods of impairment | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 |
| Total credit exposures by FRL asset category | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|    by industry (sector) | 0.0 | 1.7 | 1.8 | 0.0 | 0.0 |
|    by specific ("troubled") industry | 0.0 | 11.1 | 10.1 | 0.0 | 0.0 |
|    by before vs. after partial write-offs | 3.6 | 13.7 | 14.7 | 0.0 | 0.0 |
| Loans and bills by RML category | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|    by industry (sector) | 0.9 | 1.7 | 2.8 | 0.7 | 0.0 |
|    by specific ("troubled") industry | 0.0 | 11.1 | 10.1 | 0.0 | 0.0 |
|    by before vs. after partial write-offs | 2.7 | 12.8 | 15.6 | 0.7 | 0.0 |
| ***Shared characteristics of each risk category*** | | | | | |
| Classification category definitions | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
| ***Explanation of by-period changes in expected (estimated) loss rates*** | | | | | |
| None | — | — | — | — | — |
| ***Distribution by the size of stand-alone exposures*** | | | | | |
| Number of borrowers by the size of exposure | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 |
| Total loans and bills by the size of exposure | 0.0 | 0.0 | 0.0 | 2.1 | 11.8 |
| ***Number of stand-alone exposures*** | | | | | |
| Total number of borrowers (impaired + non-impaired) | 58.9 | 3.4 | 58.7 | 58.9 | 0.0 |
|    by industry (sector) | 38.4 | 0.0 | 36.7 | 58.9 | 0.0 |
|    by SAF borrower group | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 |
|    defaulted in the current period | 0.0 | 3.4 | 3.7 | 0.0 | 0.0 |
|      by SAF borrower group | 0.0 | 3.4 | 3.7 | 0.0 | 0.0 |
|    by small vs. other business borrowers | 49.1 | 3.4 | 48.6 | 0.0 | 0.0 |
|    by housing loans vs. others | 0.0 | 0.0 | 0.0 | 2.8 | 0.0 |
| Bankruptcies over the current period by SAF bor. group | 0.0 | 2.6 | 2.8 | 0.0 | 0.0 |

**Table 4. (continued)**

| Data description | Commercial banks | | | Credit Assoc. | Credit Coops |
|---|---|---|---|---|---|
| | Disclosure reports | Business result briefs | Combined | Disclosure reports | Disclosure reports |
| **Non-impaired credit exposures** | | | | | |
| *Size of exposure* | | | | | |
| Total credit exposures by SAF non-impaired bor. group | 45.5 | 74.4 | 76.1 | 8.5 | 5.9 |
| by risk category | 21.4 | 42.7 | 45.0 | 2.1 | 0.0 |
| itemization of "need special attention" group | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 |
| Total loans and bills (impaired + non-impaired) | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
| by the use of borrowed funds[4] | 100.0* | 0.0 | 100.0 | 100.0* | 100.0* |
| by home region vs. other regions | 42.0 | 8.5 | 45.9 | 5.7 | 0.0 |
| by small vs. other business borrowers | 100.0* | 95.7 | 100.0 | 1.4 | 0.0 |
| by large vs. other business borrowers | 4.5 | 2.6 | 7.3 | 0.0 | 0.0 |
| by housing loans vs. others | 96.4 | 98.3 | 100.0 | 58.9 | 94.1 |
| loans to individuals by the use of borrowed funds | 0.0 | 0.0 | 0.0 | 2.1 | 0.0 |
| by industry (sector) | 100.0* | 92.3 | 100.0 | 100.0* | 100.0* |
| by the use of borrowed funds[4] | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 |
| by variable vs. fixed interest rate | 100.0* | 0.0 | 100.0 | 100.0* | 0.0 |
| by industry (sector) | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 |
| advanced abroad | 100.0* | 42.7 | 100.0 | 0.0 | 0.0 |
| by foreign region (country) | 2.7 | 42.7 | 43.1 | 0.0 | 0.0 |
| *Expected (estimated) loss rate* | | | | | |
| Expected total credit loss in the next period | 0.9 | 29.1 | 27.5 | 0.0 | 0.0 |
| by type of credit loss expense | 0.0 | 18.8 | 16.5 | 0.0 | 0.0 |
| Expected return on loans and bills in the next period | 0.0 | 2.6 | 1.8 | 0.0 | 0.0 |
| Expected average funding cost in the next period | 0.0 | 2.6 | 1.8 | 0.0 | 0.0 |
| Credit loss allowances and reserves | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
| by type (general ADL, specific ADL, others) | 100.0 | 97.4 | 100.0 | 100.0 | 100.0 |
| general ADL by SAF non-impaired bor. group | 8.9 | 28.2 | 28.4 | 2.1 | 0.0 |
| by risk category | 0.0 | 1.7 | 1.8 | 0.0 | 0.0 |
| *Effective rate of interest* | | | | | |
| Average rate of return on loans and bills | 75.0 | 91.5 | 98.2 | 95.7 | 100.0 |
| by domestic vs. foreign exposures | 75.0 | 0.9 | 74.3 | 0.7 | 0.0 |
| Average funding cost | 100.0* | 95.7 | 100.0 | 100.0* | 100.0* |
| by domestic vs. foreign liabilities | 100.0* | 0.9 | 100.0 | 0.7 | 0.0 |
| *Current value and structure of collateral assets (guarantees) pledged* | | | | | |
| Total loans and bills by type of collateral / guarantee | 100.0* | 1.7 | 100.0 | 100.0* | 100.0* |
| Guarantee endorsement by type of collateral / guarantee | 100.0* | 0.0 | 100.0 | 100.0* | 0.0 |
| *Expected (estimated) collection time-schedule in case of impairment* | | | | | |
| None | — | — | — | — | — |
| *Prevailing maturity (duration)* | | | | | |
| Loans and bills with fixed interest rate | 100.0* | 0.0 | 100.0 | 100.0* | 0.0 |
| by remaining term to maturity | 100.0* | 0.0 | 100.0 | 0.0 | 0.0 |
| by short-term vs. long-term | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 |
| **Impaired credit exposures** | | | | | |
| *Size of exposure* | | | | | |
| Total credit exposures by SAF impaired borrower group | 49.1 | 76.9 | 78.9 | 9.2 | 5.9 |
| by risk category | 20.5 | 41.9 | 44.0 | 2.1 | 0.0 |
| by current vs. past periods of impairment | 0.0 | 8.5 | 6.4 | 0.0 | 0.0 |

**Table 4. (concluded)**

| Data description | Commercial banks | | | Credit Assoc. | Credit Coops |
|---|---|---|---|---|---|
| | Disclo-sure reports | Business result briefs | Com-bined | Disclo-sure reports | Disclo-sure reports |
| FRL-disclosed assets (impaired categories) | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|    by industry (sector) | 4.5 | 11.1 | 13.8 | 0.0 | 0.0 |
|    by period of impairment | 5.4 | 24.8 | 22.9 | 0.0 | 0.0 |
|    net of collateral / guarantees | 80.4 | 96.6 | 100.0 | 97.9 | 82.4 |
|    by asset category | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|       by industry (sector) | 0.0 | 1.7 | 1.8 | 0.0 | 0.0 |
|       by specific ("troubled") industry | 0.0 | 11.1 | 10.1 | 0.0 | 0.0 |
|       by before vs. after partial write-offs | 3.6 | 13.7 | 14.7 | 0.0 | 0.0 |
|       by period of impairment | 0.9 | 17.9 | 19.3 | 0.0 | 0.0 |
|       net of collateral / guarantees | 65.2 | 74.4 | 87.2 | 57.4 | 70.6 |
| Risk-monitored loans | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|    by industry (sector) | 10.7 | 69.2 | 70.6 | 0.0 | 0.0 |
|    net of collateral / guarantees | 10.7 | 19.7 | 22.0 | 96.5 | 94.1 |
|    by loan risk category | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|       by industry (sector) | 0.9 | 1.7 | 2.8 | 0.7 | 0.0 |
|       by specific ("troubled") industry | 0.0 | 11.1 | 10.1 | 0.0 | 0.0 |
|       by before vs. after partial write-offs | 2.7 | 12.8 | 15.6 | 0.7 | 0.0 |
|       net of collateral / guarantees | 0.0 | 3.4 | 3.7 | 57.4 | 64.7 |
| ***Expected (estimated) loss rate*** | | | | | |
| Expected total credit loss in the next period | 0.9 | 29.1 | 27.5 | 0.0 | 0.0 |
|    by type of credit loss expense | 0.0 | 18.8 | 16.5 | 0.0 | 0.0 |
| Expected return on loans and bills in the next period | 0.0 | 2.6 | 1.8 | 0.0 | 0.0 |
| Expected average funding cost in the next period | 0.0 | 2.6 | 1.8 | 0.0 | 0.0 |
| Credit loss allowances and reserves | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
|    by type (general ADL, specific ADL, others) | 100.0 | 97.4 | 100.0 | 100.0 | 100.0 |
|       specific ADL by SAF impaired borrower group | 33.9 | 61.5 | 64.2 | 5.0 | 5.9 |
|          by risk category | 14.3 | 27.4 | 30.3 | 0.7 | 0.0 |
| ADL against FRL-disclosed assets (impaired) | 82.1 | 100.0 | 100.0 | 97.9 | 88.2 |
|    by asset category | 66.1 | 80.3 | 91.7 | 57.4 | 70.6 |
| ADL against Risk-monitored loans | 17.9 | 61.5 | 64.2 | 96.5 | 94.1 |
|    by loan category | 0.0 | 3.4 | 3.7 | 56.7 | 64.7 |
| Charges against specific ADL | 67.0 | 1.7 | 67.9 | 68.1 | 5.9 |
| Loan and bill (direct) write-offs | 100.0* | 100.0 | 100.0 | 100.0* | 100.0* |
| Disposal of loans and bills | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
|    by type of disposal | 24.1 | 100.0 | 100.0 | 2.1 | 5.9 |
|    by FRL asset category | 5.4 | 18.8 | 20.2 | 0.0 | 0.0 |
|       by type of disposal | 0.9 | 5.1 | 5.5 | 0.0 | 0.0 |
| ***Cumulative collection performance*** | | | | | |
| Remaining FRL-disclosed assets | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
|    by period of impairment | 6.3 | 24.8 | 22.9 | 0.0 | 0.0 |
|       by type of disposal | 1.8 | 9.4 | 9.2 | 0.0 | 0.0 |

*Notes*:
1. End-period (FY2002) figures unless otherwise specified; all in percentage points.
2. * denotes data which is directly or indirectly available from mandatory disclosures.
3. Loans on bills, loans on deeds, overdrafts, and bills discounted.
4. Working capital vs. equipment.

*Source*: disclosure reports and business result briefs available from the corporate websites of banking organizations as of the beginning of March 2004.

individual banking organizations.[39]

In the case of non-impaired credit exposures their size is best reflected by the SAF classification groups, whereas their structure may be fairly well characterized by breakdown information for the entire credit portfolio. Table 4 reports that in this respect the present disclosure regime in the Japanese banking produces a large flow of information, which is highly itemized and well comparable across individual organizations. For the majority of credit associations and many banks, the same is also true about the decomposition of the number of stand-alone credit exposures by major industries and economic sectors

These high quality disclosures, however, are not supported by symmetrically advanced information on other credit risk characteristics: The available data on expected credit losses and risk mitigation is far from being uniform and provides mostly indirect measurements. First, less than 20% of banks and none of credit associations and cooperatives provide their estimates of future net provisioning to the general loss allowance – a parameter which is attributable to the expected loss from non-impaired credit exposures. Still none of the disclosing banks makes public the specific assumptions used to develop their estimates.

Second, the lacking data could be somewhat replaced with uniformly available information on the present level of the general ADL. In this case, however, one would need to minimize the influence of historical loss experience. To do it, one should, ideally, concentrate on the rate of loss provisioning for "Sound Borrower" risk group. But as obvious from Table 4, this information is currently available only for a third of commercial banks and several credit associations.

Third, the disclosed data on interest rates turns to be too noisy and overly aggregated: As argued earlier, a comparison of changes in the average funding cost of a bank to changes in the effective interest rate on its new advances to sound borrowers could, ideally, provide a close measure of changes in the level of credit losses expected by the bank. The survey, however, indicates that Japanese banking organizations make public only the rate of return averaged over all loans – including those advanced in previous periods and those advanced as a part of debt restructuring programs. In addition, banks disclose no relevant information about the degree in which non-impaired exposures are secured with collateral and guarantees,[40] but controlling for the degree of risk mitigation is essential when one is to explain changes in the loan rate.

Finally, the survey shows that information about the prevailing term to maturity of stand-alone credit exposures is available only for commercial banks and completely absent for

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[39] The situation may be improved even further, if credit associations and cooperatives also start disclosing their results of the SAF classification, which is more precise for non-impaired credit exposures.

[40] As a part of mandatory disclosures, Japanese banking organizations make public information about a breakdown of their loan portfolios by type of collateral pledged by the borrowers. The information, however, lacks materiality in this case, because it says nothing about the appraisal value of the collateral itself.

the cooperative-type banking organizations.[41]

In the case of impaired credit exposures, both their size and expected loss rate are rather well reported by Japanese banking organizations. As discussed earlier, there are three systems which are simultaneously employed in Japan for the purpose of measuring credit exposures by the degree of risk. The systems mostly duplicate each other in respect to information about impaired credit assets. As a result, an itemization available within one system is largely compatible with breakdown data reported in another system.

For instance, if combined across the three systems, the value of impaired assets net of collateral (guarantees) and broken down by classification category is available in 87% cases for banks, 65% cases for credit associations, and 77% cases for credit cooperatives. And the availability is higher than the figures reported in Table 6 for each system separately. The same is true about the magnitude of expected losses from impaired assets: A breakdown of specific ADL by classification category is available for the banks, associations and cooperatives in 93%, 64%, and 77% cases, correspondingly.[42]

In sum, the survey suggests that the Japanese banking industry delivers a large flow of financial information. This is a result of the present mandatory disclosure regime that sets up specific types of required disclosures. Indirectly, the system also induces incentives to make public additional information, which could augment the mandatory NPL figures and make them better reflecting the true loss exposure. The disclosures are rather uniform across individual organizations and generally supply market participants with sufficient information about the magnitude of losses expected from impaired credit assets. By comparison, the disclosures of forward-looking information, which is related to the probability and magnitude of losses expected from the non-impaired asset portfolio, are shown to be much scarcer or absent. Thus, the survey results suggest likely directions to enhance the existing disclosure regime of the Japanese banking.

## 4-2. Determinants of disclosure

The survey also sheds some light upon the factors driving the disclosure decisions of individual banking organizations. To explore in this direction, we constructed a composite disclosure index by weighting the surveyed disclosures in accordance with their importance for making public the needed information on credit risk. There are two variants of the index: One covers all relevant information first separately in disclosure reports and in business result briefs,

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[41] This aspect is apparently neglected by the banking community as well: The banks seem to make public a breakdown of their loans and bills by remaining maturity simply because it is mandatory in the disclosure reports, and completely ignore this information in business result briefs.

[42] At the same time, the information reported for impaired assets may be insufficient if one wants to leverage it for inferences about future credit losses: Only a quarter of the banks and none of the credit associations and cooperatives disclose data on the amount of credit impaired during the reporting period. Similarly, by-period breakdowns are present only in a limited number of cases for collection performance, and they are virtually unavailable for the incidence of impairment (the number of defaults).

and then combined over the two sources. Another covers only voluntary disclosures in the reports and excludes the mandatory figures set up in by-laws.

Table 5 summarizes resulting credit disclosure scores (CDS) of commercial banks and credit associations. *SCORE-D* shows individual CDSs for all information in disclosure reports, *SCORE-V* – for voluntary information in disclosure reports, *SCORE-T* – for all information in business result briefs, and *SCORE-C* – for all information in the reports and briefs combined.

As reviewed in Frolov (2004b), the economic literature views a firm's decision to disclose its private information as based on weighting of expected costs and benefits for making the information public; so that, differences observed in disclosure policies across firms are usually explained by underlying dissimilarities in the firm-specific costs and benefits. On the benefit side of disclosure a list of suggested motives includes: reducing the information-asymmetry component of the funding cost, signaling to the market about superior business capacity of the firm or its management, avoiding possible litigation or regulatory costs. On the other hand, disclosure-related costs include: losses from sharing proprietary information with competitors, additional funding costs due to the market's uncertainty about the quality of released information, costs due to institutional factors, etc.

All the motives are generally valid for banking firms, but their relative strength may be affected by the presence of the financial safety net. Deposit insurance and other forms of protection remove the depositors' incentive to run on banks at first signs of problems by shielding them from direct losses on deposited money. As a result, the banking industry becomes more stable. But an average bank creditor gets paying much less attention to the risk of a bank's failure, and the relative reduction in the funding costs, with which banks are rewarded for good disclosure, becomes smaller. If the benefit of disclosure is marginal, then differences across banks in their disclosure decisions are likely to be predominantly driven by the firm-specific levels of disclosure-related costs.[43]

To explore CDS dynamics across banking organizations we test several factors which may underlie differences in the disclosure-related costs and benefits among banks. Our choice of factors to be tested relies on the understanding of the present Japanese disclosure regime developed in this report. Important insights into the determinants of bank disclosure are also due to a recent study by Spiegel and Yamori (2003).[44]

First, we test the following hypothesis:
*Hypothesis I: Banking organizations with relatively complex business activities disclose more information.*

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[43] Certainly, the benefits of disclosure do not disappear completely, because even insured depositors may still face some indirect losses from their bank's failure, and thus less solvent banks may have to pay higher interest rates to prevent the depositors from gradually shifting to sounder banks. Nevertheless, it is unclear whether such market discipline is still sufficiently strong to assure adequate voluntary disclosure by banks, and the problem needs empirical testing.

[44] Spiegel and Yamori (2003) explored factors, which determined the decisions of credit associations to voluntarily disclose their NPL figures in 1996-7.

This is a general requirement to banking disclosure articulated, e.g., by BCBS (2000). To test the hypothesis, we assume that the complexity is roughly proportional to the size of credit exposure and introduce a variable reflecting the size of credit portfolios (*CRED*). The variable is expected to have a positive statistical association with the CDSs due to two reasons.[45] First, as banks' business grows large and complex, the organizations become less transparent for bank outsiders and may face greater disclosure pressure from their creditors, depositors, industry analysts, and other market participants. Second, the complexity of the large banks may trigger stronger regulatory pressure.[46]

Second, we look into the role played in disclosure decisions by differences in the financial condition of banks. The present disclosure regime assures that the bank creditors can make rough inferences about a bank's financial condition by observing the level of regulatory capital or non-performing loans. Still, both indicators mostly reflect losses from impaired loans and deliver just vague signals about future losses from sound loans. Thus by disclosing more forward-looking information, the bank can signal the market about its future performance. A strong need of such signaling may arise when the current performance is poor and the bank wants to show the market that this is just due to temporal factors and the performance will reco-ver in the future. By comparison, the need may be weaker in case of good current performance. Hence, assuming that at least some of the poorly performing banks have bright chances of future recovery, one may expect a tendency to a negative association between the current financial condition of banks and the level of their disclosure effort.

Such a tendency can be observed only if the improved disclosure brings more additional benefits to the poor-performers than additional costs. The cost-side effect, however, may also be substantial when banks are in poor financial condition. For instance, banks with marginal capital adequacy are likely to be strongly concerned with the risk of regulatory costs in case of failing to comply with the capital requirement. Since greater disclosure implies greater possibility of being (at lest temporarily) unfavorably misinterpreted by the market, it can easily drive the capi-tal below the required minimum. In these circumstances, the marginally capitalized banks are likely to apply a larger weight to the regulatory costs when deciding on the extent of disclosure.

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[45] Spiegel and Yamori (2003) also list other two reasons. On the one hand, they suggest that larger credit associations may face greater disclosure pressure from their depositors because they usually operate in more financially-sophisticated environments than smaller associations, and their customers are more often approached by commercial bank competitors. On the other hand, Spiegel and Yamori (2003) note that the-re may be the economies of scale effect in preparing disclosure information. We do not associate either explanation with *CRED*, because (1) the market competition effect, in our opinion, should be accounted for by a separate variable, and (2) the economies of scale argument is not very relevant, as all the banking organizations in Japan must prepare much the same information for their regulatory reports filed with the authorities.

[46] A basis for such pressure is laid down in the banking legislation. In addition to the mandatory types of disclosure, Art. 21 Para. 4 of the Banking Law also stipulates banks shall disclose other information about their business and financial condition, which depositors should be aware of. Although this is clearly a declarative requirement and it may not necessarily lead to an explicit regulatory action, still it can, for instance, indirectly pressure large banks into adopting an enhanced group-wide disclosure standard.

# Table 5. Statistical analysis of credit risk disclosure by Japanese banking organizations: Selected results[1]

*Descriptive Statistics*

| | | | Banks and Credit Assocs. combined | | | | |
| | | | | Commercial Banks | | | Credit Assocs. (*SHINK*=1) |
| | | | | | City (*CITYB*=1) | Regional | Reg. 2nd (*REGB2*=1) | |
|---|---|---|---|---|---|---|---|---|
| Credit Disclosure Score | Disclosure Reports (*SCORE-D*) | (Mean) | 11.10 | 12.36 | 13.94 | 12.47 | 11.89 | 10.10 |
| | | (Std. Dev.) | 1.72 | 1.54 | 1.82 | 1.51 | 1.30 | 1.07 |
| | | (No. Obs.) | 253 | 112 | 8 | 62 | 42 | 141 |
| | Disclosure Reports Voluntary (*SCORE-V*) | (Mean) | 4.12 | 5.13 | 7.31 | 5.52 | 4.13 | 3.32 |
| | | (Std. Dev.) | 2.13 | 2.40 | 2.96 | 2.31 | 1.98 | 1.45 |
| | | (No. Obs.) | 253 | 112 | 8 | 62 | 42 | 141 |
| | Business Result Briefs (*SCORE-T*) | (Mean) | — | 10.79 | 12.50 | 11.16 | 9.97 | — |
| | | (Std. Dev.) | — | 2.19 | 0.96 | 2.05 | 2.25 | — |
| | | (No. Obs.) | — | 117 | 8 | 64 | 45 | — |
| | Combined Score (*SCORE-C*) | (Mean) | — | 14.55 | 16.13 | 14.72 | 13.95 | — |
| | | (Std. Dev.) | — | 1.84 | 1.06 | 1.79 | 1.83 | — |
| | | (No. Obs.) | — | 109 | 8 | 62 | 39 | — |
| Credit Assets (*CRED*) in ¥ billion | | (Mean) | 1203.6 | 3841.7 | 31070.8 | 2148.2 | 1776.5 | 192.1 |
| | | (Std. Dev.) | 5373.5 | 9742.0 | 20075.9 | 1450.0 | 6897.2 | 259.5 |
| | | (No. Obs.) | 451 | 125 | 8 | 64 | 53 | 326 |
| | Cases with available disclosure reports | (Mean) | 2024.6 | 4219.5 | 31070.8 | 2191.0 | 2099.3 | 281.2 |
| | | (Std. Dev.) | 7070.4 | 10228.7 | 20075.9 | 1451.2 | 7733.1 | 339.2 |
| | | (No. Obs.) | 253 | 112 | 8 | 62 | 42 | 141 |
| | Cases with available business result briefs | (Mean) | — | 4058.5 | 31070.8 | 2148.2 | 1973.2 | — |
| | | (Std. Dev.) | — | 10035.1 | 20075.9 | 1450.0 | 7479.2 | — |
| | | (No. Obs.) | — | 117 | 8 | 64 | 45 | — |
| Capital (*CAP-03*) in % | | (Mean) | 10.63 | 8.88 | 9.20 | 9.53 | 8.05 | 11.30 |
| | | (Std. Dev.) | 3.94 | 1.87 | 3.17 | 1.68 | 1.51 | 4.31 |
| | | (No. Obs.) | 451 | 125 | 8 | 64 | 53 | 326 |
| | Cases with available disclosure reports | (Mean) | 10.33 | 8.93 | 9.20 | 9.53 | 7.98 | 11.45 |
| | | (Std. Dev.) | 3.86 | 1.91 | 3.17 | 1.70 | 1.54 | 4.59 |
| | | (No. Obs.) | 253 | 112 | 8 | 62 | 42 | 141 |
| | Cases with available business result briefs | (Mean) | — | 8.85 | 9.20 | 9.53 | 7.82 | — |
| | | (Std. Dev.) | — | 1.90 | 3.17 | 1.68 | 1.46 | — |
| | | (No. Obs.) | — | 117 | 8 | 64 | 45 | — |

*Bivariate Correlation Analysis (Pearson correlation coefficients)[2]*

| | | Banks and Credit Assocs. combined | Commercial Banks | City (*CITYB*=1) | Regional | Reg. 2nd (*REGB2*=1) | Credit Assocs. (*SHINK*=1) |
|---|---|---|---|---|---|---|---|
| *SCORE-V × SCORE-T* | (Coeffic.) | — | 0.292*** | 0.951*** | 0.238** | 0.007 | — |
| | (No. Obs.) | — | 109 | 8 | 62 | 39 | — |
| *SCORE-V × LCRED* | (Coeffic.) | 0.533*** | 0.432*** | 0.259 | 0.219** | 0.369*** | 0.265*** |
| | (No. Obs.) | 253 | 112 | 8 | 62 | 42 | 141 |
| *SCORE-V × CAP-03* | (Coeffic.) | -0.083* | 0.165** | -0.051 | 0.105 | 0.022 | 0.034 |
| | (No. Obs.) | 253 | 112 | 8 | 62 | 42 | 141 |
| *SCORE-T × LCRED* | (Coeffic.) | — | 0.194** | 0.159 | 0.021 | -0.119 | — |
| | (No. Obs.) | — | 117 | 8 | 64 | 45 | — |
| *SCORE-T × CAP-03* | (Coeffic.) | — | 0.282*** | 0.017 | 0.219** | 0.205* | — |
| | (No. Obs.) | — | 117 | 8 | 64 | 45 | — |
| *LCRED × CAP-03* | (Coeffic.) | -0.280*** | 0.242*** | -0.120 | 0.170* | 0.138 | -0.198*** |
| | (No. Obs.) | 451 | 125 | 8 | 64 | 53 | 326 |

**Table 5. (concluded)**

*Regression Analysis (Ordinary Least Squares)* [3]

| Regressors: | (I) [4] | (II) [4,5] | (III) [6] | (IV) [6] |
|---|---|---|---|---|
| | Dependent Variable: *SCORE-V* | | | D.V.: *SCORE-T* |
| (Constant) | -3.9428 [.280] | -25.2687 [.149] | -2.1375 [.407] | 10.1568 [.000] |
| *LCRED* | 0.8662 [.011] | 2.5314 [.100] | 0.7250 [.004] | -0.1476 [.536] |
| *CAP03* | 0.0575 [.089] | 0.1839 [.111] | 0.0288 [.790] | 0.2371 [.024] |
| *SHINK* | -1.5047 [.008] | — | — | — |
| *CITYB* | -0.4544 [.708] | — | -0.0700 [.952] | 1.8329 [.008] |
| *REGB2* | -1.0099 [.022] | — | -0.7186 [.153] | -0.9157 [.044] |
| *COM1* | 0.4508 [.151] | 1.1828 [.141] | 0.4857 [.317] | 0.3842 [.469] |
| *COM2* | 0.5258 [.081] | 2.1776 [.068] | 0.3438 [.526] | 0.14257 [.787] |
| Adjusted R-squared | 0.3013 | 0.0914 | 0.1682 | 0.1064 |
| F (zero slopes) | 14.5813 [.000] | 3.8169 [.003] | 4.7405 [.000] | 3.3028 [.005] |
| No. observations | 253 | 141 | 112 | 117 |

*Notes*:
1. For variable definitions and data sources refer to Data Appendix.
2. *, ** and *** indicate (one-tailed) significance levels of 10, 5 and 1 percent respectively.
3. P-values (based on heteroscedastic-consistent errors) are in parentheses.
4. Corrected for a sample selection bias using the Heckman (two-step) procedure.
5 Estimated over credit association cases.
6 Estimated over commercial bank cases.

The relative strength of the benefit and cost sides of enhanced disclosure for financially weak banks is unclear *a priori*. Accordingly, we construct two competing hypotheses:

*Hypothesis II: Banking organizations in poor financial condition disclose more information as compared to those in sound financial condition.*

*Hypothesis III:    Banking organizations in poor financial condition disclose less information as compared to those in good financial condition.*

To test the role of differences in the financial strength of banks, here we employ the capital adequacy ratio (*CAP-03*) as an indicator of financial condition. If we find an inverse association between CAP-03 and the CDSs, then it will support Hypothesis II, whereas a positive association will bear witness to Hypothesis III.

Testing the hypotheses may have important implications for the design of the national disclosure regime: If we find support in favor of the former hypothesis (and against the latter one), it will indicate the presence of market discipline which is sufficiently strong to build the national disclosure regime on the basis of voluntary disclosures. If we obtain evidence to the contrary, then mandatory disclosures should prevail as a basis for an effective disclosure regime.

Third, we follow Spiegel and Yamori (2003) and test whether disclosure decisions are driven by the intensity of local market competition. That is, if disclosures are strongly

demanded by bank customers, then they become a factor of competition, and banks, which face regional markets with relatively strong competition for customer, are likely to disclose more information than those in less competitive markets. Conversely, no difference in disclosures of banks with core markets in high and low competition areas can be seen as an indication that the disclosures are not very important when competing for local (retail) customer. A corresponding hypothesis to test is:

*Hypothesis VI: Banking organizations with core business in high-competition markets disclose more information than banking organizations positioned in low-competition markets.*

To test the hypothesis we rely on results by Kano and Tsutsui (2003) in a study of the geographic segmentation of Japan's loan market. In particular, the authors report differentials of risk-adjusted interest rates on loans observed among regional banks and credit associations grouped by prefecture. Although the data is originally intended to test geographic segmentation in the loan market, it can also be used as an indicator of competition level: Prefectures with low (risk adjusted) interest rates can be assumed belonging to a high competition zone, and prefectures with high interest rates – to a low competition zone. Based on the data, we construct dummy variables for the low and high competition zones (*COM1* and *COM2*) and expect them to exhibit correspondingly negative and positive association with the CDSs.[47]

Finally, disclosure decisions of individual banking organizations may be influenced by factors specific to a sectoral industry group the organizations belong to. The argument of group-specific levels of disclosure assumes that the disclosure-related costs and benefits of members of one group are different from those of the other groups *due to specific factors*. Examples of such factors include (1) higher (lower) demand for information a group faces because either its business is intrinsically more (less) opaque and volatile that that of the other groups, or the group has characteristic customers; (2) a strong (weak) market power members of a group can enjoy because of their special status or specific market structure; (3) special regulatory treatment and associated costs a group faces, etc. The relative strength of the factors in shaping disclosure-related costs and benefits is unclear *a priori*. Hence, one may test only a hypothesis about the *presence* of group-specific levels of disclosure:

*Hypothesis V: Banking organizations belonging to a sectoral industry group have disclosure levels specific to the group.*

In Japan, the most notable examples of such groups are the sectoral organizations of bankers, such as the (First) Association of Regional Banks, the Second Association of Regional Banks, the Association of *Shinkin* Banks, etc. And we test Hypothesis V by introducing dummy variables for group membership (*SHINK*, *CITYB*, *REGB2*). If regression coefficients for the

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[47] In addition, we also follow Kano and Tsutsui (2003) and introduce a dummy variable (*COM3*) for prefectures belonging to a highly urbanized geographic zone with extended branch network of large (city) banks. The variable is expected to behave similarly to *COM2*.

dummies are significant statistically, then the result may indicate the presence of disclosure levels specific to the groups.

The statistical analysis results reported in Table 5[48] deliver two notable observations about the data. First, for all the types of CDS (*SCORE-D*, *SCORE-V*, *SCORE-T*, and *SCORE-C*) there are clear differences across sectoral industry groups: The absolute level of disclosure changes from the highest (group-average) score of the city banks to the lowest (group-average) score of the credit associations.[49] The observed tendency does not necessarily indicate the presence of group-specific factors in disclosure determinants, but it strongly suggests testing the possibility.

Second, the disclosure policy of some banks in the business result briefs is inconsistent with their policy in the disclosure reports: The correlation coefficient for *SCORE-V* and *SCORE-T* is generally low and turns insignificant for smaller banks.[50] The tendency indicates that for each of the two disclosure tools, the banks' decisions on what information to make public are shaped by different sets of factors.

The regression analysis over the entire sample (Regression I in Table 5) shows that after controlling for possible sample-selection bias, the SCDs of the disclosure reports (*SCORE-V*) exhibit significant positive association with the size of credit portfolio (*LCRED*). Hence, the result supports Hypothesis I that banking organizations disclose more information as their businesses grow complex.

The capital adequacy level (*CAP-03*) returns a positive sign, and the result is generally consistent over all other specifications. The positive sign indicates that banks with better financial condition are more willing to disclose.[51] The finding runs against Hypothesis II that banking organizations with poor financial condition disclose more, and instead supports the opposite view of Hypothesis III. Accordingly, the observed effect should be interpreted that when marginally sound, banks become averse to enhancing disclosure above the required minimum, because it means taking the risk of additional regulatory costs due to increased information noise. Furthermore, the finding suggests that when information is made public via the disclosure reports, the resulting market discipline is too weak to build the national disclosure

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[48] For complete results, refer to Table A1 of Data Appendix.

[49] Certainly, this is just a general tendency, and the situation on the level of individual banking organizations is far less clear. For instance, the best performer among the credit associations has a non-mandatory disclosure report score (*SCORE-V*) as much as 12.5% higher than that of the best performers among the members of the Second Regional Bank Association. The same is true about disclosures in the business result briefs (*SCORE-T*): The best performers among the "first" and "second" regional banks deliver as much as 15% and 11% more information than the best performers among the city banks.

[50] When controlling for the size effect, the (partial) correlation coefficient declines even further – to 20%.

[51] Although different in interpretation, the result is also consistent with the finding of Spiegel and Yamori (2003) that sound credit associations are more willing to disclose voluntarily than less sound associations. A similar observation is made by Nier and Baumann (2003), who find a positive association between the degree of disclosure and the level of capital adequacy over a large international panel dataset of individual banking organizations.

regime on the basis of voluntary actions of banking organizations. In addition, the evidence of weak market discipline indicates that the above-noted positive association between *SCORE-V* and *LCRED* should rather be explained by regulatory than market pressures.

Segmentation by the level of competition for customer, however, delivers far more ambiguous results: Although the sign for the high competition zone (*COM2*) is positive as expected, it is only 8% significant. Plus, a dummy for the low competition zone (*COM1*) is also positive, thus, contradicting the intended logic that the higher local customer competition, the more enhanced disclosure. The effect for the high competition zone is slightly more significant over the credit association cases, but disappears over the commercial bank cases. The general insignificance of the competition dummies can be explained as failure to reflect the true geographic segmentation by level of competition in the retail market.[52] But alternatively it can also be regarded as circumstantial evidence rejecting Hypothesis IV and suggesting instead that disclosure reports are unimportant as a factor of competition for customer.[53]

Dummy variables for the cases of credit associations (*SHINK*) and for those of the members of the second regional bank association (*REGB2*) both have statistically significant coefficients with negative signs. The coefficients, however, turn insignificant if control for the effects of size, financial condition, and customer competition level within each group.[54] Hence, the regression analysis results are too weak as a support for Hypothesis V. Considering the above-observed weak demand for information in the disclosure reports and relative unimportance of the disclosures for local market competition, the result may also be interpreted as no strong evidence that the authorities' special regulatory treatment of the sectoral industry groups induces differences in disclosure.

Separate estimations over the credit association cases (Regression II) and commercial bank cases (Regression III) show that the CDSs of disclosure reports by the associations exhibit less stable statistical links with the size of credit assets than those of disclosure reports by the banks. The tendency can be explained in line with Hypothesis I – by the fact that the associations are focused on local business transactions with small customers, and thus as a group have rather simple businesses; but the banks, and especially large ones, are engaged in far more complex financial transactions.

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[52] One possible concern is that the results of Kano and Tsutsui (2003) we rely upon are structured by prefecture. The majority of credit associations, however, have their business operation areas smaller than a prefecture. Hence *COM1* and *COM2* may fail to reflect the true segmentation. Another potential problem is that the original data of Kano and Tsutsui (2003) is for 1996, but all other data used in the study reflect situation at the end of FY 2002. Since 1997-2002 are the years when the banking crisis went into an acute stage and the banking industry experienced a sharp wave of restructuring, the segmentation dummies may be too outdated.

[53] Spiegel and Yamori (2003) use a different variable for the level of competition (the ratio of a prefecture's GDP over the number of bank branches located in it) and get 10%-significant estimates over the 1997 sample. They interpret the result as suggesting that competition promotes bank disclosures. Still the result seems to be somewhat unstable as it turns insignificant over the 1996 sample.

[54] Regressions that include the cross-products of *SHINK* and *REGB2* with *LCRED*, *CAP03*, and the competition dummies are reported in Data Appendix

The estimation results for the CDSs of the business result briefs (Regression IV) indicate important differences of this disclosure tool as compared to the disclosure reports. Unlike Regression III, the score (*SCORE-T*) is significantly associated with the capital adequacy level (*CAP03*) and exhibits no significant link with the size of credit assets (*LCRED*).

The positive sign of *CAP-03* supports Hypothesis III and indicates that the market discipline induced by the business result briefs is also too weak to build a voluntary disclosure regime on its basis.

If combined, however, with the lack of such statistical association in the case of the disclosure report scores (in Regression III), the result also suggests that the business result briefs are relatively more driven by the information demand of market participants. To explain the tendency, one needs to consider that the disclosure reports are targeted at ordinary depositors – financially unsophisticated and yet publicly protected investors; and the business result briefs are published for the use of the entire investor community, including sophisticated and mostly unprotected investors. Since the capital adequacy level is an important indicator of banks' riskiness, the weak association of *CAP-03* with *SCORE-V* and strong association with *SCORE-T* indirectly suggest that the disclosure demand of targeted information users of the reports is weak, and that of targeted users of the briefs is relatively strong. And this seems to be quite natural if consider that the former users are publicly protected from the risk of bank failure and the latter ones are not necessarily protected.[55]

To sum up, the statistical analysis of credit disclosure scores suggests that disclosure via both the disclosure reports and business result briefs does not generate adequate benefits for banks. Consequently, voluntary disclosures are unattractive when a banking organization is financially weak and thus especially vulnerable to the risk of being adversely misinterpreted by the market. The result indicates that given the present degree of protection of banks' creditors by the financial safety net, the voluntary disclosures are unlikely to lead to a situation when market participants have all the needed information about the credit risk of individual banking organizations.

Another finding of the analysis is that the business result briefs are relatively more driven by the information demand of market participants, whereas the content of the disclosure reports seems to be predominantly shaped by the official requirements to banking organizations. The finding points out that information supplied via the disclosure reports lacks feedback from information users.

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[55] The strong statistical association of *SCORE-V* with *LCRED* can be understood as a result of regulatory pressures on more complex banks to disclose additional information.

## V. Directions to enhance credit risk disclosures: A proposal

In the preceding sections of the report, the discussion of credit risk disclosure in the Japanese banking system has so far determined the strong and weak sides of the present disclosure regime and highlighted factors which determine the flow of information disclosed by the industry. In this section we shall build on these results and develop a proposal on how to enhance the present regime in order to bring it closer to the recommendations of the new Basel Accord.

As shown in the previous section, the present disclosure regime delivers a large volume of uniformly itemized information about the financial condition of individual banking organizations. Some of the information is made public voluntarily, but core disclosures are apparently assured by the mandatory nature of the present disclosure regime. The statistical analysis of disclosures on the level of individual organizations has confirmed that in the present financial environment the market discipline factor is too weak to make banks disclosing all material information the market participants need. The evidence leads us to believe that *the mandatory disclosure principle should remain an effective basis of the disclosure regime in the future.*[56]

Mandatory disclosures, however, have their own weaknesses: On the one hand, the fixed format of the regulatory disclosures does not easily accommodate new issues as they develop. On the other hand, in setting disclosure requirements the regulators cannot easily rely on market consensus on information needed, because disclosing banks and the users of information are deeply divided on where to draw a borderline between proprietary and non-proprietary information, and as a result it is typically unclear whether or not given disclosure requirements are good and efficient.

Japan's experience with mandatory disclosures for banks since 1982 supports the concern: As discussed above, before the mid-1990s the disclosures were cautious and generally insufficient for assessing a bank's financial condition, because the requirements were developed inside the banking industry. During the last decade, however, the industry has lost the lead, and the disclosure regime has become excessively focused on the NPL figures, which may be misleading if used to assess the financial condition of individual banks.

The experience implies that *a mechanism of consensus-making over desirable disclosures has to become an explicit integral part of the mandatory disclosure regime.* At present, some sort of consensus-making in the field is conducted through the deliberations in the FSRC. Still the issue of desirable disclosures in banking is far away from the focal point of regular discussions, and the FSRC's inquiries never go to detailed suggestions on disclosure requirements. Instead, the disclosure regime needs a specialized consultative body that, ideally,

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[56] Although on different grounds, other observers also arrive at a similar conclusion. For instance, Shiba (1996) asserts that unlike Western firms, Japanese companies tend to see institutionalized disclosures as maximum requirements and not to go beyond them. Hence, to achieve the same flow of information as that produced by voluntary disclosures of the Western firms, the present mandatory disclosure requirements for banks may need to be further extended.

should (1) include both bankers and first-hand users of the disclosed information, such as market analysts, rating agencies, and institutional investors, (2) have regularly scheduled inquiries in the adequacy and appropriateness of specific mandatory disclosures and related rules.

The discussion above also indicates that the way disclosed information is channeled to its users can be greatly improved. At present, the banking-specific mandatory disclosures in Japan predominantly rely on the form of hard-copy disclosure reports intended for in-branch inspection by the depositors. The approach has two obvious problems: On the one hand, small publicly-protected depositors normally lack incentives for comprehending the diverse quantitative information contained in the disclosure reports; they rarely demand the reports, and at most look through their leaflet-type briefs. On the other hand, banking quantitative disclosures, by their nature, need to be compared across multiple organizations, but the information of disclosure reports is decentralized and thus costly to obtain.

A likely solution to the problem can be inferred from the recent experience with filing the securities reports via the EDINET. The past three years of the centralized electronic publishing of the reports suggest that given the universal spread of personal computers (1) limited availability of information on hard-copy media does not necessarily reduce the accessibility of the information for users, (2) the centralized storage of information in an electronic form enables cost-efficient access to the information, and (3) filing quantitative data electronically according to a fixed format does not preclude from supplying the numbers with additional qualitative and quantitative information deemed necessary to correctly comprehend them. Accordingly, the efficiency of the mandatory disclosure reports will improve if *the legal requirement to keep them available for in-branch public inspection is relaxed under the condition of filing the reports electronically with a publicly accessible centralized storage*.[57]

Table 6 summarizes our suggestion of the specific types of quantitative credit risk information to be disclosed by banking organizations. Based on the discussion in this report, we believe that the suggested information is likely to be deemed material by investors concerned with inferring changes in the economic value of a bank's credit asset portfolio. The suggestion also satisfies the basic principle of banking disclosure that proprietary information of banks should not be made public. It is so since we do not suggest banks to disclose price information disaggregated to a larger extent than that of the credit risk data publicly available in the market from private information vendors.[58]

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[57] The US experience with banking disclosures suggests another solution. In particular, instead of bringing the disclosure reports to an EDINET-like filing system, publication of the reports can be abandoned at all, and the required information can be made available to the public as the authorities disclose related parts of banks' regulatory reports. Since the regulatory reports in Japan are filed electronically, the solution may be equally cost-effective. An apparent problem of the approach is that banking organizations become relatively restricted in supplying the users of the disclosed numbers with complementary qualitative information.

[58] For instance, from the Credit Risk Database (CRD) Project.

The suggestion consists of core and supplementary information needs. The core disclosures include information, which is essential for monitoring the economic value of a bank's credit portfolio and thus should be mandatory for all banking organizations. The supplementary disclosures encompass data, which gives additional precision and detail to the core disclosures and, accordingly, is expected to be made public by banks with more complex portfolios. The suggested itemization of the data focuses mostly on breakdowns by industry (economic sector) and by borrower size. These breakdowns are, in our view, the shortest way to pick up risk-factor homogeneous groups in banking portfolios while keeping the data comparable across banks and minimizing additional data-preparation efforts required from the banks.

When compared to the present disclosure requirements, the suggested quantitative disclosures have important improvements. First, they give a uniform itemization to both credit exposures and credit losses – a feature absent in the present requirements.

Second, a breakdown by borrower risk category is based entirely on the Self-Assessment Framework (SAF) classification system, which is more precise and closer to the real risk management practices of banks than the other two asset classification systems. Another benefit is that the SAF classification allows no imbalance between impaired and non-impaired exposures in respect to disclosed information.

Third, the data on the number of stand-alone exposures and their distribution by size address the concern about the comparability of bank portfolio figures across many organizations. Given a relatively short track-record, the feature can allow market participants to approximate by-segment loss distributions for credit assets of individual banks and, thus, improve their ability to correctly interpret jumps they observe in the banks' credit losses. The feature is likely to be equally important for the bank's ability to convincingly explain deviations of their ex-ante loss estimates from ex-post (realized) loss figures.

Finally, the disclosures include three types of forward-looking indicators of credit losses: direct loss estimates, loss provisioning rates, and effective interest rates on new advances. All the three may be somewhat biased – either because of *de facto* regulatory policies, or the banks' number management, or their emphasis on relationship lending – and their combination can improve the reliability of forward-looking information.

Qualitative disclosures represent another integral part of an effective disclosure regime in banking. At present, Japanese banking organizations universally make public definitions of risk classification categories and information about their in-house risk management systems. Some of them also disclose loss provisioning criteria. In general, however, the available information about the criteria of risk classification and loss provisioning is insufficient for an outside observer to fully understand a bank's policies concerning non-impaired credit exposures. The deficiency is indirectly alleviated by the strict and uniform enforcement of the authorities' view on appropriate asset classification and provisioning policies during the regulatory inspections

and off-site examinations. Still, disclosing more details on the classification and provisioning criteria for non-impaired exposures is a suggestible direction for improvement.

**Table 6. Suggested requirements to credit risk (quantitative information) disclosure by Japanese banking organizations**

| Itemization | | | | | Size of exposure: end of period | Size of exposure: period average | Number of stand-alone exposures | Distribution by size of stand-alone exp-s | Fixed-rate exposures: size | Fixed-rate exposures: prevail. maturity /duration | Expected (estimated) loss rate | Allowance for doubtful loans | Effective interest rate | Effective funding cost | Appraisal value of collateral / guarantees: total | Appraisal value: by type | Cumulative collection performance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total credit exposure** | | | | | | | | ● | | | | | | ● | | | |
| | Loans and bills | Individuals and small businesses | Domestic | by sector /industry | ● | ● | ● | ○ | ● | ● | ● | | | | | ● | |
| | | | | by region | | ○ | | | | | | | | | | | |
| | | | | by region | ● | ● | ● | | | | | | | | | | |
| | | | Foreign | | ● | ● | ● | | ● | ● | ○ | | | | | ○ | |
| | | Medium /large borrowers | Domestic | by sector /industry | ● | ● | ● | ○ | ● | ● | ● | | | | | ● | |
| | | | | by region | | ○ | | | | | | | | | | | |
| | | | | by region | ● | ● | ● | | | | | | | | | | |
| | | | Foreign | by sector /borrower type | ● | ● | ● | | ● | ● | ○ | | | | | ○ | |
| | | | | by region | | ○ | | | | | | | | | | | |
| | | | | by region / country | ● | ● | ● | | | | | | | | | | |
| | Exposures other than loans and bills | | | | ● | ● | ● | | ● | ● | ○ | | | | | | |
| **Exposure to sound borrowers** | | | | | ● | | | | | | | ● | | | ● | | |
| | Loans and bills | Individuals and small businesses | Domestic | by sector /industry | | | | | | | | ● | | | ● | | |
| | | | | incl. new | ● | | | | | | | | ● | | ● | | |
| | | | | by region | ○ | | | | | | | ○ | ○ | | ○ | | |
| | | | | incl. new | ○ | | | | | | | | ○ | | ○ | | |
| | | | Foreign | | ○ | | | | | | | ○ | | | ○ | | |
| | | | | incl. New | ○ | | | | | | | | | | | | |
| | | Medium /large borrowers | Domestic | by sector /industry | | | | | | | | ● | | | ● | | |
| | | | | incl. new | ● | | | | | | | | ● | | ● | | |
| | | | | by region | ○ | | | | | | | ○ | ○ | | ○ | | |
| | | | | incl. new | ○ | | | | | | | | ○ | | ○ | | |
| | | | Foreign (by sector /borrower type) | incl. new | ● | | | | | | | | ● | | ● | | |
| | | | | by region | ○ | | | | | | | ○ | ○ | | ○ | | |
| | | | | incl. new | ○ | | | | | | | | ○ | | ○ | | |
| | Exposures other than loans and bills | | | | ○ | | | | | | | ○ | | | ○ | | |
| **Exposure to need attention borrowers other than that need special attention** | | | | | ● | | | | | | | ● | | | ● | | |
| | Loans and bills | Individuals and small businesses | Domestic | by sector /industry | ○ | | | | | | | ○ | | | ○ | | |
| | | | | by region | ○ | | | | | | | | | | | | |
| | | | Foreign | | ○ | | | | | | | ○ | | | ○ | | |
| | | Medium /large borrowers | Domestic | by sector /industry | ○ | | | | | | | ○ | | | ○ | | |
| | | | | by region | ○ | | | | | | | | | | | | |
| | | | Foreign | | ○ | | | | | | | ○ | | | ○ | | |
| | Exposures other than loans and bills | | | | ○ | | | | | | | ○ | | | ○ | | |
| **Exposure to need special attention borrowers** | | | | | ● | | | | | | | ● | | | ● | | |
| | Loans and bills | Individuals and small businesses | Domestic | by sector /industry | ○ | | | | | | | ○ | | | ○ | | |
| | | | | by region | ○ | | | | | | | | | | | | |
| | | | Foreign | | ○ | | | | | | | ○ | | | ○ | | |
| | | Medium /large borrowers | Domestic | by sector /industry | ○ | | | | | | | ○ | | | ○ | | |
| | | | | by region | ○ | | | | | | | | | | | | |
| | | | Foreign | | ○ | | | | | | | ○ | | | ○ | | |
| | Exposures other than loans and bills | | | | ○ | | | | | | | ○ | | | ○ | | |

**Table 6. (concluded)**

| Itemization | | | | | | Size of exposure – end of period | Size of exposure – period average | Number of stand-alone exposures | Distribution by size of stand-alone exp.-s | Fixed-rate exposures – size | Fixed-rate exposures – prevail. maturity /duration | Expected (estimated) loss rate | Allowance for doubtful loans | Effective interest rate | Effective funding cost | Appraisal value of collateral / guarantees – total | Appraisal value of collateral / guarantees – by type | Cumulative collection performance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exposure to borrowers in danger of bankruptcy** | | | | | | ● | | | | | | | ● | | | ● | | |
| | Loans and bills | Individuals and small businesses | Domestic | by sector /industry | | ○ | | | | | | | ○ | | | ○ | | |
| | | | | by region | | ○ | | | | | | | | | | | | |
| | | | Foreign | | | ○ | | | | | | | ○ | | | ○ | | |
| | | Medium /large borrowers | Domestic | by sector /industry | | ○ | | | | | | | ○ | | | ○ | | |
| | | | | by region | | ○ | | | | | | | | | | | | |
| | | | Foreign | by sector /borrower type | | ○ | | | | | | | ○ | | | ○ | | |
| | | | | by region / country | | ○ | | | | | | | | | | | | |
| | Exposures other than loans and bills | | | | | ○ | | | | | | | ○ | | | ○ | | |
| **Exposure to bankrupt and de facto bankrupt borrowers** | | | | | | | | | | | | | ● | | | ● | | |
| | | | | by period of impairment | | | | | | | | | | | | | | ● |
| | Loans and bills | Individuals and small businesses | Domestic | by sector /industry | | ● | | | | | | | ● | | | ● | | |
| | | | | | by period of impairment | ○ | | | | | | | | | | | | ○ |
| | | | | | incl. new | ● | | | | | | | | | | | | |
| | | | | by region | | ● | | | | | | | | | | | | |
| | | | | | by period of impairment | ○ | | | | | | | | | | | | |
| | | | | | incl. new | ● | | | | | | | | | | | | |
| | | | Foreign | | | ● | | | | | | | ○ | | | ○ | | |
| | | | | by period of impairm-t | | | | | | | | | | | | | | ○ |
| | | | | incl. New | | ● | | | | | | | | | | | | |
| | | Medium /large borrowers | Domestic | by sector /industry | | ● | | | | | | | ● | | | ● | | |
| | | | | | by period of impairment | ○ | | | | | | | | | | | | ○ |
| | | | | | incl. new | ● | | | | | | | | | | | | |
| | | | | by region | | ● | | | | | | | | | | | | |
| | | | | | by period of impairment | ○ | | | | | | | | | | | | |
| | | | | | incl. New | ● | | | | | | | | | | | | |
| | | | Foreign | by sector /borrower type | | ● | | | | | | | ○ | | | ○ | | |
| | | | | | by period of impairment | ○ | | | | | | | | | | | | ○ |
| | | | | | incl. new | ● | | | | | | | | | | | | |
| | | | | by region / country | | ● | | | | | | | | | | | | |
| | | | | | by period of impairment | ○ | | | | | | | | | | | | |
| | | | | | incl. new | ● | | | | | | | | | | | | |
| | Exposures other than loans and bills | | | | | ● | | | | | | | ○ | | | ○ | | ○ |

Note: ● and ○ denote core and supplementary quantitative disclosures correspondingly.

Another important type of qualitative disclosures is explanatory information about by-period changes in expected (estimated) rates of credit losses. As argued above, banking organizations themselves are the best source of forward-looking credit-cost information, but by the nature of loss projections there will be inevitable errors and this may question the reliability of the disclosures in the market's eyes. The best way to remove the suspicion is to show the market participants the particular assumptions and procedures the estimates are developed, indicate the significance intervals of the estimates, and explain what went wrong if there are too large deviations from the expected levels.

## VI. Summary and concluding remarks

The report has reviewed the disclosure practices of Japanese banking organizations and analyzed the quality of disclosed information about the banks' lending assets. The investigation has revealed the strong and weak sides of the present disclosure regime and delivered important insights into determinants of the banks' disclosure activities. The results have lead to the formulation of specific suggestions on what is needed to improve bank transparency in lending activities.

The study has showed that banking organizations in Japan disclose information through multiple channels including the disclosure reports, securities reports, business result briefs, and company presentation meeting. Information releases via the disclosure and securities reports follow mandated rules set up in by-laws, and the other two channels convey information disclosed largely on a voluntary basis. Banking organizations have relatively weak incentives for voluntary disclosure in the mandatory (disclosure) reports, because they are targeted mostly at protected creditors and typically require much time and effort to be used for comparison across multiple organizations. Unlike the reports, the business result briefs are less costly in use, and they have recently become the main channel of voluntary disclosures the commercial banks rely on in managing mass-media and reputation risks. The credit associations and cooperatives, however, do not typically have unprotected creditors. For that reason, they disclose only through the mandatory (disclosure) reports, and the total flow of information they make open to the market falls far behind that of the commercial banks.

The discussion of conventional indicators of bank credit quality has revealed their role in the present disclosure regime. We see the system placing strong emphasis on information about non-performing loans. The information is largely consistent across banking organizations, takes explicit account of collateral and guarantees, and is directly linked to the structure of the loss provisioning system. These properties and the recent efforts of the authorities to enforce strict loan classification seem to alleviate the long-standing concern about underprovisioning in Japanese banks. Unlike, the NPL figures, the loss provisioning rates receive far less attention. Furthermore, in the present provisioning framework they are strongly tied to the historical loss experience. As a result the value of provisioning rate disclosures as a source of information about expected credit losses is reduced.

To gain insights into disclosure activities on the level of individual banks, we have surveyed the disclosure reports and business result briefs of over 250 banking organizations. The availability analysis of information on portfolio credit risk suggests that the presence of specific data requirements in the nation's mandatory disclosure regime ensures that the banking industry delivers a relatively large flow of financial information. The disclosures are rather uniform across individual organizations and generally supply market participants with sufficient information about the magnitude of losses expected from impaired credit assets. By comparison, the disclosures of forward-looking information, which is related to the probability and

magnitude of losses expected from the non-impaired asset portfolio, are shown to be much scarcer or absent.

Further statistical analysis of survey results has shed some light upon the determinants of disclosure decisions of Japanese banks. For both the disclosure reports and business result briefs, we find voluntary disclosures unattractive to financially weak banks. Thereby, we conclude that given the present degree of protection of the bank creditors by the nation's financial safety net, the voluntary disclosures are unlikely to lead to a situation when market participants have all the needed information about the credit risk of individual banking organizations. The analysis also confirms that the business result briefs are relatively more driven by the information demand of market participants, whereas the content of the disclosure reports is predominantly shaped by the official requirements and lacks feedback from the information users.

Based on the results, the study has arrived at specific suggestions on how to enhance bank credit disclosures. First, the weakened incentive for voluntary disclosure leads us to believe that the mandatory disclosure principle should remain an effective basis of the disclosure regime in the future. Second, considering the inherent weaknesses of mandated rules and the need of timely enhancement of existing regulations, we suggest that a mechanism of consensus-making over desirable disclosures has to become an explicit integral part of the mandatory disclosure regime. Third, we see the need to improve the cost-efficiency of disclosure tools and propose to employ electronic filing of the disclosure reports with a publicly accessible centralized storage. Finally, we prepare a list of specific quantitative and qualitative disclosure requirements aimed at augmenting and rebalancing the present rules toward enhanced disclosure of forward-looking information about future credit losses.

The report has so far analyzed the present state of credit risk disclosure in the Japanese banking and suggested ways to improve the existing disclosure regime. The results may become a natural input for the coming discussion of needed changes to the disclosure rules in connection with the new Basel (II) regulations. Being narrowly focused on the credit risk in traditional bank lending, our proposal is far from an exclusive list of needed changes in the nation's disclosure regime. Nevertheless, we believe that it lies at the heart of the solution to the current management problems of Japanese banking organizations.

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# Data Annex. Credit risk disclosure by individual banking organizations in Japan

## Table A1. Statistical analysis results

### Descriptive Statistics

The table below reports descriptive statistics (Mean, Std. Dev., No. Obs.) for individual banking organizations in Japan, broken out by Banks and Credit Associations combined, Commercial Banks (City Banks [CITYB=1], Regional Banks, Regional Banks 2nd Ass. [REGB2=1]) and Credit Associations [SHINK=1], further split by Competition (High [COM2=1], Medium, Low [COM2=1]) and Area (Urban [COM2=1], Rural).

Row groups: Credit Disclosure Score — Disclosure Reports (SCORE-D); Disclosure Reports Voluntary (SCORE-F); Business Result Briefs (SCORE-T); Combined Score (SCORE-C). Credit Assets (CRED) in ¥ billion; Disclosure Reports; Business Result Briefs; Combined Score; Capital 2003 (CAP-B) in %; Disclosure Reports (Available / Not Available).

| | | Banks and Credit Associations combined | | | | | | | | | | | | | | | | | | | |
| | | Commercial Banks | | | | | | | | | | | | | | | | | | | Credit Associations (SHINK=1) |
| | | | | | | | City Banks (CITYB=1) | | | | | | Regional Banks | | | | | | Regional Banks 2nd Ass. (REGB2=1) | | | |
| | | Competition | | | Area | | | Competition | | | Area | | | Competition | | | Area | | | Competition | | | Area | | Competition | | | Area | |
| | | High (COM2=1) | Medium | Low (COM2=1) | Urban (COM2=1) | Rural | High (COM2=1) | Medium | Low (COM2=1) | Urban (COM2=1) | Rural | High (COM2=1) | Medium | Low (COM2=1) | Urban (COM2=1) | Rural | High (COM2=1) | Medium | Low (COM2=1) | Urban (COM2=1) | Rural | High (COM2=1) | Medium | Low (COM2=1) | Urban (COM2=1) | Rural |

*(The remainder of this data annex is a large rotated statistical table of mean, standard deviation, and number of observations values, organized by bank type, competition level, and area — reproduced in the source image.)*

# Table A1. (continued)

## Banks and Credit Associations combined

| Business Result Briefs / Combined Score | | | Banks and Credit Associations combined — Competition (High COM2=1, Medium, Low COM1=1) / Area (Urban COM3=1, Rural) | | | | | | Commercial Banks | | | City Banks (CITYB=1) — Competition (High COM2=1, Medium, Low COM1=1) / Area (Urban COM3=1, Rural) | | | | | | Regional Banks — Competition (High COM2=1, Medium, Low COM1=1) / Area (Urban COM3=1, Rural) | | | | | | Regional Banks 2nd Ass. (REGB2=1) — Competition (High COM2=1, Medium, Low COM1=1) / Area (Urban COM3=1, Rural) | | | | | | Credit Associations (SHINK=1) — Competition (High COM2=1, Medium, Low COM1=1) / Area (Urban COM3=1, Rural) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | All | High | Medium | Low | Urban | Rural | All | High | Medium | Low | Urban | Rural | All | High | Medium | Low | Urban | Rural | All | High | Medium | Low | Urban | Rural | All | High | Medium | Low | Urban | Rural | All | High | Medium | Low | Urban | Rural |
| Business Result Briefs | Available | Mean | 8.85 | 9.04 | 8.75 | 8.71 | 8.97 | 8.81 | 9.53 | 9.28 | 9.75 | 9.57 | 8.95 | 9.65 | 9.20 | 9.20 | — | — | 9.20 | — | 9.28 | 9.28 | 9.73 | 9.57 | 8.95 | 9.66 | 7.82 | 8.59 | 7.34 | 7.51 | 8.78 | 7.58 | — | — | — | — | — | — |
| | | Std.Dev. | 1.90 | 1.83 | 1.93 | 2.00 | 2.04 | 1.87 | 1.68 | 1.61 | 1.47 | 1.95 | 1.97 | 1.61 | 3.17 | 3.17 | — | — | 3.17 | — | 1.61 | 1.51 | 1.95 | 1.97 | 1.64 | 1.46 | 1.13 | 1.61 | 1.38 | 1.52 | — | — | — | — | — | — |
| | | No. Obs. | 117 | 45 | 34 | 38 | 28 | 89 | 64 | 22 | 20 | 22 | 11 | 53 | 8 | 8 | 0 | 0 | 8 | 0 | 22 | 21 | 19 | 22 | 11 | 45 | 36 | 16 | 14 | 9 | — | — | — | — | — | — |
| | Not Available | Mean | 9.37 | 9.17 | 9.68 | 9.76 | 9.17 | 9.70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 9.37 | 9.17 | 9.68 | 9.76 | 9.17 | 9.70 | — | — | — | — | — | — |
| | | Std.Dev. | 1.12 | 1.41 | 0.49 | 0.00 | 1.41 | 0.35 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1.12 | 1.41 | 0.49 | 0.00 | 1.41 | 0.35 | — | — | — | — | — | — |
| | | No. Obs. | 8 | 5 | 5 | 2 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 5 | 2 | 5 | 3 | — | — | — | — | — | — |
| Combined Score | Available | Mean | 8.91 | 9.06 | 8.71 | 8.91 | 8.97 | 8.89 | 9.53 | 9.31 | 9.73 | 9.57 | 8.95 | 9.66 | 9.20 | 9.20 | — | — | 9.20 | — | 9.31 | 8.56 | 9.73 | 9.57 | 8.95 | 9.66 | 7.86 | 8.56 | 7.34 | 7.70 | 8.78 | 7.58 | — | — | — | — | — | — |
| | | Std.Dev. | 1.93 | 1.89 | 1.94 | 2.01 | 2.04 | 1.91 | 1.70 | 1.64 | 1.51 | 1.95 | 1.97 | 1.64 | 3.17 | 3.17 | — | — | 3.17 | — | 1.64 | 1.22 | 1.51 | 1.95 | 1.97 | 1.52 | 1.13 | 1.61 | 1.54 | 1.62 | — | — | — | — | — | — |
| | | No. Obs. | 109 | 42 | 33 | 34 | 28 | 81 | 62 | 21 | 19 | 22 | 11 | 51 | 8 | 8 | 0 | 0 | 8 | 0 | 21 | 13 | 19 | 22 | 11 | 39 | 13 | 14 | 12 | 9 | 30 | — | — | — | — | — | — |
| | Not Available | Mean | 8.69 | 9.00 | 9.82 | 7.52 | 9.17 | 8.48 | 9.37 | 8.62 | 10.12 | — | — | 9.37 | — | — | — | — | — | — | 8.62 | 9.06 | 10.12 | — | 9.17 | 8.60 | 9.06 | 9.68 | 7.52 | 9.17 | 8.28 | — | — | — | — | — | — |
| | | Std.Dev. | 1.35 | 1.09 | 0.43 | 1.33 | 1.41 | 1.33 | 1.06 | 0.00 | 0.00 | — | — | 1.06 | — | — | — | — | — | — | 0.00 | 1.17 | 0.00 | — | 1.41 | 1.39 | 1.17 | 0.49 | 1.33 | 1.41 | 1.35 | — | — | — | — | — | — |
| | | No. Obs. | 16 | 8 | 3 | 5 | 5 | 11 | 2 | 1 | 1 | — | — | 2 | — | — | — | — | — | — | 1 | 7 | 1 | — | 5 | 14 | 7 | 5 | 2 | 5 | 9 | — | — | — | — | — | — |

## Bivariate Correlation Analysis (Pearson correlation coefficients)

| | | Combined | | | | | | Commercial Banks | | | | | | City Banks | | | | | | Regional Banks | | | | | | Regional Banks 2nd Ass. | | | | | | Credit Associations | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | All | High | Med | Low | Urb | Rur | All | High | Med | Low | Urb | Rur | All | High | Med | Low | Urb | Rur | All | High | Med | Low | Urb | Rur | All | High | Med | Low | Urb | Rur | All | High | Med | Low | Urb | Rur |
| SCORE-D × SCORE-F | Coef. | 0.920 | 0.924 | 0.907 | 0.933 | 0.940 | 0.906 | 0.951 | 0.960 | 0.934 | 0.947 | 0.963 | 0.942 | 0.990 | 0.990 | — | — | 0.990 | — | 0.959 | 0.955 | 0.960 | 0.971 | 0.973 | 0.956 | 0.919 | 0.930 | 0.894 | 0.919 | 0.882 | 0.924 | 0.920 | 0.922 | 0.968 | 0.930 | 0.937 | 0.905 |
| | Signif. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | — | — | 0.000 | — | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | No. Obs. | 253 | 133 | 60 | 60 | 89 | 164 | 112 | 43 | 34 | 35 | 29 | 83 | 8 | 8 | 0 | 0 | 8 | 0 | 62 | 21 | 19 | 22 | 11 | 51 | 42 | 14 | 15 | 13 | 10 | 32 | 141 | 90 | 26 | 25 | 60 | 81 |
| SCORE-D × SCORE-T | Coef. | — | — | — | — | — | — | 0.381 | 0.068 | 0.336 | 0.486 | 0.438 | 0.296 | 0.936 | 0.936 | — | — | 0.936 | — | 0.241 | 0.142 | 0.151 | 0.399 | 0.212 | 0.266 | −0.011 | 0.060 | −0.210 | 0.164 | −0.036 | 0.010 | 0.062 | 0.043 | 0.100 | 0.104 | 0.056 | 0.086 |
| | Signif. | — | — | — | — | — | — | 0.006 | 0.354 | 0.026 | 0.002 | 0.010 | 0.004 | 0.000 | 0.000 | — | — | 0.000 | — | 0.029 | 0.270 | 0.268 | 0.033 | 0.266 | 0.032 | 0.475 | 0.423 | 0.235 | 0.306 | 0.463 | 0.478 | 0.231 | 0.344 | 0.313 | 0.310 | 0.335 | 0.222 |
| | No. Obs. | — | — | — | — | — | — | 112 | 43 | 34 | 35 | 28 | 83 | 8 | 8 | — | — | 8 | — | 62 | 21 | 19 | 22 | 11 | 51 | 42 | 13 | 15 | 13 | 10 | 30 | 141 | 90 | 26 | 25 | 60 | 81 |
| SCORE-D × SCORE-C | Coef. | — | — | — | — | — | — | 0.354 | 0.086 | 0.486 | 0.488 | 0.550 | 0.296 | 0.800 | 0.800 | — | — | 0.800 | — | 0.341 | 0.250 | 0.210 | 0.530 | 0.380 | 0.352 | 0.104 | 0.250 | −0.180 | 0.367 | 0.186 | 0.121 | 0.234 | 0.173 | 0.171 | 0.134 | 0.128 | 0.239 |
| | Signif. | — | — | — | — | — | — | 0.000 | 0.317 | 0.002 | 0.001 | 0.001 | 0.004 | 0.009 | 0.009 | — | — | 0.009 | — | 0.003 | 0.137 | 0.194 | 0.006 | 0.124 | 0.006 | 0.263 | 0.205 | 0.269 | 0.120 | 0.316 | 0.263 | 0.003 | 0.051 | 0.202 | 0.262 | 0.164 | 0.016 |
| | No. Obs. | — | — | — | — | — | — | 109 | 42 | 33 | 34 | 28 | 81 | 8 | 8 | — | — | 8 | — | 62 | 21 | 21 | 22 | 11 | 51 | 39 | 13 | 13 | 12 | 13 | 30 | 141 | 90 | 26 | 25 | 60 | 81 |
| SCORE-D × LCRED | Coef. | 0.666 | 0.663 | 0.711 | 0.668 | 0.655 | 0.680 | 0.476 | 0.508 | 0.463 | 0.220 | 0.498 | 0.377 | 0.247 | 0.247 | — | — | 0.247 | — | 0.343 | 0.504 | 0.362 | 0.119 | 0.798 | 0.179 | 0.432 | 0.449 | 0.422 | 0.238 | −0.057 | 0.448 | 0.265 | 0.173 | 0.147 | 0.076 | 0.248 | 0.239 |
| | Signif. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 | 0.102 | 0.003 | 0.000 | 0.278 | 0.278 | — | — | 0.278 | — | 0.003 | 0.010 | 0.064 | 0.299 | 0.002 | 0.104 | 0.002 | 0.054 | 0.059 | 0.217 | 0.437 | 0.005 | 0.003 | 0.051 | 0.202 | 0.294 | 0.028 | 0.016 |
| | No. Obs. | 253 | 133 | 60 | 60 | 89 | 164 | 112 | 43 | 34 | 35 | 29 | 83 | 8 | 8 | — | — | 8 | — | 62 | 21 | 19 | 22 | 11 | 51 | 42 | 14 | 15 | 13 | 13 | 42 | 141 | 90 | 26 | 25 | 60 | 81 |
| SCORE-D × CAP-03 | Coef. | −0.162 | −0.138 | −0.238 | −0.203 | −0.111 | −0.229 | 0.133 | 0.130 | 0.095 | 0.138 | 0.115 | 0.143 | −0.029 | −0.029 | — | — | −0.029 | — | 0.118 | 0.249 | 0.016 | 0.098 | 0.222 | 0.102 | −0.003 | 0.016 | −0.220 | 0.020 | 0.204 | −0.129 | 0.062 | 0.043 | 0.100 | 0.104 | 0.056 | 0.086 |
| | Signif. | 0.005 | 0.057 | 0.034 | 0.060 | 0.151 | 0.002 | 0.082 | 0.203 | 0.296 | 0.215 | 0.276 | 0.098 | 0.473 | 0.473 | — | — | 0.473 | — | 0.181 | 0.139 | 0.474 | 0.333 | 0.256 | 0.239 | 0.492 | 0.479 | 0.215 | 0.474 | 0.286 | 0.240 | 0.231 | 0.344 | 0.313 | 0.159 | 0.335 | 0.222 |
| | No. Obs. | 253 | 133 | 60 | 60 | 89 | 164 | 112 | 43 | 34 | 35 | 29 | 83 | 8 | 8 | — | — | 8 | — | 62 | 21 | 19 | 22 | 11 | 51 | 42 | 14 | 15 | 13 | 10 | 32 | 141 | 90 | 26 | 25 | 60 | 81 |
| SCORE-F × SCORE-T | Coef. | — | — | — | — | — | — | 0.292 | 0.408 | 0.192 | 0.260 | 0.494 | 0.231 | 0.951 | 0.951 | — | — | 0.951 | — | 0.238 | 0.048 | 0.221 | 0.395 | 0.131 | 0.271 | 0.007 | 0.275 | −0.064 | −0.109 | 0.375 | −0.031 | 0.007 | 0.275 | −0.064 | −0.109 | −0.002 | — |
| | Signif. | — | — | — | — | — | — | 0.001 | 0.004 | 0.142 | 0.069 | 0.004 | 0.019 | 0.000 | 0.000 | — | — | 0.000 | — | 0.031 | 0.418 | 0.182 | 0.034 | 0.351 | 0.027 | 0.484 | 0.182 | 0.415 | 0.368 | 0.160 | 0.435 | 0.484 | 0.160 | 0.233 | 0.310 | 0.492 | — |
| | No. Obs. | — | — | — | — | — | — | 109 | 42 | 33 | 34 | 28 | 81 | 8 | 8 | — | — | 8 | — | 62 | 21 | 21 | 22 | 11 | 51 | 39 | 13 | 14 | 13 | 12 | 30 | 141 | 90 | 26 | 25 | 60 | — |
| SCORE-F × SCORE-C | Coef. | — | — | — | — | — | — | 0.341 | 0.465 | 0.182 | 0.387 | 0.530 | 0.286 | 0.736 | 0.736 | — | — | 0.736 | — | 0.319 | 0.167 | 0.244 | 0.503 | 0.304 | 0.339 | 0.076 | 0.349 | −0.029 | 0.086 | 0.337 | 0.072 | 0.076 | 0.349 | 0.149 | 0.101 | 0.478 | — |
| | Signif. | — | — | — | — | — | — | 0.000 | 0.001 | 0.156 | 0.012 | 0.002 | 0.005 | 0.019 | 0.019 | — | — | 0.019 | — | 0.006 | 0.235 | 0.157 | 0.009 | 0.181 | 0.008 | 0.322 | 0.121 | 0.461 | 0.395 | 0.160 | 0.354 | 0.006 | 0.121 | 0.233 | 0.316 | 0.478 | — |
| | No. Obs. | — | — | — | — | — | — | 109 | 42 | 33 | 34 | 28 | 81 | 8 | 8 | — | — | 8 | — | 62 | 21 | 21 | 22 | 11 | 51 | 39 | 13 | 14 | 13 | 12 | 30 | 141 | 90 | 26 | 25 | 60 | — |
| SCORE-F × LCRED | Coef. | 0.533 | 0.531 | 0.557 | 0.520 | 0.567 | 0.505 | 0.432 | 0.446 | 0.451 | 0.229 | 0.446 | 0.358 | 0.259 | 0.259 | — | — | 0.259 | — | 0.219 | 0.361 | 0.242 | 0.041 | 0.690 | 0.059 | 0.369 | 0.404 | 0.277 | 0.073 | −0.195 | 0.400 | 0.220 | 0.076 | 0.147 | 0.076 | 0.248 | 0.238 |
| | Signif. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.004 | 0.093 | 0.001 | 0.000 | 0.267 | 0.267 | — | — | 0.267 | — | 0.044 | 0.054 | 0.160 | 0.427 | 0.009 | 0.059 | 0.008 | 0.076 | 0.294 | 0.406 | 0.437 | 0.012 | 0.019 | 0.237 | 0.358 | 0.028 | 0.016 | 0.016 |
| | No. Obs. | 253 | 133 | 60 | 60 | 89 | 164 | 112 | 43 | 34 | 35 | 29 | 83 | 8 | 8 | — | — | 8 | — | 62 | 21 | 19 | 22 | 11 | 51 | 42 | 14 | 15 | 13 | 10 | 32 | 141 | 90 | 26 | 25 | 60 | 81 |
| SCORE-F × CAP-03 | Coef. | −0.083 | −0.097 | −0.033 | −0.125 | −0.100 | −0.073 | 0.165 | 0.100 | 0.275 | 0.133 | 0.059 | 0.217 | −0.051 | −0.051 | — | — | −0.051 | — | 0.105 | 0.200 | 0.072 | 0.060 | 0.135 | 0.101 | 0.022 | −0.038 | 0.018 | −0.156 | 0.038 | −0.089 | 0.034 | 0.006 | 0.149 | 0.101 | −0.002 | 0.097 |
| | Signif. | 0.095 | 0.133 | 0.403 | 0.171 | 0.174 | 0.176 | 0.041 | 0.262 | 0.058 | 0.223 | 0.381 | 0.025 | 0.453 | 0.453 | — | — | 0.453 | — | 0.209 | 0.192 | 0.385 | 0.396 | 0.346 | 0.240 | 0.445 | 0.449 | 0.474 | 0.306 | 0.458 | 0.313 | 0.346 | 0.478 | 0.233 | 0.316 | 0.492 | 0.194 |
| | No. Obs. | 253 | 133 | 60 | 60 | 89 | 164 | 112 | 43 | 34 | 35 | 29 | 83 | 8 | 8 | — | — | 8 | — | 62 | 21 | 19 | 22 | 11 | 51 | 42 | 14 | 15 | 13 | 10 | 32 | 141 | 90 | 26 | 25 | 60 | 81 |

50

**Table A1. (continued)**

Block key — **B1** = Banks and Credit Associations combined; **B2** = Commercial Banks; **B3** = City Banks (CITYB=1); **B4** = Regional Banks; **B5** = Regional Banks 2nd Ass. (REGB2=1); **B6** = Credit Associations (SHINK=1). For each block: All (overall); Competition: High (COM2=1), Medium, Low (COM1=1); Area: Urban (COM3=1), Rural. "–" = not available.

| Measure | Stat | B1 All | B1 High | B1 Med | B1 Low | B1 Urb | B1 Rur | B2 All | B2 High | B2 Med | B2 Low | B2 Urb | B2 Rur | B3 All | B3 High | B3 Med | B3 Low | B3 Urb | B3 Rur | B4 All | B4 High | B4 Med | B4 Low | B4 Urb | B4 Rur | B5 All | B5 High | B5 Med | B5 Low | B5 Urb | B5 Rur | B6 All | B6 High | B6 Med | B6 Low | B6 Urb | B6 Rur |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCORE-T × SCORE-C | Coef. | – | – | – | – | – | – | 0.942 | 0.902 | 0.964 | 0.950 | 0.896 | 0.949 | 0.734 | 0.734 | – | – | 0.734 | – | 0.944 | 0.865 | 0.974 | 0.944 | 0.918 | 0.947 | 0.940 | 0.903 | 0.958 | 0.956 | 0.748 | 0.951 | – | – | – | – | – | – |
| | Signif. | – | – | – | – | – | – | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.019 | 0.019 | – | – | 0.019 | – | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | – | – | – | – | – | – |
| | No. Obs. | – | – | – | – | – | – | 109 | 42 | 33 | 34 | 28 | 81 | 8 | 8 | 0 | 0 | 8 | 0 | 62 | 21 | 19 | 22 | 11 | 51 | 39 | 13 | 14 | 12 | 9 | 30 | – | – | – | – | – | – |
| SCORE-T × LCRED | Coef. | – | – | – | – | – | – | 0.194 | 0.287 | 0.077 | 0.198 | 0.584 | 0.078 | 0.159 | 0.159 | – | – | 0.159 | – | 0.021 | 0.050 | -0.078 | 0.117 | 0.333 | -0.015 | -0.119 | -0.120 | -0.199 | 0.060 | -0.195 | -0.090 | – | – | – | – | – | – |
| | Signif. | – | – | – | – | – | – | 0.018 | 0.028 | 0.332 | 0.117 | 0.001 | 0.234 | 0.353 | 0.353 | – | – | 0.353 | – | 0.435 | 0.412 | 0.372 | 0.302 | 0.159 | 0.456 | 0.218 | 0.336 | 0.248 | 0.412 | 0.308 | 0.301 | – | – | – | – | – | – |
| | No. Obs. | – | – | – | – | – | – | 117 | 45 | 34 | 38 | 28 | 89 | 8 | 8 | 0 | 0 | 8 | 0 | 64 | 22 | 20 | 22 | 11 | 53 | 45 | 15 | 14 | 16 | 9 | 36 | – | – | – | – | – | – |
| SCORE-T × CAP-03 | Coef. | – | – | – | – | – | – | 0.282 | 0.113 | 0.341 | 0.377 | 0.101 | 0.327 | 0.017 | 0.017 | – | – | 0.017 | – | 0.219 | 0.147 | 0.219 | 0.285 | 0.135 | 0.242 | 0.205 | -0.070 | 0.296 | 0.437 | 0.029 | 0.255 | – | – | – | – | – | – |
| | Signif. | – | – | – | – | – | – | 0.001 | 0.231 | 0.024 | 0.010 | 0.304 | 0.001 | 0.484 | 0.484 | – | – | 0.484 | – | 0.041 | 0.257 | 0.177 | 0.099 | 0.346 | 0.040 | 0.088 | 0.401 | 0.152 | 0.045 | 0.470 | 0.066 | – | – | – | – | – | – |
| | No. Obs. | – | – | – | – | – | – | 117 | 45 | 34 | 38 | 28 | 89 | 8 | 8 | 0 | 0 | 8 | 0 | 64 | 22 | 20 | 22 | 11 | 53 | 45 | 15 | 14 | 16 | 9 | 36 | – | – | – | – | – | – |
| SCORE-C × LCRED | Coef. | – | – | – | – | – | – | 0.246 | 0.578 | -0.013 | 0.227 | 0.588 | 0.123 | -0.089 | -0.089 | – | – | -0.089 | – | 0.157 | 0.545 | -0.025 | 0.186 | 0.417 | 0.120 | -0.056 | 0.320 | -0.301 | 0.168 | -0.063 | -0.038 | – | – | – | – | – | – |
| | Signif. | – | – | – | – | – | – | 0.005 | 0.000 | 0.471 | 0.098 | 0.001 | 0.137 | 0.417 | 0.417 | – | – | 0.417 | – | 0.112 | 0.005 | 0.459 | 0.203 | 0.101 | 0.200 | 0.368 | 0.143 | 0.148 | 0.301 | 0.436 | 0.422 | – | – | – | – | – | – |
| | No. Obs. | – | – | – | – | – | – | 109 | 42 | 33 | 34 | 28 | 81 | 8 | 8 | 0 | 0 | 8 | 0 | 62 | 21 | 19 | 22 | 11 | 51 | 39 | 13 | 14 | 12 | 9 | 30 | – | – | – | – | – | – |
| SCORE-C × CAP-03 | Coef. | – | – | – | – | – | – | 0.272 | 0.260 | 0.262 | 0.291 | 0.251 | 0.282 | 0.360 | 0.360 | – | – | 0.360 | – | 0.213 | 0.296 | 0.236 | 0.186 | 0.226 | 0.222 | 0.205 | -0.035 | 0.221 | 0.425 | 0.237 | 0.236 | – | – | – | – | – | – |
| | Signif. | – | – | – | – | – | – | 0.002 | 0.048 | 0.071 | 0.047 | 0.099 | 0.005 | 0.190 | 0.190 | – | – | 0.190 | – | 0.048 | 0.096 | 0.165 | 0.204 | 0.252 | 0.059 | 0.105 | 0.454 | 0.224 | 0.084 | 0.270 | 0.104 | – | – | – | – | – | – |
| | No. Obs. | – | – | – | – | – | – | 109 | 42 | 33 | 34 | 28 | 81 | 8 | 8 | 0 | 0 | 8 | 0 | 62 | 21 | 19 | 22 | 11 | 51 | 39 | 13 | 14 | 12 | 9 | 30 | – | – | – | – | – | – |
| LCRED × CAP-03 | Coef. | -0.280 | -0.294 | -0.282 | -0.311 | -0.297 | -0.277 | 0.242 | 0.027 | 0.446 | 0.513 | 0.043 | 0.369 | -0.120 | -0.120 | – | – | -0.120 | – | 0.170 | 0.302 | 0.033 | 0.186 | 0.172 | 0.200 | 0.138 | -0.296 | 0.151 | 0.533 | -0.040 | 0.070 | -0.198 | -0.275 | -0.100 | -0.166 | -0.335 | -0.071 |
| | Signif. | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.003 | 0.426 | 0.003 | 0.000 | 0.407 | 0.000 | 0.388 | 0.388 | – | – | 0.388 | – | 0.090 | 0.086 | 0.446 | 0.203 | 0.306 | 0.075 | 0.162 | 0.102 | 0.288 | 0.014 | 0.447 | 0.336 | 0.000 | 0.000 | 0.177 | 0.075 | 0.000 | 0.154 |
| | No. Obs. | 451 | 211 | 124 | 116 | 149 | 302 | 125 | 50 | 36 | 39 | 33 | 92 | 8 | 8 | 0 | 0 | 8 | 0 | 64 | 22 | 20 | 22 | 11 | 53 | 53 | 20 | 16 | 17 | 14 | 39 | 326 | 161 | 88 | 77 | 116 | 210 |
| Disclosure Reports | Coef. | -0.292 | -0.312 | -0.223 | -0.395 | -0.315 | -0.307 | 0.231 | 0.020 | 0.454 | 0.463 | 0.067 | 0.349 | -0.120 | -0.120 | – | – | -0.120 | – | 0.161 | 0.296 | 0.041 | 0.186 | 0.172 | 0.186 | 0.168 | -0.343 | 0.143 | 0.537 | 0.184 | 0.067 | -0.227 | -0.266 | -0.027 | -0.548 | -0.343 | -0.086 |
| | Signif. | 0.000 | 0.000 | 0.043 | 0.001 | 0.001 | 0.000 | 0.007 | 0.450 | 0.003 | 0.003 | 0.366 | 0.001 | 0.388 | 0.388 | – | – | 0.388 | – | 0.106 | 0.097 | 0.433 | 0.203 | 0.306 | 0.096 | 0.144 | 0.115 | 0.306 | 0.029 | 0.305 | 0.358 | 0.003 | 0.006 | 0.448 | 0.002 | 0.004 | 0.223 |
| | No. Obs. | 253 | 133 | 60 | 60 | 89 | 164 | 112 | 43 | 34 | 35 | 29 | 83 | 8 | 8 | 0 | 0 | 8 | 0 | 62 | 21 | 20 | 22 | 11 | 51 | 42 | 14 | 15 | 13 | 10 | 32 | 141 | 90 | 26 | 25 | 60 | 81 |
| Business Result Briefs | Coef. | – | – | – | – | – | – | 0.261 | 0.034 | 0.468 | 0.510 | 0.067 | 0.376 | -0.120 | -0.120 | – | – | -0.120 | – | 0.170 | 0.302 | 0.033 | 0.186 | 0.172 | 0.200 | 0.176 | -0.319 | 0.108 | 0.434 | 0.276 | 0.041 | – | – | – | – | – | – |
| | Signif. | – | – | – | – | – | – | 0.002 | 0.412 | 0.003 | 0.001 | 0.367 | 0.000 | 0.388 | 0.388 | – | – | 0.388 | – | 0.090 | 0.086 | 0.446 | 0.203 | 0.306 | 0.075 | 0.124 | 0.123 | 0.356 | 0.047 | 0.236 | 0.406 | – | – | – | – | – | – |
| | No. Obs. | – | – | – | – | – | – | 117 | 45 | 34 | 38 | 28 | 89 | 8 | 8 | 0 | 0 | 8 | 0 | 64 | 22 | 20 | 22 | 11 | 53 | 45 | 15 | 14 | 16 | 9 | 36 | – | – | – | – | – | – |
| Combined Score | Coef. | – | – | – | – | – | – | 0.237 | 0.018 | 0.469 | 0.460 | 0.067 | 0.355 | -0.120 | -0.120 | – | – | -0.120 | – | 0.161 | 0.296 | 0.041 | 0.186 | 0.172 | 0.186 | 0.170 | -0.336 | 0.108 | 0.446 | 0.276 | 0.037 | – | – | – | – | – | – |
| | Signif. | – | – | – | – | – | – | 0.006 | 0.456 | 0.003 | 0.003 | 0.367 | 0.001 | 0.388 | 0.388 | – | – | 0.388 | – | 0.106 | 0.097 | 0.433 | 0.203 | 0.306 | 0.096 | 0.151 | 0.131 | 0.356 | 0.073 | 0.236 | 0.422 | – | – | – | – | – | – |
| | No. Obs. | – | – | – | – | – | – | 109 | 42 | 33 | 34 | 28 | 81 | 8 | 8 | 0 | 0 | 8 | 0 | 62 | 21 | 19 | 22 | 11 | 51 | 39 | 13 | 14 | 12 | 9 | 30 | – | – | – | – | – | – |

(Row label, rotated: "Cases with available" — applies to Disclosure Reports, Business Result Briefs, and Combined Score.)

## Table A1. (continued)

*Regression Analysis (Ordinary least squares)[1]*

| Regressors: | (I-A)[2] SCORE-D | (I-B)[2] SCORE-D | (I-C)[2] SCORE-V | (I-D)[2] SCORE-V | (I-E)[2] SCORE-D | (I-F)[2] SCORE-D | (I-G)[2] SCORE-V | (I-H)[2] SCORE-V | (II-A)[2,3] SCORE-D | (II-B)[2,3] SCORE-V | (II-C)[2,3] SCORE-D | (II-D)[2,3] SCORE-V | (III-A)[4] SCORE-V | (III-B)[4] SCORE-V | (IV-A)[4] SCORE-T | (IV-B)[4] SCORE-T | (IV-C)[4] SCORE-T | (IV-D)[4] SCORE-T | (V-A)[4] SCORE-D | (V-B)[4] SCORE-D | (VI-A)[4] SCORE-C | (VI-B)[4] SCORE-C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (Constant) | 5.0023 [.038] | 6.5199 [.041] | -3.9428 [.280] | -1.6901 [.740] | 5.3898 [.015] | 5.1656 [.123] | -3.2373 [.343] | -3.9027 [.441] | -2.4877 [.829] | -25.2687 [.149] | -7.3141 [.544] | -32.9341 [.085] | -2.1375 [.407] | -1.6576 [.513] | 10.1568 [.000] | 8.6328 [.006] | 10.4177 [.000] | 9.0473 [.003] | 6.1981 [.001] | 6.4595 [.000] | 11.6695 [.000] | 12.2727 [.000] |
| LCRED | 0.6844 [.002] | 0.5474 [.065] | 0.8662 [.011] | 0.6489 [.173] | 0.6668 [.002] | 0.6885 [.034] | 0.8347 [.011] | 0.8884 [.073] | 1.1264 [.262] | 2.5314 [.100] | 1.7292 [.146] | 3.6176 [.056] | 0.7250 [.004] | 0.6964 [.004] | -0.1476 [.536] | 0.0393 [.902] | -0.1530 [.451] | 0.0222 [.944] | 0.6123 [.000] | 0.5931 [.000] | 0.1057 [.515] | 0.0513 [.735] |
| CAP-03 | 0.0510 [.044] | 0.0572 [.510] | 0.0575 [.089] | 0.0717 [.596] | 0.0489 [.044] | 0.0530 [.556] | 0.0544 [.089] | 0.0618 [.660] | 0.0896 [.248] | 0.1839 [.111] | 0.1208 [.130] | 0.2336 [.058] | 0.0288 [.790] | 0.0315 [.768] | 0.2371 [.024] | 0.1981 [.098] | 0.2366 [.021] | 0.1957 [.100] | 0.0146 [.839] | 0.0159 [.821] | 0.2054 [.017] | 0.2058 [.014] |
| SHNK | -1.8830 [.000] | 6.2448 [.105] | -1.5047 [.008] | 6.1069 [.354] | -1.7310 [.000] | 1.8310 [.716] | -1.2167 [.019] | -3.4170 [.709] | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| SHNK×LCRED | — | -0.7296 [.048] | — | -0.6644 [.286] | — | -0.3534 [.481] | — | 0.2338 [.800] | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| SHNK×CAP-03 | — | -0.0621 [.493] | — | -0.0718 [.610] | — | -0.0205 [.838] | — | 0.0137 [.929] | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CITYB | -0.2902 [.700] | -0.1228 [.889] | -0.4544 [.708] | 0.0276 [.985] | -0.1690 [.813] | -0.4102 [.684] | -0.1827 [.874] | -0.4132 [.802] | — | — | — | — | -0.0700 [.952] | -0.2312 [.851] | 1.8329 [.008] | 1.1714 [.144] | 1.9937 [.011] | 1.2180 [.180] | -0.1052 [.887] | -0.2397 [.755] | 1.4310 [.008] | 1.4375 [.014] |
| REGB2 | -0.2919 [.291] | 3.0633 [.357] | -1.0099 [.022] | 2.1858 [.678] | -0.2527 [.358] | 2.5193 [.440] | -0.9389 [.030] | 0.3928 [.941] | — | — | — | — | -0.7186 [.153] | -0.7833 [.122] | -0.9157 [.044] | 0.1077 [.984] | -0.9147 [.044] | 0.2311 [.953] | -0.0300 [.924] | -0.0715 [.822] | -3.3220 [.399] | -0.3749 [.337] |
| REGB2×LCRED | — | -0.2543 [.407] | — | -0.2213 [.671] | — | -0.1415 [.639] | — | 0.0311 [.953] | — | — | — | — | — | — | — | -0.2729 [.622] | — | -0.2914 [.476] | — | — | — | — |
| REGB2×CAP-03 | — | -0.0992 [.589] | — | -0.1246 [.627] | — | -0.1655 [.332] | — | -0.2378 [.335] | — | — | — | — | — | — | — | 0.2202 [.404] | — | 0.2159 [.394] | — | — | — | — |
| COM1 | 0.2256 [.310] | 0.0567 [.907] | 0.4508 [.151] | 0.3617 [.631] | — | — | — | — | 0.4499 [.427] | 1.1828 [.141] | — | — | 0.4857 [.317] | — | 0.3842 [.469] | 0.3443 [.628] | — | — | 0.2066 [.515] | — | 0.3136 [.535] | — |
| COM2 | 0.3368 [.096] | 0.2881 [.524] | 0.5258 [.081] | 0.3420 [.642] | — | — | — | — | 0.9684 [.233] | 2.1776 [.068] | — | — | 0.3438 [.526] | — | 0.14257 [.787] | 0.3898 [.529] | — | — | 0.1848 [.581] | — | -0.1645 [.684] | — |
| COM3 | — | — | — | — | 0.0626 [.741] | 0.2308 [.687] | -0.0359 [.899] | 0.1390 [.879] | — | — | -0.4179 [.417] | -1.2560 [.119] | — | 0.3508 [.565] | — | — | -0.1277 [.717] | 0.1613 [.730] | — | 0.2817 [.450] | — | — |
| SHNK×COM1 | — | — | — | -0.4181 [.575] | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| SHNK×COM2 | — | — | — | -0.2587 [.751] | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| SHNK×COM3 | — | — | — | — | — | — | — | -0.4490 [.676] | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| REGB2×COM1 | — | 0.5915 [.468] | — | 0.4944 [.703] | — | — | — | — | — | — | — | — | — | — | — | 0.1232 [.910] | — | — | — | — | — | — |
| REGB2×COM2 | — | 0.4591 [.628] | — | 0.6908 [.652] | — | — | — | — | — | — | — | — | — | — | — | -0.7884 [.572] | — | — | — | — | — | — |
| REGB2×COM3 | — | — | — | — | — | 0.3062 [.688] | — | 0.5901 [.638] | — | — | — | — | — | — | — | — | — | -0.8409 [.299] | — | — | — | — |
| MILLS | 1.3257 [.093] | -1.4612 [.200] | 1.5797 [.182] | -1.2958 [.506] | 1.1286 [.095] | 0.2410 [.877] | 1.2114 [.232] | 1.9706 [.457] | 3.1491 [.351] | 7.6772 [.128] | 4.2218 [.195] | 9.0958 [.074] | — | — | — | — | — | — | — | — | — | -0.1099 [.723] |
| Number of observations | 253 | 253 | 253 | 253 | 253 | 253 | 253 | 253 | 141 | 141 | 141 | 141 | 112 | 112 | 117 | 117 | 117 | 117 | 112 | 112 | 109 | 109 |
| Adjusted R-squared | 0.5107 | 0.5021 | 0.3013 | 0.2802 | 0.5112 | 0.5053 | 0.2974 | 0.2888 | 0.0538 | 0.0914 | 0.0664 | 0.1068 | 0.1682 | 0.1722 | 0.1064 | 0.0888 | 0.1099 | 0.0986 | 0.1869 | 0.1961 | 0.0970 | 0.0958 |
| F (zero slopes) | 33.8842 [.000] | 16.8805 [.000] | 14.5813 [.000] | 7.1311 [.000] | 38.6426 [.000] | 20.7984 [.000] | 16.2383 [.000] | 8.8697 [.000] | 2.5924 [.028] | 3.8169 [.003] | 3.4899 [.010] | 5.1852 [.001] | 4.7405 [.000] | 5.6187 [.000] | 3.3028 [.005] | 2.1300 [.028] | 3.8637 [.003] | 2.5858 [.013] | 5.2513 [.000] | 6.4142 [.000] | 2.9344 [.011] | 3.2891 [.009] |

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**Table A1. (concluded)**

*Variables: SCORE-D* – CDS (credit disclosure score) in disclosure reports, *SCORE-T* – CDS in business result briefs (banks only), *SCORE-C* – combined CDS in disclosure reports and business result briefs (banks only), *CRED* – credit assets in March 2003 (in ¥ billion; FRL-based assets for banks or amount of loans and bills discounted for credit associations), *LCRED* – the natural logarithm of *CRED*, *CAP-03* – capital adequacy ratio in March 2003, *SHINK* – a dummy variable for credit association cases, *CITYB* – a dummy variable for city bank cases, *REGB2* – a dummy variable for the cases of the 2nd association of regional banks, *COM1* – a dummy variable for the low competition zone, *COM2* – a dummy variable for the high competition zone, *COM3* – a dummy variable for urban areas, *MILLS* – the inverse Mills ratio function of residuals in the first step (probit) regression.

*Notes*: 1. P-values (based on heteroscedastic-consistent errors) are in parentheses. 2. Corrected for a sample selection bias using the Heckman (two-step) procedure. Regressors used in the first step (probit) regression are the same as in the reported OLS regression but *MILLS*. 3. Estimated over credit association cases. 4. Estimated over commercial bank cases.

*Data Source*: CDS values are calculated according to the weighting procedure of Table A2 by the data of disclosure reports and business result briefs (for financial year 2002) available from the corporate websites of banking organizations as of the beginning of March 2004.; credit asset and capital adequacy data - by the Keio Banking Database and Nikkei NEEDS database; market segmentation dummies – as set up in Table A3.

## Table A2. Disclosure index weighting factors

*Breakdown by sub-portfolios of credit products*
Total credit exposures by loans and bills vs. others ——— = 1.0
Loans and bills by type ——————— = 0.5
     by domestic vs. foreign exposures —————
     by variable vs. fixed interest rate ————— } MAX = 0.5
Acceptances and guarantees by type ——————— = 0.5

*Risk category transition matrix (structure by risk category)*
Total credit exposures by SAF borrower group ————
Total credit exposures by FRL asset category ———— } MAX = 1.0
SAF bor. gr. by current vs. past periods of impairment ——— = 0.5
FRL asset category by industry (sector) ————
FRL asset category by specific ("troubled") industry ———— } MAX = 1.0
RML category by industry (sector) ————

*Shared characteristics of each risk category*
Classification category definitions ——————— = 1.0

*Explanation of by-period changes in expected (estimated) loss rates*
(none) ——————————— = 2.0

*Distribution by the size of stand-alone exposures*
Number of borrowers by the size of exposure ————
Total loans and bills by the size of exposure ———— } MAX = 1.0

<div align="center">

**Non-impaired credit exposures**

</div>

*Size of exposure*
Total credit exposures by SAF non-impaired bor. group — = 1.0
Need special attention group itemized ——————— = 0.5
Loans and bills by home region vs. other regions ——— = 0.5
Loans and bills by small vs. other business borrowers ——— = 0.5
Loans and bills by housing loans vs. others ——— = 0.5
Loans and bills by industry (sector) ——————— = 0.5
Advances abroad by foreign region (country) ——— = 0.5

*Expected (estimated) loss rate + Effective rate of interest*
Expected total credit loss in the next period by type ——— = 1.0
Expected return on loans and bills in the next period ——
Expected average funding cost in the next period ——— } MIN = 0.5 ┐
Credit loss allowances by type ——————— = 0.5 ┤ SUM ┐
General ADL by SAF non-impaired bor. group ——— = 0.5 ┘ } MAX
Average rate of return on loans and bills ——— = 0.5 ┐ SUM ┘
Average funding cost ——————— = 0.5 ┘

*Current value and structure of collateral assets (guarantees) pledged*
Total loans and bills by type of collateral / guarantee ————
Guarantee endorsement by type of collateral / guarantee ———— } MAX = 0.5

*Number of stand-alone exposures*
Number of borrowers by SAF non-impaired bor. group — = 0.5
Number of borrowers by industry (sector) ————
Number of borrowers by small vs. other businesses ——— } MAX = 0.5
Number of borrowers by housing loans vs. others ————

*Prevailing maturity (duration)*
Loans and bills with fixed interest rate ——————— = 0.5
     by remaining term to maturity ————
     by short-term vs. long-term ———— } MAX = 0.5

**Impaired credit exposures**

*Size of exposure*

Total credit exposures by SAF impaired borrower group ⎤
FRL (impaired) asset category ⎦ MAX = 1.0

SAF impaired bor. gr. by current vs. past periods of imp. ⎤
Total FRL (impaired) assets by period of impairment ⎬ MAX = 1.0
FRL impaired categories by period of impairment ⎦

Total FRL (impaired) assets net of collateral / guarantees ⎤
Total RMLs net of collateral / guarantees ⎦ MAX = 0.5

SAF impaired borrower group by risk category ⎤
FRL impaired categories net of collateral / guarantees ⎬ MAX = 0.5
RML categories net of collateral / guarantees ⎦

*Expected (estimated) loss rate*

Expected total credit loss in the next period by type ——— = 1.0

Expected return on loans and bills in the next period ⎤
Expected average funding cost in the next period ⎦ MIN = 0.5

Specific ADL by SAF impaired borrower group
    by risk category — = 0.5 ⎤
ADL by FRL (impaired) asset categories — ⎬ MAX = 1.0
ADL by RML categories — ⎦

Charges against specific ADL — = 0.5 ⎤
Loan and bill (direct) write-offs — = 0.5 ⎬ SUM ⎤ MAX
Disposed of loans and bills by type of disposal — = 1.0 ⎦ ⎦

*Cumulative collection performance*

Remaining FRL assets by period of impairment — = 0.5
    by type of disposal — = 0.5

*Number of stand-alone exposures*

Defaulted in the current period by SAF impaired bor. gr. ⎤
Bankruptcies over the current period by SAF bor. group ⎦ MAX = 0.5

*Notes*:
"MAX = weight" indicates situations in which a non-zero weight is assigned if any of the corresponding disclosures is present; "MIN = weight" – a non-zero weight is assigned only if all the corresponding disclosures are present; "SUM" – scores of the corresponding disclosures are summed up; "MAX" – the highest score among the corresponding disclosures is chosen.

**Table A3. Geographic segmentation by market competition level**

| Prefecture | Loan Market Competition[1] | | | Area[2] | |
|---|---|---|---|---|---|
| | High (*COM2*=1) | Medium | Low (*COM1*=1) | Urban (*COM3*=1) | Rural (*COM3*=0) |
| Hokkaido | × | | | × | |
| Aomori | | | × | | × |
| Iwate | | | × | | × |
| Miyagi | | | × | | × |
| Akita | | | × | | × |
| Yamagata | | | × | | × |
| Fukushima | | | × | | × |
| Tochigi | | | × | | × |
| Ibaraki | | | × | | × |
| Gunma | | × | | | × |
| Saitama | × | | | × | |
| Chiba | × | | | × | |
| Tokyo | × | | | × | |
| Kanagawa | × | | | × | |
| Niigata | | × | | | × |
| Toyama | | × | | | × |
| Ishikawa | | × | | | × |
| Fukui | × | | | | × |
| Yamanashi | | × | | | × |
| Nagano | | × | | | × |
| Gifu | × | | | | × |
| Shizuoka | × | | | | × |
| Aichi | × | | | × | |
| Mie | × | | | | × |
| Shiga | | × | | | × |
| Kyoto | × | | | × | |
| Osaka | × | | | × | |
| Hyogo | × | | | × | |
| Nara | | × | | | × |
| Wakayama | | × | | | × |
| Tottori | | × | | | × |
| Shimane | | × | | | × |
| Okayama | | × | | | × |
| Hiroshima | | × | | | × |
| Yamaguchi | | | × | | × |
| Tokushima | | | × | | × |
| Kagawa | | × | | | × |
| Ehime | | | × | | × |
| Kochi | | | × | | × |
| Fukuoka | × | | | | × |
| Saga | | × | | | × |
| Nagasaki | | × | | | × |
| Kumamoto | | | × | | × |
| Oita | | | × | | × |
| Miyazaki | | | × | | × |
| Kagoshima | | × | | | × |
| Okinawa | | | × | | × |

*Notes*:
1. Based on the cluster analysis (squared Euclidian distances) of prefecture dummy coefficients for risk-adjusted interest rates of regional banks and credit associations in Kano and Tsutsui (2000, Table 5).
2. As suggested in Kano and Tsutsui (2000, p. 21).