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Determinants of Small Business Loan Approval: Evidence from Japanese Survey after 1997 Financial Crisis

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Determinants of Small Business Loan Approval:

Evidence from Japanese Survey after 1997 Financial Crisis

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Abstract

We examine the determinants of small business loan approval under the credit squeezes after 1997 financial crisis in Japan. Owualah (2002, *Japan and the World Economy*) demonstrates that advantage usually conferred by long-standing banking relationship and main bank ties upon firms to favored access to bank credits is no longer guaranteed. We find that the probability of loan approval is positively associated with employment size of small businesses, loan requests made to governmental financial institutions for small businesses, and for investment in fixed assets. We also find that the loan request in 1998 is negatively associated with the probability of loan approval. Furthermore, regarding small business-bank relationship, companies that have seriously considered switching banks in the past three years have lower loan approval rates.

JEL classification: G21

Keywords: Small business; Loan approval; Borrowing constraints; Financial crisis

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1. Introduction

The accessibility to a bank loan is crucial for small businesses. For existing conventional small businesses, the main financing source for working and development capital is a bank loan (Ministry of Finance, 2000; ESRC Centre for Business Research, University of Cambridge, 2000). The significant constraints on bank financing are widely perceived due to informational asymmetry between small businesses and banks (Stiglitz and Weiss, 1981). In particular, availability of a bank loan in itself has deteriorated under the recessionary macroeconomic conditions (Buck et al., 1991; Cowling, 1997). However, the analysis on determinants of loan availability for small businesses has not been fully executed, in contrast to the massive amount of research concerning the 'terms' of a small business loan (i.e. price of credit and collateral) that have been accumulated (Petersen and Rajan, 1994; Berger and Udell, 1990, 1995; Leeth and Scott, 1989; Harhoff and Korting, 1998; Blackwell and Winters, 1997; Athavale and Edmister, 1999; Cowling, 1999a, 1999b).

The environment in which Japanese banks operate has become more competitive with respect to small business financing since the early 1970s. This coincided with a gradual increase in pressure to improve the quality of their lending services to small businesses. However, constraints on

lending to small businesses and service gaps have long been criticized by small business managers and academics alike (Kawaguchi, 1974; Kutsuna, 1997). Under the severe macroeconomic conditions in the 1990s, particularly after the financial crisis in November 1997, the availability of bank loans is the focal point for small businesses.

The explicit purpose of this paper is to examine the determinants of small business loan approval under the credit squeezes after 1997 financial crisis in Japan. The rest of this paper is organized as follows: First, we review the previous research in the US and the UK. Second, we present the data source used and the descriptive statistics of our sample firms. Third, after the definition of variables used in the regression analysis is presented, we provide evidence using logit regressions based on these data. Lastly, we summarize our findings and suggest further research.

2. Previous research

Buck et al. (1991) in the US[3] and Cowling (1997) in the UK[4] analyze the determinants of small business loan approval. Buck et al. (1991) report that 6-22% of small businesses are denied loans, based on the data for three surveys conducted in 1980, 1982 and 1984. Cowling (1997) reports that

[3] Petersen and Rajan (1994) examine the determinants of the small firm's debt ratio in relation to the availability of credit.

[4] The biannual research by the ESRC Centre for Business Research, University of Cambridge reported refusal rates of 17.1% in 1991-93, 14.6% in 1994-95, 16.5% in 1995-97, and 9.8% in 1997-99, respectively.

12.8% of loan requests were turned down by banks, based on the data collected from an Association of British Chambers of Commerce survey. Both Buck et al. (1991) and Cowling (1997) ask not "if you made an application last year, were you turned down?" but "what happened to your most recent loan application?"

Buck et al. (1991) in the US show that business age is positively related to the loan approval probability. This indicates that young businesses have a higher likelihood of loan denial than mature businesses. Because the information gap with firms is larger in respect to early stage companies than to older companies with a long track record, older firms will have a higher probability of making a successful loan request (Petersen and Rajan, 1994; Cressy, 1996).

Also, they note that the probability of loan approval is smaller if the application was made at a large bank. The information gap with small firms will be more acute in national banks than in regionally-based, smaller banks. According to Bannock and Doran (1991) and Binks et al. (1991), smaller regionally-based banks have a much closer relationship with their small business customers than larger national banks.

Furthermore, Buck et al. (1991) indicate that above the 65% debt/equity threshold the probability of loan denial increases. However, in their study, the type of business organization (legal status) and industrial sectors that small businesses operate did not affect loan approval probabilities. Although Buck et al. (1991) do not explicitly examine growth in their regression analysis, it is

expected that small businesses with growing business activity (e.g. increasing sales revenue) will have a higher probability of loan approval according to Binks et al.(1993) and Cowling and Sugden (1993)[5].

Cowling (1997) in the UK found that the probability of making a successful loan request is positively associated with the amount of funding required, a scale effect. He also shows that loans for investment in fixed assets had higher approval rates. He interprets this as a signaling effect, in the sense that investment in fixed capital stock implies a longer-term commitment to the industry or marketplace.

Regarding the timing of the loan request, he examines the effect of 1990 and 1991 time dummies and indicates that the latter time dummy is negatively significantly related[6].

Cowling (1997) also considers the effect of small business-bank relationship on loan approval. As pointed out in Petersen and Rajan (1994), it is anticipated that a closer relationship between bank and borrower will result in an increased probability of a loan request. But, this relationship was not confirmed by the data. The recent research concerning the Japanese small

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[5] In terms of sales revenue, Binks et al. (1993), analyzing the information gap by sales revenue of small business customers, found evidence that there is a general pattern of smaller firms being less satisfied with bank services than larger firms. Cowling and Sugden (1993) also examine bank performance by sales revenue of firms and concluded that the smallest category of small firms needs greater support from their banks than is currently being provided.

[6] In the UK, the economy began its downward spiral into recession during 1990, but the actual trough was in 1991.

business finance by Owualah (2002) pointed out that rejection of a loan request has become a common phenomenon for both old and new customers or main bank and non-main bank customers alike.

Although Storey (1994) argues that limited liability gives a small firm credibility, Cowling (1997) and Buck et al. (1991) find no legal status or industry effects on loan approval. Furthermore, because the information gap is greater in small companies than in large companies (Berger and Udell, 1998), larger firms will have a higher probability of loan approval. Despite this, Cowling (1997) found no such relationship.

3. Data and descriptive statistics of sample firms

To examine the determinants of small business loan approval, we use the evidence from a random sample of Japanese small businesses collected from a postal survey conducted by the local government office in August 1998. The questionnaire was posted to 4,835 manufacturing firms located in Yao City, one of the small business district areas in Japan as are Ota and Higashi Osaka (Whittaker, 1997). The survey collects a variety of information about Japanese small business activities including financing from banks, together with information on the characteristics of small firms. Out of 553 respondents (response rate is 11.4%), the following 259 firms are excluded in the sample: (1) 36 firms with over 300 employees; (2) 217 firms that did not fully respond to the questions concerning the detail of bank borrowing; (3) 6 firms that responded that there was still no final

decision on the loan application. Thus, total data on 294 small and medium-sized manufacturing firms in Yao City is analyzed. Only manufacturing firms with fewer than 300 employees are included in our sample. As shown in Table 1, we need to note that our sample firms are relatively larger than the distribution of all establishments in Yao as indicated by *1999 Establishment and Enterprise Census of Japan*.

[Insert Table 1 & Table 2 about here]

The descriptive statistics of 294 sample firms are shown in Table 2. *Age*: the sample mean is 33 years, ranging from 3 to 96. *Net capital*: as for the amount of net capital, the sample mean is 19.35 million Yen (median is 10.00 million Yen). The number of firms with a net capital of more than 30 million Yen is only 21 out of 238 (8.8%). *Employment*: as for the employment size, the sample mean is 20 employees, ranging from 1 to 260 (median is 9 employees). The number of firms that employ fewer than 5 people dominated (36.1% of our sample firms). *Net sales*: the sample mean is 431 million Yen, ranging from 0.8 to 7,836 million Yen (median net sales is 120 million Yen) Respondents to the question concerning the sales trends for recent years showed that only 19.3% firms achieved net sales growth under the 1990s' severe macroeconomic conditions in Japan: sharply increasing 8 firms (2.8%); gradually increasing 48 firms (16.6%); stable 61 firms (21.0%); gradually decreasing 87 firms

(30.0%); sharply decreasing 86 firms (29.7%). *Legal status*: regarding the legal status of the firm, although not shown in the table, 71 (24.2%) and 4 (1.4%) out of 293 firms are sole proprietorship and partnership (called goumei-gaisya in Japan), respectively.

[Insert Figure 1, Figure 2, & Figure 3 about here]

Loan Request: The survey asks the most recent loan requested in line with Buck et al. (1991) and Cowling (1997). In 1998, 40.0% of firms sought a bank loan. A further 25.5% did so in 1997. Aside from the tiny proportion (0.7%) that had never sought a bank loan, the remainder had done so prior to 1996. As regards the timing of the loan request, we should note that in 1998 Japanese banks had decreased total amounts of loans outstanding relative to the previous year for the first time, as shown in Figure 1. In addition, according to the Bank of Japan *Short-term Economic Survey* of financial position for small manufacturing enterprises, Diffusion Index (%) of "Easy" minus "Tight" has sharply deteriorated after 1998 (see Figure 2). Also, the survey of lending attitude of financial institutions for small manufacturing enterprises, Diffusion Index of "Accommodative" minus "Severe" has sharply deteriorated after 1998 (see Figure 3). Due to the financial crisis in November 1997 (bankruptcies of Hokkaido Takushoku Bank, Sanyo Securities, and Yamaichi Securities), Japanese banks' attitude toward small business lending should have turned to be more negative since

1998.

For the most part firms sought either medium-longer term loans, 65.9% (Loans on Deeds), or shorter-term loans and discounts (Loans on Bills and Bills Discounted), 28.4%. Very few firms sought either a new overdraft facility, 3.5% or an extension to an existing facility, 1.4%. In Japan, overdraft facility is not a popular borrowing method in contrast to the US and the UK. Also, collateral is a powerful tool that allows financial institutions to offer credit on favorable terms to small businesses. Collateral may also reduce the cost of intermediation because a financial institution may be able to assess the value of pledged assets better than it can assess the value of the business as an on-going concern (Berger and Udell, 1998). Asked whether the property is owned by your firm or not, 164 out of 288 firms (56.9%) responded that they owned the property.

[Insert Table 3 about here]

Table 3 shows the type of banks from which small firms requested loans. For the most part firms sought loans from either City Banks (larger national banks), 28.5%, or Shinkin Banks (regionally based small banks), 34.0%. Also, 16.8% of sample firms sought governmental financial institutions for SMEs (National Finance Corporation, Japan Finance Corporation for Small Business, and Shoko Chukin Bank). As pointed out by Storey (1999), some firms may not apply because they

expect to be rejected (i.e. Discouraged Borrowers). However, we are sure that Discouraged Borrowers do not fit in to our analysis, based on the Japanese context of a high ratio of bank borrowing for micro and small firms (over 40% to total assets), and the historically important role of public financial institutions for micro and small firms.

Small Business-Bank Relationship: Petersen and Rajan (1994) shows that borrowing from multiple lenders reduces the availability of credit with regard to the benefit of building close ties with an institutional creditor. As to the question whether you use more than one bank in the course of your business or not, 65 out of 285 firms (22.8%) responded that they depend on the sole bank. 220 firms (77.2%) use more than one bank. In relation to firm size, the survey indicates that 45 (69.2%) out of 65 firms with less than 10 employees depend on one bank.

Furthermore, asked if you have ever seriously considered changing your main bank to another bank in the last three years, 72 out of 284 firms (25.4%) have considered changing the present main bank. 212 firms (74.6%) have not considered it. As the reasons for not considering it, 85 firms answered that they were satisfied with their current bank. Sixty-nine firms answered that there were possible repercussions from their current bank. Fifty-six firms said there are no real differences between banks. Forty-one firms never considered it. Only 6 firms said the present main bank is only bank in the locality.

[Insert Table 4 about here]

Small firms were asked about their main banks' performance on the nine bank characteristics. Table 4 summarized the evaluation of nine bank services by two sub-groups (one is firms that have seriously considered changing the present main bank, another is firms that have not considered it). On the nine bank characteristics, firms that have seriously considered changing their present main banks in the last three years (Group B) rated the present main banks' performance as bad / very bad, compared with firms that have not considered changing their present main banks in the last three years (Group A).

Loan Approval: we find that some 11.9% (35 out of 294 firms) of loan requests by small businesses were turned down by banks. This evidence is basically consistent with Buck et al. (1991) in the US and Cowling (1997) and CBRC (1996, 1998, 2000) in the UK.

4. Selection of variables and Regression results

In this section, analysis is conducted within a multivariate framework in which a logit model is fitted where the dependent variable [LA] equals 1 if the most recent loan request was approved by the bank and 0 if it was rejected by the bank. We estimate a logistic regression of the following form:

Loan approval by the bank [LA: 1, 0] = β_0 + β_1 firm-specific factors + β_2 bank and loan-specific

factors + β_3 small business-bank relationship factors + β_4 macroeconomic condition-related factors + ε

The dependent and independent variables entering the regressions are as follows: The independent variables are in four groups (firm-specific factors, bank and loan-specific factors, small business-bank relationship factors, and macroeconomic condition-related factors). Based on the results of the previous researches and the Japanese macroeconomic conditions we introduced in the previous section, the expected sign of each variable is also indicated in parentheses. Unfortunately, data concerning the amounts of loans requested[7] and capital structure of small firms (e.g. debt / equity) are not available from the survey.

[Dependent variable]

LA: If the most recent loan request was approved by the bank=1, rejected=0.

[Independent variable]

(1) Firm-specific factors

LEGAL: if firm had limited liability status=1, otherwise=0. (+ / ?)

LN(AGE): Log of firm age. (+)

LN(EMPLOY): log of number of employees. (+)

SALESGTH: if the sales revenue is increasing for recent years=1, otherwise=0. (+)

[7] In this survey, we can only use the data for the amounts of loans 'approved'.

PROPERTY: if land is owned by small business manager=1, otherwise=0. (+)

(2) Bank and loan-specific factors

SBANK: if customer sought funds from private financial institutions for small businesses (i.e. Regional Banks 2, Shinkin Banks, and Credit Cooperatives)=1, otherwise=0. (+)

PBANK: if customer sought funds from governmental financial institutions for SMEs (i.e. National Finance Corporation, Japan Finance Corporation for Small Business, and Shoko Chukin Bank)=1, otherwise=0. (+)

FA: If loan was for investment in fixed assets (Loans on Deeds)=1, otherwise=0. (+)

(3) Small business-bank relationship factors

TWOBANKS: if small firm depends for finance on a single financial institution=1, otherwise=0. (+)

BKCHG: if small firm has seriously considered the changing of its main bank for the last three years=1, otherwise=0. (-)

(4) Macroeconomic condition-related factors

T1998: Dummy variable if the year in which the loan was requested is 1998=1, otherwise=0. (-)

[Insert Table 5 about here]

Correlation coefficients for 11 independent variables are indicated in Table 5. As expected, correlation

coefficients between LEGAL and LN(EMPLOY) and between LN(AGE) and PROPERTY are high with coefficients of –0.486 and 0.440, respectively.

In Table 6 we report the results of logistic regressions about the probability that the most recent loan requested has been approved.

[Insert Table 6 about here]

All eleven explanatory variables were included in the model. The model is highly significant. Five explanatory variables were statistically significant at the 0.1 level. First, the sign on the LN(EMPLOY) coefficient is positive, suggesting that companies with fewer employees reported significantly lower probability of loan approval. Second, the sign on the PBANK coefficient is positive. This indicates that companies that sought funds from governmental financial institutions for SMEs generally reported higher probability of loan approval. Third, FA is also positively associated with loan approval at the 5% level. Loan for investment in fixed assets generally reported significantly higher possibility of approval. Fourth, the negative sign on the BKCHG coefficient indicates that companies that have seriously considered changing their main bank in the last three years reported significantly lower probability of loan approval. Fifth, the sign on the time variable T1998 coefficient is statistically negative at the 10% significance level. All signs on these five

variables are consistent with our *a priori* predictions.

Legal status does not affect the likelihood of loan approval as Buck et al. (1991) and Cowling (1997). Business age is not significantly related to the loan approval probability, although the sign on the LN(AGE) coefficient is positive. The sign on the TWOBANKS coefficient is not significant, in contrast to Petersen and Rajan (1994), which shows that borrowing from multiple lenders reduces the availability of credit.

5. Concluding remarks and further research

This paper has examined the determinants of small business loan approval, based on the Japanese survey data conducted in 1998. The results indicate that there were five key factors. Evidence from Japanese small manufacturing companies' data shows that loan approval is positively related to (employment) size of small businesses, loan request to governmental financial institutions for small businesses, and loan request for investment in fixed assets. Also, concerning small business-bank relationships, firms that have seriously considered changing their main bank in the last three years reported significantly lower probability of loan approval. We indicated that firms that have seriously considered changing their main bank were not satisfied with the present bank services. The closeness of the small firm and the bank relationship affects the increased availability of the loan. Regarding the macroeconomic conditions, the Japanese economy began its downward spiral into severe recession in

1998 after the financial crisis in November 1997. Loan applications in 1998 reported a significantly higher probability of being turned down.

Finally, despite the fact that we have established a series of important and interesting findings concerning the determinants of small business loan approval, there are many unanswered questions. Another potentially interesting avenue of research is the comparison of the lending activities of private financial institutions (banks) and governmental financial institutions for SMEs under the active debate on the raison d'être of public financial institutions in Japan. Also, we may need further analysis about the terms of loans approved in addition to the availability of loans, because banks may switch from 'quantity' to 'quality' lending during credit crunches brought on by unfavorable macroeconomic conditions.

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References

Athavale, M., Edmister, R.O., 1999, Borrowing Relationships, Monitoring, and the Influence on Loan Rates. Journal of Financial Research 22 (3), 341-352.

Bannock, G. and A. Doran, 1991, Business Banking in the 1990s: A New Era of Competition, Lafferty

Group.

Berger, A.N., Udell, G.F., 1990, Collateral, Loan Quality, and Bank Risk. Journal of Monetary Economics 25 (1), 21-42.

Berger, A.N., Udell, G.F., 1995, Relationship Lending and lines of Credit in Small Firm Finance. Journal of Business 68 (3), 351-381.

Berger, A.N., Udell, G.F., 1998, The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle. Journal of Banking & Finance 22 (6-8), 613-673.

Binks, M., Ennew, C.T. and Reed, G.V., 1991, Small Businesses and their Banks: An International Perspective. National Westminster Bank.

Binks, M., Ennew, C.T. and Reed, G.V., 1993, Small Businesses and their Banks 1992. Forum of Small Business, Knutsford.

Blackwell, D.W., Winters, D.B., 1997, Banking Relationships and the Effect of Monitoring on Loan Pricing. Journal of Financial Research 20 (2), 275-289.

Buck, A.J., Friedman, J. and W.C. Dunkelberg, 1991, Risk and Return in Small Business Lending: The Case of Commercial Banks, in: Yazdipour, R. (Ed.) Advances in Small Business Finance, Kluwer Academic Publishers, 121-137.

Cowling, M., 1997, Small Business Loan Requests: Who Gets the Cash? SME Centre Working Paper,

No.52., Warwick Business School.

Cowling, M., 1999a, The Incidence of Loan Collateralisation in Small Business Loan Contracts. Applied Economics Letters 6 (5), 291-293.

Cowling, M., 1999b, The Determination of Bank-Small Business Loan Premia. Applied Economics Letters 6 (4), 251-253.

Cowling, M., Samuels, J. and R. Sugden, 1991, Small Firms and Clearing Banks: A Sterile, Uncommunicative and Unimaginative Relationship, Report prepared for the Association of British Chambers of Commerce.

Cowling, M., Sugden, R., 1995, Small Firm Lending Contracts: Do Banks Differentiate Between Firms. Journal of Small Business Finance 4 (1), 87-98.

Cressy, R., 1996, Are Business Start-ups Debt Rationed? Economic Journal 106 (438), 1253-1270.

ESRC Centre for Business Research, 1996, The Changing State of British Enterprise, University of Cambridge.

ESRC Centre for Business Research, 1998, Enterprise Britain 1994-1997, University of Cambridge.

ESRC Centre for Business Research, 2000, British Enterprise in Transition, University of Cambridge.

Harhoff, D., Körting, T., 1998, Lending Relationship in Germany: Empirical Evidence from Survey Data. Journal of Banking & Finance 22 (10-11), 1317-1353.

Kawaguchi, H., 1974, Finance Theory. Chikuma-shobo (in Japanese).

Kutsuna, K., 1997, Small Business Financing and Venture Financing in Japan: An International Perspective. Toyo Keizai Shinpo-sha (in Japanese).

Leeth, J.D., Scott, J.A., 1989, The Incidence of Secured Debt: Evidence from the Small Business Community. Journal of Financial and Quantitative Analysis 24 (3), 379-394.

Ministry of Finance, 2000, Houjin Kigyou Toukei Nenpou. Ministry of Finance.

Owualah, S.I., 2002, SMEs, borrowing constraints and banking relationship in Japan. Japan and the World Economy 14 (1), 87-100.

Petersen, M.A., Rajan, R.G., 1994, The Benefits of Lending Relationships: Evidence from Small Business Data. Journal of Finance 44 (1), 3-37.

Stiglitz, J., Weiss, A., 1981, Credit Rationing in markets with Imperfect Information. American Economic Review 71 (3), 393-410.

Storey, D.J., 1994, New Firm Growth and Bank Financing. Small Business Economics 6 (2), 139-150.

Storey, D.J., 1994, Understanding the Small Business Sector. Routledge, London.

Storey, D.J., 1999, Discouraged Borrowers: A Study of Micro and Small Businesses in Trinidad and Tobago. SME Centre Working Paper, No.68., Warwick Business School.

Whittaker, D.H., 1997, Small Firms in the Japanese Economy. Cambridge University Press, Cambridge.

Table 1 Distribution of establishments in Yao (1999 Census and our sample)

Number of persons engaged	1999 Census		Our sample	
	No.	%	No.	%
1-4	2,318	51.2%	88	29.9%
5-9	1,079	23.8%	70	23.8%
10-19	603	13.3%	62	21.1%
20-29	231	5.1%	25	8.5%
30-	296	6.5%	49	16.7%
Total	4,527	100.0%	294	100.0%

Based on *1999 Establishment and Enterprise Census of Japan* .

Table 2 Discriptive statistics of sample firms

	Mean	Median	S.D.	Min.	Max.	Obs.
Age (year)	33	30	19	3	96	278
Net Capital ('0000 Yen)	1,935	1,000	7,990	100	118,815	238
Employee (person)	20	9	33	1	260	294
Net Sales ('0000 Yen)	43,095	12,000	95,995	80	783,600	286
Number of sample firms=294.						

Table 3 Type of banks from which small firms requested loans

Type of banks	No.	%
Private Banks	241	82.8
City Banks	83	28.5
Regional Banks	43	14.8
Regional Banks Ⅱ	11	3.8
Shinkin Banks	99	34.0
Credit Cooperatives	5	1.7
Governmental Financial Institutions for SMEs	50	17.2
National Finance Corporation	26	8.9
Japan Finance Corporation for Small Business	18	6.2
Shoko Chukin Bank	5	1.7
Other	1	0.3
Obs.	291	100.0
Number of sample firms=294.		

Table 4 Performance of present main bank on nine characteristics

1. Knows you and your business		very good	good	normal	bad	very bad	total
Group A	No.	20	53	97	8	7	185
	%	10.8	28.6	52.4	4.3	3.8	100.0
Group B	No.	8	13	30	10	7	68
	%	11.8	19.1	44.1	14.7	10.3	100.0
2. Provides business advice		very good	good	normal	bad	very bad	total
Group A	No.	6	21	110	24	18	179
	%	3.4	11.7	61.5	13.4	10.1	100.0
Group B	No.	1	2	36	8	19	66
	%	1.5	3.0	54.5	12.1	28.8	100.0
3. Offers finance		very good	good	normal	bad	very bad	total
Group A	No.	18	48	98	7	8	179
	%	10.1	26.8	54.7	3.9	4.5	100.0
Group B	No.	7	7	29	15	9	67
	%	10.4	10.4	43.3	22.4	13.4	100.0
4. Continuity of staff		very good	good	normal	bad	very bad	total
Group A	No.	16	40	97	18	9	180
	%	8.9	22.2	53.9	10.0	5.0	100.0
Group B	No.	3	10	32	11	11	67
	%	4.5	14.9	47.8	16.4	16.4	100.0
5. Industrial knowledge		very good	good	normal	bad	very bad	total
Group A	No.	5	19	107	32	15	178
	%	2.8	10.7	60.1	18.0	8.4	100.0
Group B	No.	1	3	30	15	19	68
	%	1.5	4.4	44.1	22.1	27.9	100.0
6. Speed of decision/service		very good	good	normal	bad	very bad	total
Group A	No.	25	46	87	17	7	182
	%	13.7	25.3	47.8	9.3	3.8	100.0
Group B	No.	6	9	27	15	10	67
	%	9.0	13.4	40.3	22.4	14.9	100.0
7. Wide range of services		very good	good	normal	bad	very bad	total
Group A	No.	5	26	109	30	11	181
	%	2.8	14.4	60.2	16.6	6.1	100.0
Group B	No.	1	4	28	20	13	66
	%	1.5	6.1	42.4	30.3	19.7	100.0
8. Knowledge of local market		very good	good	normal	bad	very bad	total
Group A	No.	4	24	106	30	11	175
	%	2.3	13.7	60.6	17.1	6.3	100.0
Group B	No.	1	1	31	17	14	64
	%	1.6	1.6	48.4	26.6	21.9	100.0
9. Introduction of suppliers and customers		very good	good	normal	bad	very bad	total
Group A	No.	5	15	87	40	28	175
	%	2.9	8.6	49.7	22.9	16.0	100.0
Group B	No.	1	1	28	15	22	67
	%	1.5	1.5	41.8	22.4	32.8	100.0

Group A: firms that have not considered changing their present main banks in the last three years
Group B: firms that have seriously considered changing their present main banks in the last three years

Table 5 Correlation coefficients matrix

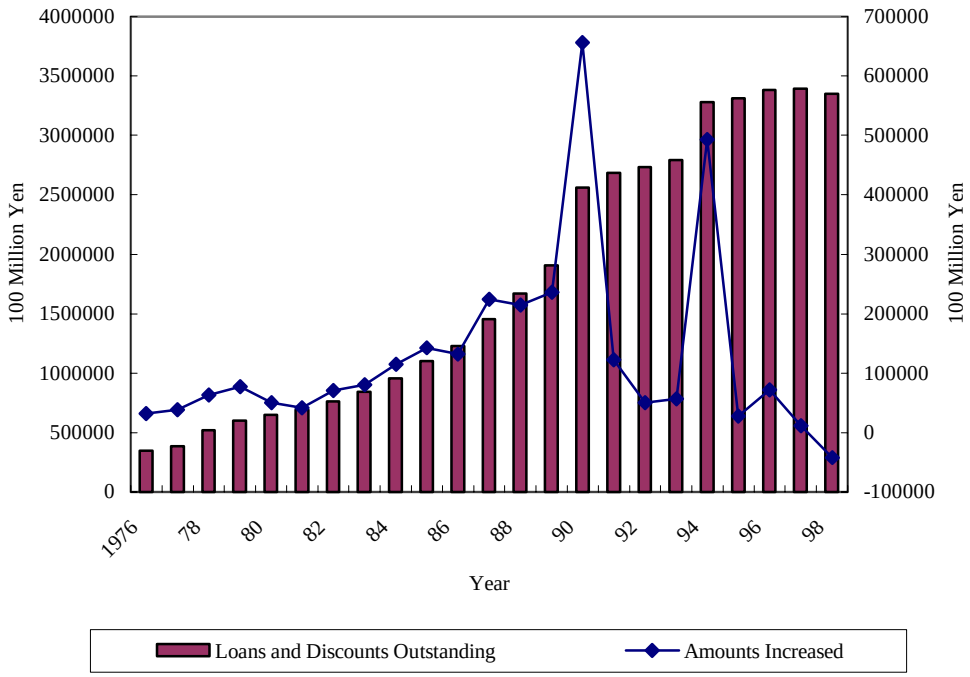
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) LEGAL	1										
(2) LN(AGE)	-0.124	1									
(3) LN(EMPLOY)	-0.486	0.270	1								
(4) SALESGTH	-0.185	-0.130	0.267	1							
(5) PROPERTY	-0.116	0.440	0.292	-0.007	1						
(6) SBANK	0.166	-0.217	-0.243	-0.004	-0.167	1					
(7) PBANK	-0.003	0.022	-0.048	-0.107	0.018	-0.364	1				
(8) FA	0.059	-0.011	-0.041	-0.148	0.087	-0.155	0.131	1			
(9) TWOBANKS	-0.155	0.103	0.143	-0.032	0.017	-0.054	0.037	-0.003	1		
(10) BKCHG	-0.125	-0.116	0.075	0.124	-0.049	-0.051	0.000	-0.130	0.084	1	
(11) T1998	-0.141	0.015	0.143	0.093	-0.046	0.112	-0.028	-0.128	0.109	0.076	1

Table 6 Logit analysis of small business loan approval
Dependent Variable = Loan Approval [1, 0]

Independent Variable	Coeff.	S.E.	Wald	P-value
LEGAL	-0.636	0.575	1.224	0.269
LN(AGE)	0.078	0.401	0.038	0.846
LN(EMPLOY)	0.574	0.296	3.751	0.053*
SALESGTH	0.210	0.609	0.118	0.731
PROPERTY	-0.324	0.509	0.406	0.524
SBANK	0.016	0.486	0.001	0.973
PBANK	2.318	1.159	4.001	0.045**
FA	0.763	0.457	2.787	0.095*
TWOBANKS	-0.181	0.552	0.107	0.743
BKCHG	-1.795	0.484	13.762	0.000***
T1998	-0.836	0.479	3.046	0.081*
Constant	1.403	1.484	0.894	0.345
LL(-2)	138.446			
Nagelkerke R2	0.261			
Chi-square	34.464			
P-value	0.000			
Obs.	240			

* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.

Figure 1 Small Business Lending by Japanese Banks 1976-1998



(Note) Figure 1 indicates small business loans and discounts outstanding by City Banks, Regional Banks, Regional Banks 2, Trust Banks, and Long-term Credit Banks. There is not a continuity between the figures before and after 1995, due to the change of the definition of loans and discounts outstanding.
(Source) Japanese Bankers Association.

Figure 2 Bank of Japan Short-term Economic Survey of financial position for small manufacturing enterprises

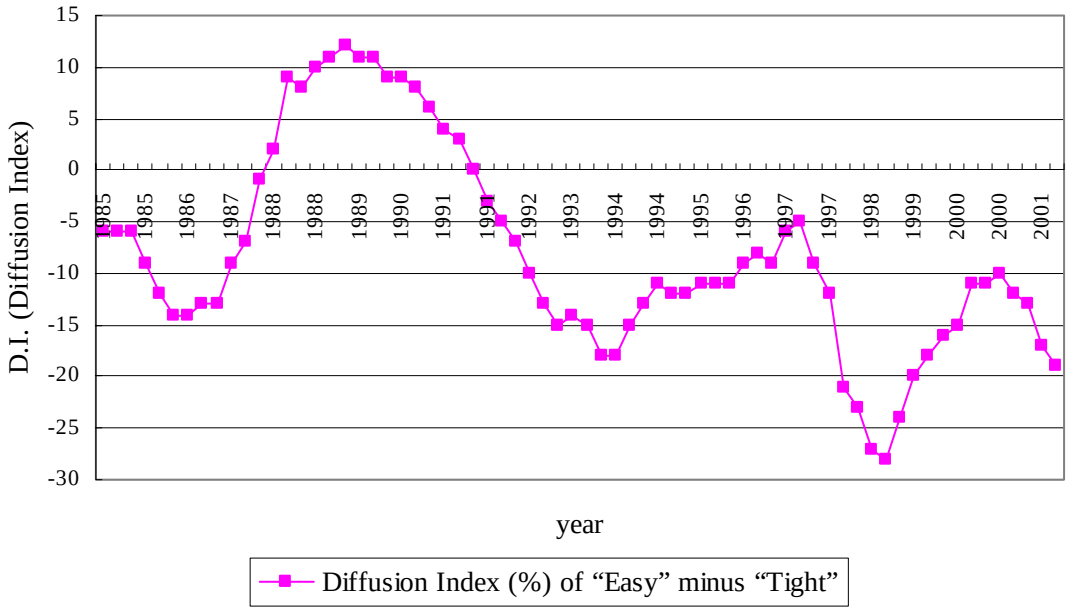
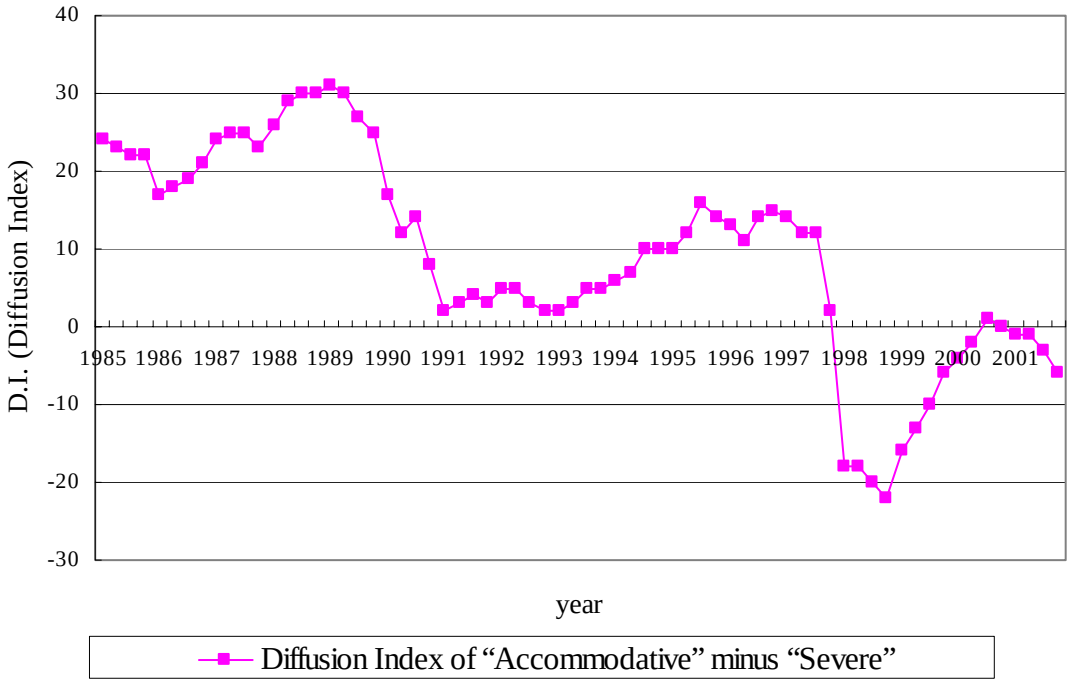


Figure 3 Bank of Japan Short-term Economic Survey of lending attitude of financial institutions for small manufacturing enterprises



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