Participation of Japanese Regional Banks in International Syndicated Loans: Lending Behavior and Explanatory Factors

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ABSTRACT

The recent internationalization trend among Japanese regional banks is a topic of interest for researchers in the context of regional bank growth strategy. This paper examines the factors that explain the lending behavior of regional banks in the international syndicated loan market during the period from 2009 to 2014. Through a comparative analysis and probit model using data from 11,565 transactions, it is found that regional banks prefer to participate in syndicated loans of lower amounts. The denomination of loans in Japanese yen is the most important factor in increasing the probability that regional banks will participate in these loans. The second most important consideration in explaining the lending behavior of regional banks relates to the characteristics of the borrowers. Regional banks prefer Asian borrowers that are in the financial services industry. Risk-taking and funding capacities can explain the characteristics of regional banks.

Keywords: Regional banks, Syndicated loans, Probit model

1.   Introduction

Regional banks have recently increased their intentions of doing business internationally, especially since the mid of 2000s. This study focuses on a new trend among regional banks: foreign currency loans. The balance of the foreign currency loans extended by regional banks has increased in the past five years. This shift is attributed to the participation of regional banks in international syndicated loans, which are mainly arranged by Japanese megabanks. Foreign currency loans are important to the growth strategies of regional banks because demand for loans cannot be expected to increase amid fierce competition in shrinking regional economies which drives interest rates lower. In other words, foreign currency loans in the form of participation in syndicated loans could serve as a new source of profits for regional banks. Furthermore, this topic is of interest to academic researchers who study both regional and multinational banks.

We often see news reports of regional banks becoming active in granting foreign currency loans. However, the details of the lending behavior of regional banks have not yet been investigated. Thus, this study will try to answer the following questions using data on syndicated loans. First, what is an overview of regional bank participation in syndicated loans? Second, which types of transactions do regional banks prefer?

The remainder of this study is organized as follows. The next section provides background on why regional banks are increasingly focused on doing business internationally and demonstrate their current participation in syndicated loans. Section 3 surveys the literature related to syndicated loans mainly from the perspective of their employed methods of analysis and explains how this study differs from existing studies. Section 4 explains the data and conducts a comparative analysis in order to determine the features of transactions involving regional banks. Section 5 will identifies the factors that affect the probability of regional bank participation by using a regression model and presents and interprets the findings. Section 6 summarizes the results of our investigation and explains their implications for future studies.

2. Background

2.1 International activities of regional banks

Regional banks have increased their international activities, focusing on Asia, since the mid 2000s. This trend consists of three pillars: business cooperation, representative offices and overseas loans. Business cooperation with foreign banks and the establishment of representative offices serve mainly to support overseas expansion by customer companies. Hence, they represent the core international business of regional banks and are positioned as extensions of relationship lending in the field of banking.

With regard to the first pillar, business cooperation had been established in well over 100 instances and has attracted a great deal of attention in the banking industry. Regional banks have mainly entered into business cooperation with Asian banks so aggressively that related stories are often reported by the media. Business cooperation aims to support overseas expansion by customer companies through a network of foreign banks. Support from regional banks is worthy of attention because the appreciation of the Japanese yen and the stagnant Japanese economy have helped the overseas operations of small and medium enterprises (SMEs) gain momentum.

Component of business cooperation is the provision of financial services, through foreign banks, to the overseas subsidiaries of the customer companies of regional banks that do not have overseas branches. These are divided into two businesses. The first delivers financial services to overseas subsidiaries through foreign banks under business cooperation agreements. These services include deposit transactions, trade financing,

and standby credit. The second provides local information on relevant subjects such as capital investments, and taxation. Some regional banks provide information through joint seminars with foreign banks and hold business meetings to match customers with relevant service providers.

The second pillar of international business for regional banks is the establishment of representative offices. The active expansion of SMEs, the main customers of regional banks, to Asia is driving regional banks to set up representative offices in Asian countries. Regional bank support of customer companies is of great social significance because SMEs expansion to Asia is positioned as one of the strategic pillars of the economic recovery plan presented by the Japanese Government. Regional banks have recently been locating representative offices in Bangkok and Singapore and have advanced their business organizations in Asia by establishing multiple offices. For instance, over 10 offices have been set up since 2012. Representative offices help increase domestic transactions, such as loans, with customer companies and generate profits by allowing banks to collect information on customers' overseas subsidiaries, address their inquiries, and consult on their problems. The increasing overseas expansion of SMEs has strengthened the business functions of representative offices.

2.2 Participation in syndicated loans

This study focuses on the third pillar of regional bank internationalization, foreign currency loans, which represent a recent trend. There are two reasons for the increase of foreign currency loans by regional banks. The first factor is the increased demand for foreign currency loans from customer companies. For example, Shizuoka Bank doubled its amount of foreign currency loans during fiscal year 2012 and, according to news reports, Chiba Bank announced a business strategy to further increase loans in the United States dollars (USD). The sources of USD are foreign currency deposits and interbank transactions; however, regional banks have implemented new funding measures to address the demand for foreign currency loans. For example, Iwate Bank issued a bond with booking rights to new stocks worth 100 million USD in July 2013 to facilitate its supply for USD loans.

However, this is not the main factor explaining the general increase of foreign currency loans but is rather applicable only to the regional banks that do not have overseas branches. In October 2013, the author conducted telephone interviews with 21 regional banks that have increased their foreign currency loans since 2007 to investigate the main force driving increases in foreign currency loans; 15 regional banks responded to the inquiry. The results show that the increasing demand for foreign currency is only the second most important reason for the increase in foreign currency loans.

Another factor, participation in international syndicated loans arranged mainly by megabanks, is the greatest driver of the increase in foreign currency loans. According to news reports, regional banks have started to participate in international syndicated loans with higher interest rate margins; participants include Hyakugo, Hachijuni, Shizuoka, and Tokyo Star Banks. For example, Hyakugo Bank announced its plan to increase its balance of foreign currency loans by 55 billion yen until fiscal year 2015 through international syndicated loans, among other initiatives. Moreover, Gunma Bank entered into international syndicated loans in fiscal year 2013 and plans to accumulate a balance of up to 10 billion yen.

Regional bank participation in international syndicated loans is closely related to the competitive position of megabanks in two ways. The first is the increasing role of megabanks as arrangers in primary markets. Megabanks occupied the top three positions in a ranking of arrangers in 2013. Arranging syndicated loans requires the arranger to gather participant banks for successful syndication. Thus, the more megabanks handle syndicated loans, the more regional banks have the chance to participate in them. This is because regional banks are good participant bank candidates due to their ease of communication with megabanks.

The second link is the sale of loans by megabanks in the secondary market. For example, Sumitomo Mitsui Banking Corporation (SMBC) started selling the international syndicated loans to capture regional bank demand. It has already executed its first transactions, selling 3.9 billion yen out of the 6.9 billion loan granted to Korean Airlines to four regional banks, including Shizuoka and Hachijuni Banks. According to news reports, SMBC has introduced less risky loans with guarantees from public financial institutions to regional banks, which enables regional banks without sufficient experience and information to increase their foreign currency loan balances. SMBC does not earn revenues from the sales of loans and has a strategy of expanding fee income from syndicated loans by increasing the number of arranging transactions. This is because participation by regional banks increases SMBC's lending ability and competitive advantage in the loan market.

Participation in international syndicated loans is not only a new trend in the international activities of regional banks, but is also significant from the perspective of the growth strategies of both regional banks and the Japanese economy. However, only news reports have been focusing on this aspect of regional banks and their behaviors in the syndicated loan market have not yet been investigated in detail by academics. Thus, this study aims to objectively highlight the participation of regional banks in syndicated loans by statistical methods.

3.   Literatures review

This section provides an overview of previous research to present the academic perspective and features of this study. Empirical analyses of syndicated loans have accumulated since the 1990s. An overview of previous research identifies three main method of analysis. The first investigates the factors influencing the decision of whether to set up a syndicate. This type of analysis uses a binary-choice model in which the explained variable is a dummy variable that takes a value of one if a loan is syndicated. The study of Dennis and Mullineaux (2000) falls into this category and examined how information asymmetry and loan terms affect the setting-up of a syndicate. Godlewski and Weil (2008) also studied the motives behind employing a syndicate in 50 emerging market countries.

The second type of analysis studies syndicate structure. This approach measures the size of the syndicate by the number of participant banks and investigates which factors affect syndicate structure. Count data models are employed to handle data such that the number of participant banks is a discrete and non-negative integer. Previous studies used the Poisson regression model, which is a basic model used to deal with count data. Lee and Mullineaux (2004) studied syndicated loans in the US and focused on borrower credibility as a factor influencing syndicate structure. Sufi (2007) also studied cases in the US and observed an effect of information asymmetry on syndicate structure.

The third type of analysis investigates differences in the lending behavior of syndicated loans depending on the types of banks involved. Many studies on differences in lending behavior turn decisions on spread into an object of analysis. These studies use an estimation equation in which the explained variable is spread and the explanatory variables are loan terms as well as dummy variables representing bank types. For example, Haselmann and Wachtel (2011) studied syndicated loans in 25 European countries and tried to identify differences between local and foreign banks. Foreign banks are commonly assumed to trade with more transparent companies compared to local banks because foreign banks hold less "soft information." However, the empirical results demonstrated that the conventional view applies only to small financial markets and that foreign banks grant loans to riskier companies and projects in countries with developed financial markets.

Harjoto, Mullineaux, and Yi (2006) examined 6080 syndicated loans in the US conducted from 1996 to 2003. They investigated differences in spread decisions between commercial and investment banks. Their empirical results showed that investment banks granted loans with longer maturities and higher spreads to companies with relatively lower profitability and higher leverage. The difference in spread between

these two types of financial institutions can be attributed to funding sources, financial regulations, accounting rules and relationships with customer companies. This result implies that there is a segmentation of banks in syndicated loan markets.

The overview of the previous literature shows the position of this study in the research field of syndicated loans. This study is similar to the first type of analysis with regard to the employed analytical method because it aims to investigate the characteristics of syndicated loans involving regional banks using a binary-choice model. Thus, this study takes a standard approach in terms of the analytical method. However, it is quite different from existing studies from the perspective of the object of investigation: regional banks. The research scope of previous studies does not cover the loan participation of regional banks because they assume the main participants of international syndicated loans to be global banks. This new trend is not only worth studying by academic researchers, but is also significant for the banking industry to identify new opportunities in response to highly competitive domestic markets.

4.   Comparative analysis

4.1 Data

What are the features of syndicated loans involving regional banks?   A comparative analysis can demonstrate which types of syndicated loans regional banks participate in to answer this question. The cases to be investigated are loan transactions involving megabanks. These transactions are chosen because in most cases, regional banks participate in syndicated loans through megabanks. Generally speaking, regional banks have less expertise in international business because most of them do not have overseas branches and they have few opportunities to get experience in syndicated loans. Most regional banks are dependent on megabanks for their participation in syndicated loans. Hence, syndicated loans originated by or involving megabanks are the population for this analysis.

Detailed data on loan transactions is required to provide an overview of the present situation. The data should include loan terms such as loan amount, loan maturity, and company profile. We obtained the required information from the DealScan database provided by Thomson Reuters LPC. This database is the world's largest database specialized in loan transactions and contains information on over 150,000 loan transactions covering Asia, North America, South America, and Europe. Many related studies, including Haselmann and Wachtel (2011) and Godlewski and Weil (2008), used this database.

To provide an overview of the situation, data for almost six years during the period from 2009 to 2014, covering 11,565 syndicated loans, is used. During this period,

Japanese megabanks increased their presence in global syndicated loan markets, in contrast to Western megabanks, which suffers from the subprime loan and European sovereign debt crises. Japanese megabanks have risen in the arranger rankings. This study sheds light on the lending behavior of regional banks in such a competitive environment.

4.2 Participation

Our overview of regional bank participation covers five points. The first is a ranking of participation. Figure 1 demonstrates the rankings of regional banks based on the number of deals they participated in. In total, 36 regional banks participated in syndicated loans from 2009 to 2014. First, we find large differences in the participation of regional banks.   Chiba bank is in the first place, having participated in as many as

Figure 1. Ranking of regional banks participating in syndicated loans

Bank Name	Number of Deals	Bank Name	Number of Deals	Bank Name	Number of Deals
Chiba *	86	San-In Godo	7	Daisan	1
Hachijuni *	36	Fukuoka	6	Kinki Osaka	1
Chugoku *	30	Joyo	6	Hokkoku	1
Gunma *	28	Higashi-Nippon	5	Fukui	1
Yamaguchi *	26	Oita	3	Kyoto	1
Shizuoka *	24	Ogaki Kyoritsu	3	Hokuto	1
Yokohama *	12	Tsukuba	3	Shonai	1
Hiroshima *	12	Akita	3	Michinoku	1
Minato	12	Tokyo Star	2	Nishi-Nippon	1
Iyo *	10	Toho	2	Aomori	1
Hyakujushi	10	Higo	2	Shiga *	1
77	8	Hokuriku	1	Ashikaga	1
Hyakugo	8	Daishi	1	Keiyo	1

Note: Banks marked with asterisks are subject to uniform international standards.

Source: Author's calculation based on DealScan

86 transactions. In contrast, 15 regional banks, accounting for 41% of the analyzed population, have participated in only one transaction in almost six years. We cannot observe the horizontal strategy noted by researchers investigating the lending behaviors of regional banks in the 1990s.

The second point of analysis is borrower nationality. Figure 2 presents a ranking of borrower nationality for the syndicated loans involving regional banks. We predicted

that an Asian country would be ranked first because geographical proximity reduces information asymmetry and facilitates regional bank participation in syndicated loans. It is more difficult for regional banks to evaluate the risk of overseas borrowers because they have fewer screening techniques and less experience. Hence, an Asian borrower with a familiar name of mitigates the difficulties related to risk assessment.

Figure 2. Borrower nationalities

Borrower country	Number of Deals	Borrower country	Number of Deals	Borrower country	Number of Deals
USA	64	Singapore	8	Malaysia	1
Korea	17	Australia	7	UAE	1
India	16	Vietnam	6	Cayman	1
Indonesia	13	Liberia	6	Netherland	1
China	12	Mexico	5	Brazil	1
Panama	11	UK	5	Belgium	1
HK	10	Chile	3	Canada	1
Thailand	9	Sweden	3	Philippines	1

Source: Author's calculation based on DealScan

In fact, the US takes the top borrower nationality ranking. However, there are 93 borrowers from Asian countries, including South Korea, China, India, Hong Kong, Thailand, Indonesia, Singapore, Vietnam, Malaysia, and the Philippines, which in total dominate the number of borrowers from the US. These figures may support the notion that our prediction is still valid. This discussion produces a hypothesis that an Asian nationality enhances the possibility of regional banks participation. We will test this hypothesis using statistical methods.

The third examined point is the currency denomination of syndicated loans. Figure 3 demonstrates the composition of currency denomination, with USD and Japanese yen in first and second place, respectively. This large share of USD can be partly explained by the borrower nationality, for which the US takes first place. Moreover, the number of Asian borrowers may explain the position of USD because many researchers suggest that Asian countries belong to the dollar bloc.

We find that regional banks prefer to syndicated loans denominated in Japanese yen. Difficulty in obtaining USD may be the cause of this preference. Most regional banks have difficulty with funding USD because they do not have abundant dollar deposits and cannot borrow dollars without larger spreads in interbank markets. These obstacles

produce the hypothesis that denomination in Japanese yen helps regional banks participate in syndicated loans.

Figure 3. Currency denominations

Currency	Number of Deals	Percentage	Currency	Number of Deals	Percentage
USD	119	58.6	AUD	3	1.5
JPY	64	31.5	Multi	2	1.0
CNY	5	2.5	CAD	1	0.5
HKD	4	2.0	Euro	1	0.5
US Equiv	4	2.0			

Source: Author's calculation based on DealScan

The fourth investigated point is loan purpose. Figure 4 demonstrates that the share of corporate purposes exceeds 40% and the top three loan purposes account for 76.8% of all loans. Generally speaking, loans for corporate purposes, working capital and debt repayment are short-term in nature. In contrast, the share of long-term loans is low. Capital expenditures, project financing, equipment purchases, shipping financing, aircraft financing account for only 18.7% of the total. This result implies that regional banks prefer short-term loans. In general, loans with longer maturities have greater credit risk because it is difficult to measure the success and failure of long-term projects and forecast business conditions. Regional banks may therefore tend to avoid taking on

Figure 4. Loan purposes

Purpose	Number of Deals	Percentage	Purpose	Number of Deals	Percentage
Corp.purposes	84	41.4	CP backup	3	1.5
Working capital	50	24.6	Takeover	3	1.5
Debt Repay	22	10.8	Equip. Purch.	2	1.0
Ship	15	7.4	Aircraft	1	0.5
Capital expend	14	6.9	Security Purchase	1	0.5
Project finance	8	3.9			

Source: Author's calculation based on DealScan

such loans.

The last point of the analysis is borrower industry. Out of the 203 transactions involving regional banks, 75 include borrowers belonging to the financial service

industry. The risk profiles of loans to the financial services industry differ greatly from those of loans to other industries. The loans of non-financial companies are used for real purposes, such as working capital and capital expenditures, whereas loans to financial companies are used to fund other loans. The effects of this difference on regional banks require further investigation.

4.3 Comparative analysis

We have already generated several hypotheses to be validated. First, we will use a comparative analysis to test these hypotheses. Comparisons are required to divide loan transactions into two groups: loans involving both megabanks and regional banks and loans involving only megabanks. We call the former PARTICIPATION and the latter Non-PARTICIPATION based on the inclusion of regional banks in the syndicate. Investigations on loan terms and other differences between these two groups enable us to identify the features of PARTICIPATION loans.

The variables to be compared between the PARTICIPATION and NON-PARTICIPATION groups are divided into three categories. The first represents loan terms and syndicate structures.

AMOUNT: Size of syndicated loan converted to millions of USD
MATURITY: Period of syndicated loan, represented in years
NUMBER: Size of syndicate measured by number of participant banks
JPY: Dummy variable taking a value of one if the syndicated loan is denominated in Japanese yen
USD: Dummy variable taking a value of one if the syndicated loan is denominated in United States dollars

The second category of variables consists of loan purposes. We will investigate two loan purposes: WORKING and CORP, representing the working capital and corporate purposes, respectively. These loan purposes rank first and second in the composition of loan purpose composition. These dummy variables take values of one if the loan purpose falls into their respective categories.

The third category of variables includes the following proxies for borrower credit risk and characteristics.

RATE: Dummy variable taking a value of one if a borrower has a credit rating
GUARANTOR: Dummy variable indicating whether a loan has a guarantor; if a loan is guaranteed, this variable takes a value of one

ASIA: Dummy variable showing whether the borrower is from Asian country; if the borrower is an Asian entity, this variable takes a value of one

FINANCIAL: Dummy variable taking a value of one if the borrower belongs to the financial services industry

We employed the Mann-Whittney U-test to detect differences between these two groups with regard to continuous variables. This is one of the well-known non-parametric methods for testing the differences between two independent groups. The null hypothesis under this test is that there are no differences between the two groups. We employed the U-test because the two groups have different variations with regard to continuous variables. Additionally, we used the $\chi 2$ test for the dummy variables because they are discrete. This method tests the null hypothesis that there are no differences in the ratios of the PARTICIPATION and Non-PARTICIPATION groups.

Figure 5. Comparative analysis: Continuous variables

	Participation		Non-Participation		U-test
	Means	Sample	Means	Sample	
AMOUNT (millions)	344	203	691	11356	0.00
MATURITY (years)	5.02	201	4.61	11084	0.06
NUMBER	11.0	203	11.5	11347	0.00

Figure 5 shows the results for three continuous variables. First, we obtained statistically significant results that regional banks participated in relatively smaller transactions. The differences in the loan amounts between the two groups are sufficiently large that this result can be regarded as economically significant. Second, we found insignificant differences in loan maturities; the mean difference is only 0.3 years, which cannot be considered an economically significant result. Moreover, this result does not support our prediction that regional banks prefer syndicated loans with shorter maturities based on the observation that regional banks choose loans for corporate and working capital purposes. Third, we also find a statistically significant difference in NUMBER. However, we cannot consider this difference to be economically significant because the gap between the two groups is just 0.5.

Figure 6 reports the comparative results for the dummy variables. The results shows the preferences of regional banks in terms of loan denomination. Although USD takes

the top ranking in the currency composition, we can confirm a lower share of USD in the transactions involving regional banks; this result is statistically and economically significant. Moreover, the difference in JPY is more striking and demonstrates that regional banks are inclined to participate in loans denominated in Japanese yen. This result is consistent with our prediction.

Figure 6. Comparative analysis: Dummy variables

		Participation		Non-Participation		χ^2 test
		N	Ratio (%)	N	Ratio(%)	
JPY	0	139	31.5	11258	0.9	0.00
	1	64		104		
USD	0	84	58.6	3059	73.1	0.00
	1	119		8303		
WORKING	0	153	21.2	10739	5.3	0.00
	1	50		623		
CORP.	0	119	41.4	5105	55.1	0.00
	1	84		6257		
RATE	0	102	49.8	5517	51.4	0.63
	1	101		5845		
GUARANTOR	0	174	14.3	10279	9.5	0.02
	1	29		1083		
ASIA	0	112	44.8	10169	10.5	0.00
	1	91		1193		
FINANCIAL	0	128	36.9	10299	9.4	0.00
	1	75		1063		

Next, the results for loan purposes differ from our expectation. We forecast that PARTICIPATION would represent a larger share of CORP based on the loan purposes observed in Figure 4. However, PARTICIPATION shows a larger share of working capital and this result is also economically significant.

Moreover, the results for borrower characteristics also differ from our predictions. RATE is not statistically significant and we cannot find any meaningful differences between the two groups. Although the result for GUARANTOR is statistically significant, the difference is relatively small and not economically significant. Meanwhile, the results for the other two variables are striking. Among the transactions involving regional banks, the share of ASIA is much higher; this result indicates that regional banks prefer Asian borrowers. The result for FINANCIAL, which is also consistent with our prediction, represents a greater share of PARTICIPATION.

We have confirmed that there are remarkable differences between the two groups in loan amounts, currencies, purposes, and borrower characteristics. However, we will answer our research questions after analyzing the lending behavior of regional banks while simultaneously controlling for several variables.

5.   Regression analysis

5.1 Methodology

We will study the features of PARTICIPATION transactions by using the following probit model. The data used here are the same as those used for the comparative analysis in the previous section.

PARTICIPATION = F (Loan terms, Loan purposes, Borrower characteristics)

The explained variable is a dummy variable for regional bank participation in loan transactions and takes a value of one if regional banks participated in a syndicated loan. We employed the significant explanatory variables from the comparative analysis results.

The first loan term variable is amount and we use its log value (LAMOUNT) as the explanatory variable in the estimation equation. The comparative analysis demonstrated that regional banks tend to participate in syndicated loans of smaller amounts. Hence, we can expect the coefficient of LAMOUNT to be negative. The second loan term variable is maturity. The longer the loan maturity, the greater the uncertainty of loan collection generally becomes. A longer maturity increases credit risk because it is difficult to predict the future business performance of the borrower. Although shorter maturities are generally assumed to have a positive effect on regional bank participation in loan transactions, we cannot forecast a sign for the coefficient of MATURITY. The third variable, NUMBER, captures syndicate structure through the number of participant banks. The comparative result for NUMBER does not present definite differences; hence, it is difficult to forecast the sign of its coefficient. The last loan term variable is JPY. We expect its coefficient to be positive because we previously confirmed the significantly large share of transactions denominated in Japanese yen.

The second group of explanatory variables covers loan purposes and includes two variables: CORP and WORKING. It is difficult to forecast the sign of the coefficient of CORP because the share difference is relatively small, while the comparative analysis presented significant results. Meanwhile, the coefficient of WORKING is expected to be positive based on the comparative results.

The third group of explanatory variables, which capture borrower characteristics, consists of four variables. However, we do not expect significant results for RATE and GUARANTOR. The comparative analysis did not show a significant difference for RATE. We confirmed a greater share of PARTICIPATION transactions with regard to GUARANTOR; however, the difference between the two groups is relatively small. On the other hand, the remaining explanatory variables are expected to be statistically significant considering the comparative results. We forecast that ASIA will have a positive coefficient because the comparative analysis showed a large difference in share between the groups. Last, FINANCIAL will have a positive coefficient.

5.2 Results

Figure 7 demonstrates the estimation results. First, the coefficient of AMOUNT is negative, as expected. This result supports the tendency of regional banks to participate in transactions including smaller loans. Figure 5 demonstrated that PARTICIPATION transactions have lower mean of NUMBER. Jointly considering these results, we can speculate that regional banks extended smaller loans because of their funding and risk-taking capacities. We cannot find significant results for MATURITY. Only model 5 has statistically significant results, producing both positive and negative coefficients. The effect of MATURITY on regional bank participation therefore remains undefined. NUMBER has a positive and statistically significant coefficient, although we could not have predicted this result from the comparative analysis. This indicates that the larger the syndicate, the higher the probability that it will include regional banks.

The estimation result for JPY shows that its coefficient is positive and statistically significant, as expected. This result indicates that the probability that regional banks will participate in loan transactions in Japanese yen is relatively high. This relationship may be due to the funding constraints of regional banks.

The results for corporate purposes differ from our participations. We cannot confirm a significant result for CORP, which is consistent with the comparative analysis shown in Figure 6. However, the coefficient of WORKING is positive and statistically significant, as expected. Because the working capital is used for ordinary business activities, it is easier to evaluate credit risk for loans that have this purpose relative to others, such as capital expenditures, with longer maturities and higher uncertainty. Hence, regional banks tend to participate in syndicated loans for working capital.

Figure 7. Estimation results

	Model 1	Model 2	Model 3	Model 4	Model 5
LAOMOUNT	-0.130**	-0.130**	-0.131**	-0.087**	-0.083**
	(0.025)	(0.025)	(0.025)	(0.027)	(0.028)
MATURITY	-0.0001	0.001	0.0009	0.001	0.002**
	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)
NUMBER	0.014**	0.016**	0.016**	0.014**	0.015**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
JPY	1.911**	1.821**	1.839**	1.832**	1.833**
	(0.112)	(0.114)	(0.114)	(0.115)	(0.11)
CORP.	-0.091				
	(0.066)				
WORKING		0.590**	0.568**	0.495**	0.468**
		(0.091)	(0.092)	(0.095)	(0.098)
RATE	0.147*	0.137	0.155*	0.309**	0.227**
	(0.073)	(0.071)	(0.072)	(0.079)	(0.080)
GUARANTOR			0.195*	-0.007	
			(0.096)	(0.101)	
ASIA				0.810**	0.681**
				(0.078)	(0.079)
FINANCIAL					0.660**
					(0.080)
CONST	0.069	-0.115	-0.117	-1.224*	-1.454**
	(0.462)	(0.464)	(0.465)	(0.513)	(0.529)
Sample	11270	11270	11270	11270	11270
Pseudo R^2	0.173	0.189	0.191	0.242	0.274

Note: *, ** indicate that parameters are statistically significant at confidence
level of 95% and 99%, respectively

As for borrower characteristics, we find significant results for three out of the four
variables. In contrast to the comparative analysis, which does not show a definitive
difference in RATE, the coefficient of RATE is positive and statistically significant.
This variable is considered to be related to the production of information on borrowers
and supplies additional credit information to regional banks. Hence, RATE facilitates
regional bank participation in loan transactions by mitigating information asymmetry on
borrower credit risk. We cannot confirm a definitive result for GUARANTOR.

A significant result is found for ASIA, as expected. This variable also related to the
information problem. Familiar names of Asian borrowers may lower the hurdle
preventing regional banks from entering syndicated loan markets by making risk

evaluation easier and decreasing information production costs. The coefficient of FINANCIAL is positive and statistically significant. In general, the financial services industry is effectively protected by governments and insolvent banks have been bailed out under the "too big to fail" principle. This implicit guarantee may help regional banks participate in loans to the financial services industry.

Figure 8. Marginal effects

Explanatory variable	Marginal effect	Explanatory variable	Marginal effect
LAOMOUNT	-0.001	NUMBER	0.000
MATURITY	0.000	WORKING	0.016
RATE	0.003	ASIA	0.027
JPY	0.256	FINANCIAL	0.026

The probit model demonstrates how the probability of participating in syndicated loans changes in response to changes in the explanatory variables by calculating the magnitudes of marginal effects. Figure 8 shows the calculations of marginal effects with regard to model 5. JPY produces the greatest effect on the probability of participation. This result supports the notion that regional banks prefer loans denominated in Japanese yen. ASIA and FINANCIAL have the next strongest marginal effects. This indicates the importance of borrower characteristics in determining participation in loan transactions. This result also demonstrates the effect of WORKING.

6   Concluding remarks

This study focused on the international activities of regional banks and investigated their participation in international syndicated loans. This topic is important to the growth strategies of regional banks. The demand for regional loans is expected to decrease in the context of a shrinking economy and fierce competition that drives interest rates down.   In this context, international syndicated loans can be a potential new source of profits for regional banks. Hence, we investigated the recent developments and lending behaviors of regional banks using a sample of 11,565 transactions conducted from 2009 to 2014.

We posed two questions to investigate lending behavior of regional banks in international syndicated loan markets. The first asked about the general participation of regional banks in syndicated loans. We illustrated the participation situation by employing detailed transaction data containing loan terms and borrower characteristics. First, large differences in participation among regional banks attracted our attention.

Second, regional banks subject to uniform international standards have an advantage over other regional banks in terms of loan participation. Third, we found many Asian borrowers and noted that the largest number of loans are denominated in USD. Moreover, corporate purposes account for the largest share of loan purpose.

The second question asked which types of loan transactions regional banks prefer to participate in. We answered this question by using comparative and regression analyses. The estimation results indicated that regional banks prefer syndicated loans of smaller amounts. Loans denominated in Japanese yen have the greatest effect on increasing the probability of regional bank participation. The second most important factor in explaining the lending behavior of regional banks relates to borrower characteristics. Regional banks prefer Asian borrowers and those in the financial services industry. We found these characteristics by comparing regional bank participation with that of Japanese megabanks.

With regard to possible extensions of this research, we suggest one avenue. A comparative analysis of current lending behaviors with those from the1990s, when regional banks actively participated in international syndicated loans. The period of the 1990s is regarded as containing the first internationalization of regional banks, and the recent period after the mid 2000s is regarded as containing their second internationalization. A comparison between the first and second internationalizations will shed more light on the lending behaviors of regional banks.

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