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The Number of Bank Relationships and Bank Lending to New Firms: Evidence from firm-level data in Japan

OGANE Yuta
Nanzan University

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OGANE Yuta

Department of Economics, Nanzan University

Abstract

This paper examines how the number of bank relationships affects bank lending to new firms using a unique firm-level data set of more than 1,000 small and medium-sized enterprises (SMEs) incorporated in Japan between April 2003 and June 2008. We employ a two-stage least squares (2SLS) estimator—one of the instrumental variables estimators—to address the possible bias caused by omitted variables and/or reverse causality. We find that an increase in the number of bank relationships increases long-term lending to new firms. We also find that this rise may boost total lending to such firms. Furthermore, the findings in this paper suggest that the most significant difference in the effects of the number of bank relationships on bank lending is the difference between a single bank relationship and multiple bank relationships. We show that these results are unlikely to be driven by omitted variables and/or reverse causality.

JEL classification: G21; L26; M13
Keywords: Multiple bank relationships, Bank lending, New firms, Small and medium-sized enterprises

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1. Introduction

Smooth funding for small and medium-sized enterprises (SMEs) is one of the most important issues in recent banking research. In particular, smooth financing for young and unlisted SMEs is an urgent issue because these firms are faced with the most severe financial constraints among all enterprises. Although such firms tend to have a strong desire for outside funds, it is difficult for them to obtain external financing due to information asymmetries that exist between them and financial institutions (Berger and Udell 1998). For this reason, the banking literature has focused on financing to SMEs. In this strand of the literature, numerous studies have examined the effect of the number of bank relationships on lending terms and conditions. For example, several previous studies examine how the number of bank relationships affects SMEs' credit availability (e.g., Petersen and Rajan 1994, Hernández-Cánovas and Martínez-Solano 2007).

However, few studies employ actual bank lending as an indicator of credit availability for such firms because isolating loan supply from loan demand is difficult. Moreover, to the best of our knowledge, no study has empirically examined the impact of the number of bank relationships on credit availability for new firms due to data limitations and a technical problem.[1]

Against this background, this paper represents the first attempt to examine how the number of bank relationships affects bank lending to new firms. This paper is clearly distinguished from previous studies in terms of the following three points. First, we focus on new firms as a sample. Although new firms have the most critical need for outside funds during their life span, they are faced with the most severe funding constraints among all firms. To draw implications for solving this problem, using new firms as a sample is essential. Second, we employ actual bank lending as an indicator of such firms' credit availability. In particular, one of the key distinguishing features of our analyses is to focus on lending activities by financial institutions. Finally, we divide bank loans into

[1] The problem is an identification problem as discussed in Section 4.3.

short-term and long-term lending. Despite the importance of distinguishing between these two types of lending, few studies segregate loans into these distinct categories.

Our main findings are summarized as follows. We find that an increase in the number of bank relationships increases total lending to new firms. We also find that this increase in total lending to such firms seems not to occur through an increase in short-term lending, but through an increase in long-term lending.

The contribution of this study is to reveal the effect of the number of bank relationships on actual bank lending employing a sample of new firms. In addition, we focus on banks' lending activities by eliminating firms' demand for credit.

The remainder of the paper is organized as follows. Section 2 reviews the previous literature and provides the factors that determine the number of bank relationships for firms. Section 3 develops the empirical hypotheses. Section 4 explains our data set and the empirical methodology. Section 5 presents the empirical results. Section 6 checks the robustness of the baseline estimation results obtained in Section 5. Section 7 concludes the paper.

2. Background

2.1. Literature review

Previous studies on the number of bank relationships (including the choice between a single bank relationship and multiple bank relationships) are broadly classified into four groups: theoretical risks of firm bankruptcy, empirical studies on firm performance and firm bankruptcy, hold-up problems, and firms' credit availability.

First, we review the literature on the theoretical risks of firm bankruptcy. Some studies argue that multiple bank relationships make it difficult for creditors to coordinate with one another, particularly in the case of business restructurings, and thus increase the risk for customer firms. For example, Dewatripont and Maskin (1995) and Bolton and

Scharfstein (1996) show the possibility that multiple bank relationships lead to a lack of coordination among creditors and it leads to the failure of debt restructuring. Foglia et al. (1998) argue that multiple banking relationships are positively associated with borrower riskiness. Brunner and Krahnen (2008) suggest that multiple bank relationships reduce the probability of workout success using the unique concept of "bank pools." In contrast, other studies argue that multiple bank relationships reduce theoretical firm bankruptcy risk. For instance, Detragiache et al. (2000) show that multiple bank relationships can ensure a more stable supply of credit and reduce the probability of a project's early liquidation. In addition, Carletti et al. (2007) argue that multiple-bank lending reduces firm bankruptcy risk because it achieves higher monitoring. Furthermore, Guiso and Minetti (2010) find a negative correlation between borrowing differentiation and restructuring costs.

Second, we review empirical studies on firm performance and firm bankruptcy. Degryse and Ongena (2001) examine the effects of multiple bank relationships on sales profitability employing a sample of Norwegian listed firms, and find a negative correlation between the two. Moreover, Castelli et al. (2012) investigate how the number of bank relationships affects firm performance using a unique data set of Italian small firms, and indicate that an increase in the number of bank relationships reduces firms' financial performance, such as return on equity and return on assets. Furthermore, Ogane (2016) examines the effect of the number of bank relationships at the first settlement of accounts on subsequent firm bankruptcy risk employing a unique firm-level data set of unlisted young firms incorporated in Japan, and finds that an increase in the number of bank relationships at the first settlement increases subsequent firm bankruptcy risk.

Finally, we review the existing literature on hold-up problems and credit availability. These studies are fairly closely related to this paper, particularly the strands of the literature on credit availability. However, few studies investigate how the number of bank relationships affects hold-up problems and credit availability. Some studies find that a single bank relationship causes an information monopoly by a specific financial

institution, and thus causes hold-up problems (e.g., Sharpe 1990, Rajan 1992). In addition, Petersen and Rajan (1994) and Hernández-Cánovas and Martínez-Solano (2007) investigate the effect of the number of bank relationships on credit availability. The former study employs two variables as measures of credit availability: one is the percentage of trade credit that is paid after the due date and the other is the percentage of discounts for early payment that are taken. They find that an increase in the number of bank relationships worsens the availability of credit. On the other hand, the latter study also uses two variables as proxies for credit availability: one is the ratio of trade creditors to purchases and the other is the ratio of bank debt to total assets. They argue that fewer bank relationships worsen credit availability.

2.2. Determinants of the number of bank relationships

According to the theories expounded by previous studies, the reasons why firms seek to transact with numerous financial institutions are as follows.

First, firms establish a number of bank relationships when they intend to avoid bankruptcy. As one of the advantages of multiple bank relationships for firms, Detragiache et al. (2000) show that such relationships make it possible for firms to raise funds from other correspondent financial institutions even if one such financial institution cannot provide financing. In other words, Detragiache et al. (2000) suggest that transaction with many financial institutions can act as insurance against a temporary liquidity shortage. Detragiache et al. (2000) also provide empirical evidence for this theory using cross-sectional data on small and medium-sized Italian manufacturing firms, and obtain supportive evidence for their theory.

Second, firms build many bank relationships when bankruptcy creditors' rights are not protected (see Ongena and Smith 2000). The protection of such rights leads to a flexible supply of funds to firms because, in this case, creditors are relatively easy to collect debts even after client firms go bankrupt. In contrast, from the opposite perspective, firms want

to transact with many financial institutions when the rights of management executives are protected. Indeed, the protection of such rights makes insolvency proceedings more efficient, but this efficiency leads to loose management discipline of firms.[2] Dewatripont and Maskin (1995) and Bolton and Scharfstein (1996) argue that multiple bank relationships are desirable when the soft budget constraint problem is concerned.

However, empirical evidence by Ongena and Smith (2000), who empirically investigate the determinants of multiple bank relationships employing cross-sectional data on 1,079 firms across 20 European countries, show opposite results of the previous theory. More specifically, they find that firms do not tend to transact with many financial institutions in countries with efficient judicial systems and strong enforcement of creditor rights.

On balance, a unique conclusion of the determinants of the number of bank relationships has yet to be obtained.

3. Empirical hypotheses

A bank must assess a firm's riskiness before providing loans to the firm. As such, the number of bank relationships serves as an important piece of information for a bank that attempts to provide financing to a financially opaque firm. This is because the number of bank relationships represents the number of times that a firm passes screening by different financial institutions. In other words, this number is proof of a firm's financial stability and future potential.

We expect that the effect of the number of bank relationships on bank lending to new firms differs by lending period. The main hypotheses of this paper are summarized as follows:

Hypothesis 1: An increase in the number of bank relationships reduces short-term lending

[2] This is a soft budget constraint problem.

to new firms.

Hypothesis 2: An increase in the number of bank relationships increases long-term lending to new firms.

Hypothesis 3: The difference between a single bank relationship and multiple bank relationships is significant. In other words, multiple bank relationships affect lending to new firms.

Hypotheses 1–3 are based on the "substitution hypothesis," the theory of free riding, and the winner's curse, respectively. To accurately grasp the grounds for these hypotheses, we explain the difference between the characteristics of short-term and long-term borrowing. The former represents the borrowing that a firm has to repay within one year from the day following the date of the account closing day, and the latter represents longer-term borrowing. In general, it takes a long time for banks to provide financing to opaque firms, especially if the borrowers are young and unlisted SMEs. Therefore, for banks, it does not pay to provide loans to financially opaque small new firms because evaluating their financial stability takes a long time. For this reason, banks tend to provide financing to firms with credit risks that are evaluated by a third party.

Regarding firms, short-term borrowing is working capital and long-term borrowing is funds for equipment. In general, firms prefer long-term borrowing to short-term borrowing for the following three reasons. First, short-term borrowing comes with the risk that refinancing will be refused, which can be directly connected to bankruptcies. Second, the repayment per period for short-term borrowing is generally larger than that of long-term borrowing because firms must repay the entire short-term borrowing amount in a single payment. Third, in Japan, firms that cannot repay short-term borrowings until the term of repayment are subject to suspension of bank transactions, which substantially means bankruptcy even if they have black balance sheets. For these reasons, firms prefer

to obtain a long-term rather than a short-term loan.

Turning to banks, they prefer to recover their loans as soon as possible, and thus they generally prefer short-term to long-term lending. However, banks come to provide longer-term loans as firms acquire good reputations in the lending market.[3] In addition, this increase in long-term lending may well lead to a reduction in short-term lending. In other words, short-term lending is likely to be substituted for long-term lending as a firm's creditworthiness improves. For this reason, we expect that an increase in the number of bank relationships reduces short-term lending to new firms (Hypothesis 1).

On the other hand, another mechanism acts at the start of lending, particularly long-term lending. Based on the free riding theory, all banks have a significant incentive to free ride on the efforts of other banks during the screening of the loan application. To reduce the risk involved in lending to financially opaque firms, it is reasonable for all banks to observe other banks' actions and then decide on whether to provide a loan to the firm. The same situation is true for short-term lending, whereas a default on a long-term loan does not lead to immediate firm bankruptcy, unlike the case of a short-term loan. Thus, for long-term lending, the number of bank relationships is more likely to serve as proof of financial stability and the future potential of firms. For this reason, we expect that an increase in the number of bank relationships increases long-term lending to new firms (Hypothesis 2).

Furthermore, it is particularly risky for a bank to be the first lender because such bank may underestimate a firm's credit risk more than other banks. In other words, a bank can be the first lending bank simply because other banks have more negative information on the firm than the first bank does. This logic is based on the winner's curse, which predicts that a bank is less likely to provide financing to financially opaque firms until another bank does. For this reason, we expect that the difference between a single bank relationship and multiple bank relationships is significant (Hypothesis 3).

[3] Diamond (1989) suggests such a possibility.

4. Data and methodology

4.1. Data

We construct a unique firm-level data set from the following sources. First, we employ the firm-level database provided by Tokyo Shoko Research, Ltd. (TSR), one of the largest credit reporting agencies in Japan. This data set comprises two types of files: the TSR Enterprise Information File and the TSR Stand-Alone Financial Information File. Our original sample contains firms incorporated in Japan between April 2003 and June 2008 as unlisted companies with startup capital of less than 50 million yen. Although the date of establishment and incorporation do not necessarily concur, this data set includes only information on the first settlement of accounts. In addition, more than three-quarters of the sample firms are incorporated within 10 years of establishment. Thus, the observations in this paper are generally young firms (i.e., new firms).

The original sample of this data set comprises 1,008 observations. These firms represent almost all enterprises that meet the previously described data extraction conditions in the TSR database. Therefore, the bias associated with the sample extraction is likely to be small.

In addition, we use the following aggregate data for each prefecture: *Nihon Kinyu Meikan* (Almanac of Financial Institutions in Japan) published by *Nihon Kinyu Tsushin Sha*; the Report on Prefectural Accounts produced by the Cabinet Office; the Number of Prefectural Sorted Ordinary Corporation published by the National Tax Agency; and Orbis, provided by Bureau van Dijk.

4.2. Variables

Table 1 shows the variable definitions and Table 2 presents the descriptive statistics. In this paper, we employ three types of dependent variables: LnSHORT_BANKS,

LnLONG_BANKS, and LnTOTAL_BANKS. These variables represent borrowings per bank, specifically the logarithm of short-term, long-term, and total borrowings per number of bank relationships for a firm, respectively. BANKS is our key explanatory variable and shows the number of bank relationships for a firm, and Fig. 1 indicates their distribution. In this paper, we also construct a dummy variable, MULTIPLE_BANK, which equals one if a firm transacts with multiple banks.

Other explanatory variables are as follows. First, we employ the following firm characteristic variables: number of employees (EMPLOYEES), manager age (MANAGER_AGE), a dummy indicating whether the manager of the firm is male (MALE), and the number of offices (OFFICES). These variables are taken from the TSR Enterprise Information File.

Second, we use the following firm financial information variables: total liquid assets (LIQUID_ASSETS), cash and cash in the bank (CASH), accounts receivable (ACCOUNTS_RECEIVABLE), total fixed assets (FIXED_ASSETS), total assets (TOTAL_ASSETS), total current liabilities (CURRENT_LIABILITIES), accounts payable (ACCOUNTS_PAYABLE), the logarithm of short-term borrowing (LnSHORT_BORROWING), the logarithm of long-term borrowing (LnLONG_BORROWING), total liabilities (TOTAL_LIABILITIES), capital adequacy ratio (CAPITAL_ADEQUACY_RATIO), return on assets (ROA), capital (CAPITAL), and current profit (CURRENT_PROFIT). These variables are from the TSR Stand-Alone Financial Information File. In this paper, the variables for which we take the logarithm are replaced with 0.0001 if they are zero before taking the logarithm.

Finally, the following are aggregate data for each prefecture: the Herfindahl index of the number of financial institutions (HHI), the ratio of the number of financial institutions to the number of ordinary corporations (BANKS_RATIO), real gross prefectural product (GPP), the number of ordinary corporations (FIRMS), the growth rate of the real gross prefectural product (GROWTH_RATE), and the startup rate of small and unlisted enterprises (STARTUP_RATE). HHI is taken from *Nihon Kinyu Meikan*.

BANKS_RATIO is taken from *Nihon Kinyu Meikan* and the Number of Prefectural Sorted Ordinary Corporation. GPP and GROWTH_RATE are taken from the Report on Prefectural Accounts. FIRMS is taken from the Number of Prefectural Sorted Ordinary Corporation. STARTUP_RATE is taken from Orbis. Dummy variables for accounting year, industry, and type of main bank are also included in the regressions.[4]

4.3. Empirical approaches

Using the data set and variables just described, we examine the effect of the number of bank relationships on bank lending to new firms. In this paper, we conduct an ordinary least squares (OLS) regression and a two-stage least squares (2SLS) regression of the form:

$$\begin{aligned} &\text{BORROWING}_i \\ &= \beta_0 + \beta_1 \text{BANKS}_i + \beta_2 FIRM_i + \beta_3 FIRM\_FINANCE_i \\ &\quad + \beta_4 PREFECTURE_i + \varepsilon_i \ , \end{aligned} \tag{1}$$

where BORROWING_i are dependent variables that represent borrowing per bank of firm i; specifically, LnSHORT_BANKS, LnLONG_BANKS, and LnTOTAL_BANKS fall under BORROWING_i. BANKS_i is the number of bank relationships for firm i. In the OLS regression, we regard this variable as endogenous. In contrast, in the 2SLS regression, we employ the variable BANK_MERGER as an instrumental variable for this endogenous variable. $FIRM_i$ and $FIRM\_FINANCE_i$ show the characteristics of firm i: the former includes basic information and the latter includes financial information on the firm. $PREFECTURE_i$ represents the characteristics of the prefecture in which firm i is located. ε_i is a mean zero error term that encompasses unobservable factors. In this regression, we use cluster-robust standard errors with respect to firms.

[4] In this paper, we regard the largest lending bank for firms as their main banks.

Here, we explain the instrumental variable. As aforementioned, the main reason behind existing studies not employing bank lending as a measure of credit availability is the identification problem. In other words, bank lending is simultaneously determined by credit supply and credit demand. We cannot grasp how the number of bank relationships affects lending activities by financial institutions without overcoming this identification problem. To address this problem, we employ the variable BANK_MERGER.

BANK_MERGER is a dummy variable that equals one if a merger occurs among a firm's correspondent financial institutions within five years from the first settlement of accounts.[5] Fig. 2 shows the timeline of establishment, incorporation, first settlement of accounts, and the event. The event falls under the variable BANK_MERGER, which is an exogenous event for a firm for the following reasons.[6] First, although a firm may be able to expect a merger between one of its correspondent financial institutions and a financial institution that is not its correspondent financial institution, it cannot expect a merger among its correspondent financial institutions. Moreover, the event that BANK_MERGER represents occurs after providing loans to firms. This characteristic of BANK_MERGER strengthens the evidence that a firm cannot expect a merger among its correspondent financial institutions; thus, this instrumental variable is exogenous for a firm. Furthermore, because the event that corresponds to BANK_MERGER occurs after providing financing, this instrumental variable can also deal with reverse causality.

In addition, BANK_MERGER is associated with a firm's number of bank relationships because the correspondent financial institutions for a firm with many bank relationships have more opportunities to merge with another (or other) of the firm's correspondent financial institutions.

Therefore, BANK_MERGER is likely to satisfy the conditions of instrumental

[5] In this paper, we do not include a merger between one of the firm's correspondent financial institutions and a financial institution that is not the firm's correspondent financial institution because this type of merger is likely to be associated with the client firm's characteristics and demand for credit.

[6] To avoid confusion on the timeline shown in Fig. 2 and to simplify the discussions, we do not include an explanatory variable that indicates the time interval between the establishment and first settlement of accounts. However, the results in this paper are not driven by the variable indicating the time interval (not reported).

variables, that is, instrument exogeneity and instrument relevance.

5. Baseline estimations

We start from the baseline estimation. Table 3 reports the results of the OLS regression where the dependent variables are BANKS (columns 1–3) and MULTIPLE_BANKS (columns 4–6). As for the variable of interest, the coefficient on BANKS is statistically insignificant in column 1; thus, in this regression, we do not find supportive evidence that an increase in the number of bank relationships increases the log of short-term borrowing. This result is inconsistent with Hypothesis 1. However, the coefficient on MULTIPLE_BANKS is significantly negative in column 4, implying that the second lending banks of firms provide loans to the firms as long-term instead of short-term lending. This is consistent with Hypothesis 3. In contrast, in columns 2 and 5, the coefficients on BANKS and MULTIPLE_BANKS are positive and significant, suggesting that an increase in the number of bank relationships increases the log of long-term borrowing; it also suggests that the start of multiple bank relationships sharply increases long-term lending. These results are consistent with Hypotheses 2 and 3. Moreover, the coefficient on BANKS is positive and significant in column 3, implying that an increase in the number of bank relationships increases total borrowing. Furthermore, this result suggests that the increase in total borrowing is through an increase in long-term borrowing because total borrowing comprises short-term and long-term borrowing. In contrast, in column 6, the coefficient on MULTIPLE_BANKS is not statistically significant. This result implies that the increase in the number of bank relationships indeed increases the log of total borrowing, but the difference between a single bank relationship and multiple bank relationships is not important in total borrowing.

Among other variables, the coefficients on EMPLOYEES are positive and significant except for columns 1 and 4, indicating that firms with a large number of employees obtain

longer-term and larger total loans. Other than in columns 2 and 5, both LIQUID_ASSETS and FIXED_ASSETS have significant negative coefficients, suggesting that firms with more liquid assets do not have to raise funds from financial institutions because these assets can serve as short-term borrowing from financial institutions. In contrast, the coefficients on TOTAL_ASSETS are positive and significant, indicating that financial institutions emphasize the total assets of client firms when they provide financing to financially opaque firms. The coefficients on CURRENT_LIABILITIES are positive and significant in columns 1 and 4, implying that obtaining more short-term borrowing is reflected in these positive signs. However, the coefficients are significantly negative in the other columns, suggesting that firms have to reduce their debt to receive long-term loans. In contrast, the coefficients on TOTAL_LIABILITIES have inverse signs; in other words, these are significantly negative in columns 1 and 4, but are positive and significant in the other columns. This may be because firms with less total liabilities can receive short-term loans, and the positive signs in the other columns may be the result of an increase in borrowing. CAPITAL_ADEQUACY_RATIO has significant negative coefficients in columns 1–6, suggesting that firms with less own capital are more likely to rely on bank loans; alternatively, this negative correlation may be the result of obtaining many loans. The coefficients on ROA are positive and significant in columns 1–6, indicating that firms with good business performance can receive more funds. This result is consistent with economic theory. CAPITAL has significant negative coefficients in columns 1 and 4, and CURRENT_PROFIT has significant negative coefficients other than in columns 2 and 5. These results indicate that firms with less capital or small profits tend to desire loans.

BANKS_RATIO has significant negative coefficients other than in columns 2 and 5, which is in line with previous studies on bank competition arguing that bank competition reduces bank lending (e.g., Petersen and Rajan 1995, Beck et al. 2004, Hauswald and Marquez 2006, Ogura 2012). In addition, in columns 2, 3, and 6, GPP has significant positive coefficients and FIRMS has significant negative coefficients. However, the

economic impacts of these estimators are negligible. The coefficients on STARTUP_RATE are significantly negative in columns 3 and 6, indicating that an increase in the number of rival firms reduces the total lending to each firm. This result is consistent with the result of the coefficient on BANKS_RATIO.

In sum, the results in this section are consistent with Hypothesis 2 and are partially consistent with Hypotheses 1 and 3.

6. Robustness checks

To confirm the robustness of the baseline estimation results, we conduct a 2SLS estimation using BANK_MERGER as an instrumental variable. This variable is almost exogenous for firms. In this regression, borrowing for firms is almost equivalent to lending to firms because BANK_MERGER is not driven by firms' demand for credit.

Table 4 reports the results of the first-stage regression in which the dependent variables are BANKS (columns 1–3) and MULTIPLE_BANKS (columns 4–6). The structure of the explanatory variables in Table 4 is the same as that in Table 3. As for the variable of interest, the coefficients on BANK_MERGER are positive and statistically significant at the 1% level in columns 1–6, indicating that mergers between firms' correspondent financial institutions occur easily if firms transact with many financial institutions. This result is consistent with our expectations and means that BANK_MERGER satisfies instrument relevance in both cases in which the dependent variables are BANKS and MULTIPLE_BANKS.

Table 5 reports the results of the second-stage regression in which the dependent variables are LnSHORT_BANKS (columns 1 and 4), LnLONG_BANKS (columns 2 and 5), and LnTOTAL_BANKS (columns 3 and 6). Columns 1–3 report the regression results in which the key explanatory variable is BANKS, whereas columns 4–6 report the regression results in which the key variable of interest is MULTIPLE_BANKS.

In column 1, the coefficient on BANKS is indeed statistically insignificant and has a

positive sign. This result is different from the result in Table 3 and is inconsistent with Hypothesis 1. In contrast, BANKS has significant positive coefficients in column 2, indicating that an increase in the number of bank relationships increases long-term lending to such firms. This result is similar to that in Table 3, which is consistent with Hypothesis 2, and it can be interpreted in at least three different ways. First, financial institutions that have entered late in the scene free ride on the efforts of antecedent lending financial institutions for producing information. Second, the amount of lending by these late entrants is larger than that of their predecessors. Finally, late entrants emphasize the screening already performed by the precedent financial institutions. In column 3, the coefficient on BANKS is indeed statistically insignificant, but has a positive sign. This result indicates that an increase in the number of bank relationships may increase total lending to new firms because standard errors in the method of instrumental variables (IV methods) tend to be overestimated.

In columns 4–6, the coefficients on MULTIPLE_BANKS are statistically insignificant, implying that the difference between a single bank relationship and multiple bank relationships is not important in bank lending. These results are different from those in Table 3 and inconsistent with Hypothesis 3. However, the coefficient on MULTIPLE_BANKS in column 5 may be actually statistically significant because the IV methods tend to overestimate standard errors. Moreover, in columns 4–6, the magnitude of the coefficients on MULTIPLE_BANKS is about 6.5 times larger than that on BANKS in columns 1–3. This result suggests that the most significant difference in the impact of the number of bank relationships on bank lending is the difference between a single bank relationship and multiple bank relationships. In other words, once a firm acquires a good reputation in the lending market through transactions with the first lending financial institution, the firm can obtain longer-term loans.[7]

On the other hand, the estimated coefficients on LIQUID_ASSETS, CASH, FIXED_ASSETS, TOTAL_ASSETS, CAPITAL, CURRENT_PROFIT,

[7] This mechanism is also close to Diamond (1989).

BANKS_RATIO, GPP, and STARTUP_RATE have the same signs, and the magnitudes of these coefficients are close to those in Table 3. In addition, the results of the coefficients on EMPLOYEES, CAPITAL_ADEQUACY_RATIO, and ROA are relatively close to those in Table 3. More specifically, in Table 3, these coefficients are statistically significant not only in columns 1–3 but also in columns 4–6. However, in Table 5, these coefficients are statistically insignificant in columns 4–6.

Although we cannot perform a test of overidentifying restrictions, as previously mentioned, instrument exogeneity is likely to be satisfied because the event that falls under BANK_MERGER is an unpredictable future event for firms. Hence, BANK_MERGER tends not to be associated with firms' credit demand. Moreover, the robustified Durbin-Wu-Hausman tests for endogeneity are not rejected in columns 1–6, indicating that there is no evidence that BANKS and MULTIPLE_BANKS are endogenous. These results also suggest that the results in Table 3 are more reliable than those in Table 5, and thus the coefficients on BANKS in column 3 of Table 5 and MULTIPLE_BANKS in column 5 of Table 5 are likely to be statistically significant under the condition of employing the real standard errors.

On balance, the results in this subsection indicate that an increase in the number of bank relationships increases long-term lending to new firms, which are consistent with Hypothesis 2. In addition, this increase may increase the total lending to such firms.

7. Conclusion

Using a unique firm-level data set, we examine the effect of the number of bank relationships on bank lending to new firms. We find that an increase in the number of bank relationships increases long-term lending to new firms. We also find that this increase may increase total lending to such firms. Moreover, the findings in this paper suggest that the most significant difference in the effects of the number of bank relationships on bank lending is the difference between a single bank relationship and

multiple bank relationships.

Our findings have important implications for firms. For example, firms that desire to obtain long-term lending should appeal to increase the number of bank relationships because financial institutions do not hesitate to provide financing to firms with many banking relationships. In other words, such a number can serve as signals of their creditworthiness. However, as mentioned earlier, we must not forget the effects of such a number differs depending on the situation; specifically, although increasing this number is effective to mitigate funding constraints for client firms, an increase in the number of bank relationships deteriorates firm performance and increases the risk of firm bankruptcy (e.g., Degryse and Ongena 2001, Castelli et al. 2012, Ogane 2016). These findings provide SME managers with various options regarding this number and will contribute to revitalizing economic activity for SMEs because such firms' business performance largely depends on the decisions of the managers. Furthermore, such revitalization leads to enhancing the economic development of rural areas and the development of the Japanese economy that originated from regional revitalization.

Nevertheless, further research on the number of bank relationships is needed because this topic has several issues that remain to be addressed. For example, we cannot reveal the factors that determine the number of bank relationships. This is beyond the scope of this paper; therefore, we need to deepen the discussions on the issue of number of bank relationships to contribute to the development of academic studies on banking and, above all, future entrepreneurs throughout the world.

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Table 1 Variable definitions

Variable	Definition
Dependent variables	
LnSHORT_BANKS	Log of (short-term borrowing / number of correspondent financial institutions)
LnLONG_BANKS	Log of (long-term borrowing / number of correspondent financial institutions)
LnTOTAL_BANKS	Log of (total borrowing / number of correspondent financial institutions), where total borrowing: = short-term borrowing + long-term borrowing
Number of bank relationships	
BANKS	Number of correspondent financial institutions
MULTIPLE_BANKS	1 if the firm transacts with multiple banks, 0 otherwise
Firm characteristics	
EMPLOYEES	Number of employees
MANAGER_AGE	Age of managers
MALE	1 if the manager of the firm is male, 0 otherwise
OFFICES	Number of offices
Firm financial information (unit: thousand yen)	
LIQUID_ASSETS	Total liquid assets (million yen)
CASH	Cash and cash in bank (million yen)
ACCOUNTS_RECEIVABLE	Accounts receivable (million yen)
FIXED_ASSETS	Total fixed assets (million yen)
TOTAL_ASSETS	Total assets (million yen)
CURRENT_LIABILITIES	Total current liabilities (million yen)
ACCOUNTS_PAYABLE	Accounts payable (million yen)
SHORT_BORROWING	Short-term borrowing (million yen)
LONG_BORROWING	Long-term borrowing (million yen)
TOTAL_LIABILITIES	Total liabilities (million yen)
CAPITAL_ADEQUACY_RATIO	Capital adequacy ratio: = (total assets - total liabilities) / total assets * 100 (%)
ROA	Return on assets: = current profit / total assets * 100
CAPITAL	Capital (million yen)
CURRENT_PROFIT	Current profit (million yen)
Prefecture characteristics	
HHI	Herfindahl index of the number of financial institutions
BANKS_RATIO	Ratio of the number of financial institutions to the number of ordinary corporations (%)
GPP	Real gross prefectural product (billion yen)
FIRMS	Number of ordinary corporations
GROWTH_RATE	Growth rate of the real gross prefectural product
STARTUP_RATE	Startup rate of small and unlisted enterprises (%)
Instrumental variables	
BANK_MERGER	1 if at least one of correspondent financial institutions of the firms merges its other correspondent financial institutions, 0 otherwise

Table 2 Descriptive statistics

Variable	N	Mean	Median	S.D.	Min.	Max.
Dependent variables						
LnSHORT_BANKS	1,008	-8.214	-16.118	9.000	-18.064	8.987
LnLONG_BANKS	1,008	-7.052	-0.958	9.315	-18.315	7.340
LnTOTAL_BANKS	1,008	-2.815	1.241	8.254	-17.910	8.987
Number of bank relationships						
BANKS	1,008	1.844	2.000	1.121	1.000	9.000
MULTIPLE_BANKS	1,008	0.504	1.000	0.500	0.000	1.000
Firm characteristics						
EMPLOYEES	1,008	11.326	5.000	27.253	0.000	543.000
MANAGER_AGE	1,008	47.441	47.018	11.169	21.950	83.947
MALE	1,008	0.951	1.000	0.215	0.000	1.000
OFFICES	1,002	0.613	0.000	2.311	0.000	42.000
Firm financial information						
LIQUID_ASSETS	1,008	136.631	23.537	560.513	0.015	8,640.546
CASH	1,008	30.228	6.140	122.960	0.000	2,328.072
ACCOUNTS_RECEIVABLE	1,008	32.882	1.395	138.011	0.000	1,758.214
FIXED_ASSETS	1,008	64.314	3.080	369.755	0.000	6,861.985
TOTAL_ASSETS	1,008	201.324	29.632	832.181	0.015	11,712.860
CURRENT_LIABILITIES	1,008	20.903	0.000	82.570	0.000	1,312.395
ACCOUNTS_PAYABLE	1,008	120.261	16.175	502.950	0.000	8,623.585
SHORT_BORROWING	1,008	38.556	0.000	344.692	0.000	8,000.000
LONG_BORROWING	1,008	46.465	0.578	280.284	0.000	4,965.157
TOTAL_LIABILITIES	1,008	173.379	24.881	684.036	0.002	8,817.754
CAPITAL_ADEQUACY_RATIO	1,008	-25.501	15.555	1,398.834	-44,366.670	99.980
ROA	1,008	-52.495	0.521	1,400.011	-44,426.670	57.826
CAPITAL	1,008	8.083	5.000	8.991	-18.912	71.620
CURRENT_PROFIT	1,008	1.103	0.155	29.672	-417.612	424.248
Prefecture characteristics						
HHI	1,008	0.112	0.101	0.069	0.035	0.322
BANKS_RATIO	1,008	0.928	0.954	0.360	0.388	1.901
GPP	1,008	28,330.000	17,590.270	31,536.530	2,040.349	102,042.300
FIRMS	1,008	152,504.700	76,524.000	178,531.100	9,416.000	587,825.000
GROWTH_RATE	1,008	1.206	1.376	2.638	-9.149	8.675
STARTUP_RATE	1,008	3.258	3.118	1.035	1.063	7.018
Instrumental variables						
BANK_MERGER	1,008	0.005	0.000	0.070	0.000	1.000

Fig. 1 Distribution of bank relationships

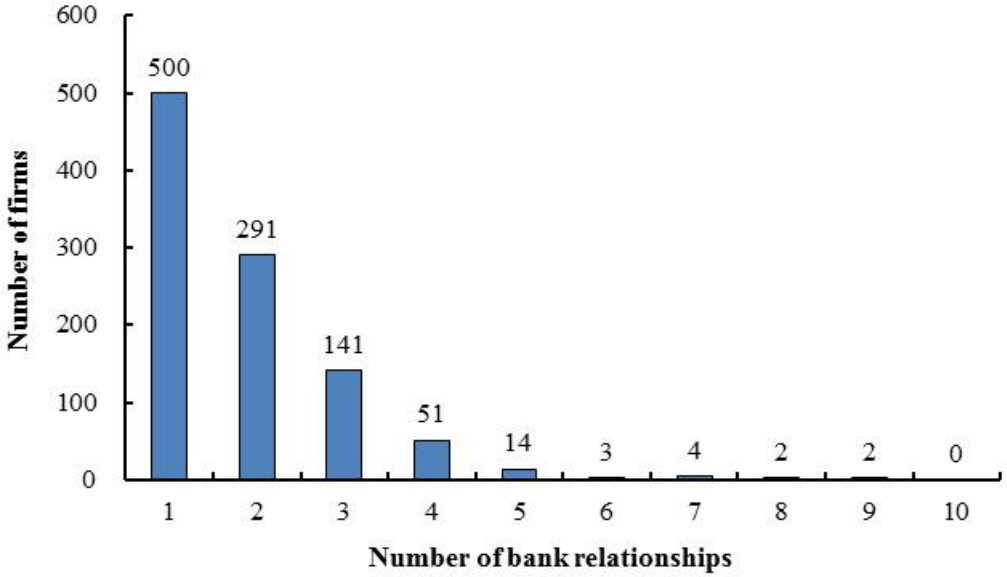

Fig. 2　Timeline of establishment, incorporation, first settlement of accounts, and “event”

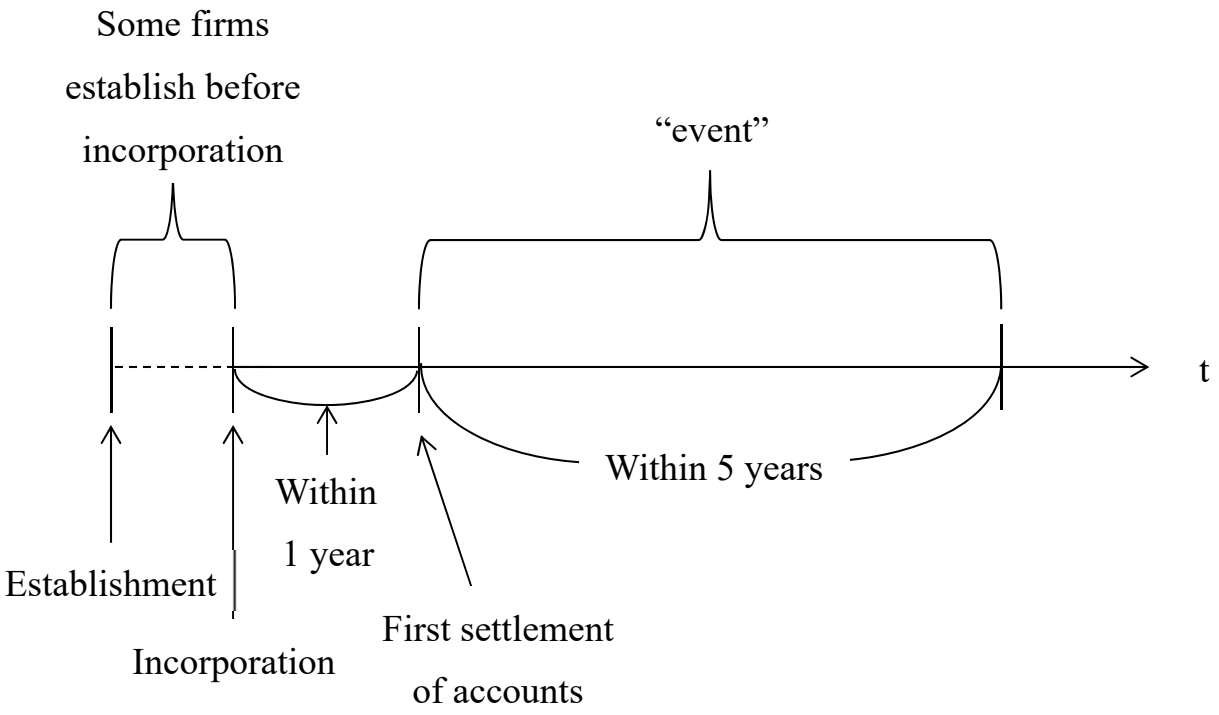

Table 3 OLS regression

Dependent variables:	(1) LnSHORT_ BANKS	(2) LnLONG_ BANKS	(3) LnTOTAL_ BANKS	(4) LnSHORT_ BANKS	(5) LnLONG_ BANKS	(6) LnTOTAL_ BANKS
Number of bank relationships						
BANKS	-0.259	1.458***	0.515**			
	(0.296)	(0.258)	(0.236)			
MULTIPLE_BANKS				-1.410**	2.170***	0.247
				(0.572)	(0.567)	(0.511)
Firm characteristics						
EMPLOYEES	0.001	0.040***	0.025**	0.003	0.034**	0.024*
	(0.021)	(0.015)	(0.012)	(0.021)	(0.015)	(0.013)
MANAGER_AGE	0.003	0.004	0.014	0.003	0.009	0.016
	(0.026)	(0.026)	(0.024)	(0.026)	(0.026)	(0.024)
MALE	-0.590	1.137	-0.339	-0.618	0.850	-0.477
	(1.339)	(1.332)	(1.135)	(1.338)	(1.312)	(1.124)
OFFICES	-0.040	-0.142	-0.208	-0.034	-0.122	-0.196
	(0.173)	(0.196)	(0.194)	(0.170)	(0.213)	(0.199)
Firm financial information						
LIQUID_ASSETS	-0.485***	-0.096	-0.273***	-0.488***	-0.113	-0.282***
	(0.090)	(0.123)	(0.075)	(0.091)	(0.134)	(0.076)
CASH	0.003	-0.006**	0.001	0.003	-0.006**	0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
ACCOUNTS_RECEIVABLE	-0.005	0.001	-0.005	-0.005	0.001	-0.004
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)
FIXED_ASSETS	-0.485***	-0.093	-0.270***	-0.488***	-0.112	-0.280***
	(0.090)	(0.123)	(0.075)	(0.092)	(0.134)	(0.076)
TOTAL_ASSETS	0.486***	0.095	0.271***	0.490***	0.112	0.280***
	(0.090)	(0.123)	(0.075)	(0.092)	(0.134)	(0.076)
CURRENT_LIABILITIES	0.012***	-0.012***	-0.003*	0.012***	-0.012***	-0.003**
	(0.004)	(0.003)	(0.001)	(0.004)	(0.003)	(0.001)
ACCOUNTS_PAYABLE	-0.004	0.000	-0.011*	-0.004	-0.001	-0.011*
	(0.007)	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)
SHORT_BORROWING		-0.000			-0.001	
		(0.002)			(0.002)	
LONG_BORROWING	0.007***			0.007***		
	(0.002)			(0.002)		
TOTAL_LIABILITIES	-0.008**	0.009***	0.005**	-0.009**	0.010***	0.006***
	(0.004)	(0.002)	(0.002)	(0.004)	(0.003)	(0.002)
CAPITAL_ADEQUACY_RATIO	-0.025**	-0.072***	-0.060***	-0.027**	-0.073***	-0.061***
	(0.011)	(0.014)	(0.015)	(0.011)	(0.014)	(0.015)
ROA	0.025**	0.072***	0.060***	0.027**	0.073***	0.061***
	(0.011)	(0.014)	(0.015)	(0.011)	(0.014)	(0.015)
CAPITAL	-0.113***	0.019	-0.056	-0.110***	0.023	-0.052
	(0.033)	(0.033)	(0.034)	(0.033)	(0.033)	(0.034)
CURRENT_PROFIT	-0.028***	-0.012	-0.024***	-0.030***	-0.007	-0.022**
	(0.010)	(0.012)	(0.009)	(0.010)	(0.013)	(0.009)
Prefecture characteristics						
HHI	7.988	9.365	6.888	8.244	6.834	5.901
	(7.389)	(7.023)	(6.235)	(7.350)	(7.036)	(6.227)
BANKS_RATIO	-4.107***	-2.084	-4.077***	-4.200***	-1.961	-4.068***
	(1.426)	(1.396)	(1.332)	(1.428)	(1.405)	(1.336)
GPP	0.000	0.000*	0.000**	0.000	0.000	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FIRMS	-0.000	-0.000*	-0.000**	-0.000	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH_RATE	0.224	-0.122	0.044	0.223	-0.105	0.053
	(0.161)	(0.154)	(0.142)	(0.161)	(0.157)	(0.142)
STARTUP_RATE	-0.547	-0.606	-0.782**	-0.554	-0.564	-0.768**
	(0.397)	(0.368)	(0.319)	(0.397)	(0.368)	(0.320)
Constant	-12.010***	-1.539	5.083*	-11.501***	0.799	6.350**
	(3.040)	(3.062)	(2.620)	(2.967)	(3.029)	(2.594)
Accounting year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Dummies for main bank type	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-squared	0.070	0.166	0.132	0.075	0.154	0.129
Number of observations	1,002	1,002	1,002	1,002	1,002	1,002

Note: The upper rows are coefficients and the lower rows are heteroscedasticity-robust standard errors.

*Significant at the 10% level.

**Significant at the 5% level.

***Significant at the 1% level.

Table 4 2SLS regression (first-stage regression)

	Dependent variable: BANKS			Dependent variable: MULTIPLE_BANKS		
Instrumental variable: BANK_MERGER	(1)	(2)	(3)	(4)	(5)	(6)
Firm characteristics						
EMPLOYEES	-0.000	-0.003	-0.002	0.002**	0.001*	0.001*
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
MANAGER_AGE	0.006**	0.006**	0.006**	0.002	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
MALE	-0.262*	-0.269*	-0.263*	-0.069	-0.070	-0.069
	(0.153)	(0.154)	(0.153)	(0.072)	(0.072)	(0.072)
OFFICES	0.042***	0.032*	0.033*	0.011**	0.009*	0.010*
	(0.014)	(0.017)	(0.017)	(0.005)	(0.005)	(0.005)
Firm financial information						
LIQUID_ASSETS	-0.024	-0.023	-0.023	-0.007	-0.007	-0.007
	(0.020)	(0.019)	(0.020)	(0.008)	(0.007)	(0.007)
CASH	0.000	0.000	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
ACCOUNTS_RECEIVABLE	-0.001	-0.001	-0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
FIXED_ASSETS	-0.025	-0.024	-0.024	-0.007	-0.007	-0.007
	(0.020)	(0.019)	(0.020)	(0.008)	(0.007)	(0.007)
TOTAL_ASSETS	0.024	0.022	0.023	0.007	0.007	0.007
	(0.020)	(0.019)	(0.020)	(0.008)	(0.007)	(0.007)
CURRENT_LIABILITIES	0.001**	0.000	-0.000	0.000*	-0.000	-0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
ACCOUNTS_PAYABLE	0.000	-0.000	-0.001	0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
SHORT_BORROWING		-0.001			-0.000	
		(0.000)			(0.000)	
LONG_BORROWING	0.002***			0.000***		
	(0.000)			(0.000)		
TOTAL_LIABILITIES	-0.001	0.001***	0.001***	-0.000	0.000**	0.000**
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
CAPITAL_ADEQUACY_RATIO	-0.004***	-0.003***	-0.004***	-0.002***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
ROA	0.004***	0.003***	0.004***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
CAPITAL	0.007*	0.007*	0.009**	0.003*	0.004*	0.004*
	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)	(0.002)
CURRENT_PROFIT	0.003**	0.002	0.003*	-0.000	-0.001	-0.000
	(0.001)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)
Prefecture characteristics						
HHI	-1.767**	-1.715**	-1.701**	-0.152	-0.141	-0.140
	(0.788)	(0.785)	(0.788)	(0.412)	(0.412)	(0.412)
BANKS_RATIO	-0.129	-0.117	-0.116	-0.087	-0.085	-0.085
	(0.155)	(0.154)	(0.154)	(0.082)	(0.082)	(0.082)
GPP	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FIRMS	0.000	0.000	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH_RATE	0.016	0.014	0.017	0.002	0.002	0.002
	(0.020)	(0.020)	(0.020)	(0.009)	(0.009)	(0.009)
STARTUP_RATE	0.025	0.019	0.016	0.001	-0.001	-0.001
	(0.044)	(0.044)	(0.044)	(0.023)	(0.023)	(0.022)
Instrumental variables						
BANK_MERGER	2.142***	2.174***	2.207***	0.329***	0.338***	0.342***
	(0.719)	(0.712)	(0.722)	(0.122)	(0.117)	(0.117)
Constant	2.891***	2.981***	2.932***	0.892***	0.905***	0.899***
	(0.334)	(0.334)	(0.335)	(0.161)	(0.162)	(0.161)
Accounting year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Dummies for main bank type	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-squared	0.226	0.212	0.210	0.053	0.050	0.051
Number of observations	1,002	1,002	1,002	1,002	1,002	1,002

Note: The upper rows are coefficients and the lower rows are heteroscedasticity-robust standard errors.

*Significant at the 10% level.

**Significant at the 5% level.

***Significant at the 1% level.

Table 5 2SLS regression (second-stage regression)

	Dependent variables:					
	(1)	(2)	(3)	(4)	(5)	(6)
Instrumental variable: BANK_MERGER	LnSHORT_ BANKS	LnLONG_ BANKS	LnTOTAL_ BANKS	LnSHORT_ BANKS	LnLONG_ BANKS	LnTOTAL_ BANKS
Number of bank relationships						
BANKS	0.170	3.110**	1.326			
	(1.874)	(1.580)	(1.657)			
MULTIPLE_BANKS				1.108	19.998	8.570
				(12.591)	(16.984)	(13.725)
Firm characteristics						
EMPLOYEES	0.001	0.043***	0.026**	-0.001	0.009	0.012
	(0.020)	(0.015)	(0.012)	(0.031)	(0.029)	(0.023)
MANAGER_AGE	0.000	-0.005	0.009	-0.001	-0.019	0.003
	(0.028)	(0.028)	(0.025)	(0.033)	(0.046)	(0.035)
MALE	-0.460	1.650	-0.092	-0.428	2.213	0.153
	(1.425)	(1.520)	(1.277)	(1.616)	(2.456)	(1.687)
OFFICES	-0.056	-0.188	-0.231	-0.061	-0.277	-0.269
	(0.181)	(0.182)	(0.188)	(0.216)	(0.277)	(0.236)
Firm financial information						
LIQUID_ASSETS	-0.475***	-0.061	-0.256***	-0.471***	0.000	-0.229*
	(0.096)	(0.104)	(0.082)	(0.119)	(0.156)	(0.119)
CASH	0.003	-0.006**	0.001	0.003	-0.007*	0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
ACCOUNTS_RECEIVABLE	-0.005	0.002	-0.005	-0.005	0.001	-0.005
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)
FIXED_ASSETS	-0.475***	-0.056	-0.252***	-0.471***	0.005	-0.226*
	(0.097)	(0.105)	(0.083)	(0.121)	(0.157)	(0.121)
TOTAL_ASSETS	0.476***	0.060	0.254***	0.473***	-0.001	0.228*
	(0.096)	(0.104)	(0.082)	(0.120)	(0.155)	(0.119)
CURRENT_LIABILITIES	0.011***	-0.012***	-0.002	0.011**	-0.011***	-0.002
	(0.004)	(0.003)	(0.002)	(0.005)	(0.004)	(0.002)
ACCOUNTS_PAYABLE	-0.004	0.002	-0.010	-0.005	0.001	-0.010
	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)
SHORT_BORROWING		0.001			0.000	
		(0.002)			(0.003)	
LONG_BORROWING	0.006			0.006		
	(0.004)			(0.004)		
TOTAL_LIABILITIES	-0.008*	0.006*	0.004	-0.008	0.006	0.004
	(0.004)	(0.003)	(0.003)	(0.005)	(0.005)	(0.004)
CAPITAL_ADEQUACY_RATIO	-0.023*	-0.066***	-0.057***	-0.022	-0.041	-0.046
	(0.012)	(0.014)	(0.016)	(0.025)	(0.034)	(0.029)
ROA	0.024*	0.066***	0.057***	0.022	0.041	0.046
	(0.012)	(0.014)	(0.016)	(0.025)	(0.034)	(0.029)
CAPITAL	-0.116***	0.005	-0.064*	-0.119**	-0.043	-0.084
	(0.035)	(0.036)	(0.037)	(0.054)	(0.079)	(0.065)
CURRENT_PROFIT	-0.030***	-0.016	-0.027***	-0.029***	-0.000	-0.020**
	(0.011)	(0.012)	(0.010)	(0.011)	(0.017)	(0.010)
Prefecture characteristics						
HHI	8.875	12.697*	8.516	8.743	10.184	7.456
	(8.245)	(7.699)	(6.913)	(7.705)	(10.249)	(7.164)
BANKS_RATIO	-4.093***	-2.052	-4.064***	-4.019**	-0.723	-3.493*
	(1.404)	(1.385)	(1.310)	(1.668)	(2.334)	(1.798)
GPP	0.000	0.000**	0.000**	0.000	0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FIRMS	-0.000	-0.000**	-0.000**	-0.000	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH_RATE	0.217	-0.147	0.029	0.217	-0.142	0.033
	(0.160)	(0.158)	(0.144)	(0.160)	(0.233)	(0.163)
STARTUP_RATE	-0.563	-0.656*	-0.804**	-0.559	-0.578	-0.773**
	(0.396)	(0.373)	(0.316)	(0.392)	(0.536)	(0.350)
Constant	-13.233**	-6.400	2.741	-13.729	-15.219	-1.080
	(6.035)	(5.658)	(5.481)	(11.491)	(16.135)	(12.744)
Accounting year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Dummies for main bank type	Yes	Yes	Yes	Yes	Yes	Yes
Wald chi-squared	1405.830	1762.100	809.760	1395.980	1007.750	684.030
Robustified Durbin-Wu-Hausman test (prob > F)	0.830	0.340	0.651	0.842	0.166	0.494
Number of observations	1,002	1,002	1,002	1,002	1,002	1,002

Note: The upper rows are coefficients and the lower rows are heteroscedasticity-robust standard errors.

*Significant at the 10% level.

**Significant at the 5% level.

***Significant at the 1% level.