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Empirical Determinants of Bargaining Power

UCHIDA Hirofumi

Wakayama University



Research Institute of Economy, Trade & Industry, IAA

The Research Institute of Economy, Trade and Industry

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Empirical Determinants of Bargaining Power[†]

Hirofumi Uchida[‡]
 Faculty of Economics
 Wakayama University

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Abstract

This paper empirically investigates what determine *bargaining power* between a lender and a borrower who have continuing transactional relationships. Bargaining power is proxied by which side of the transaction, i.e. the lender or the borrower, usually incurs a shoe-leather cost when they have contact. The proxy is regressed on three types of variables that can potentially determine distribution: (i) lender's competition, (ii) the degree of informational asymmetry between the two parties, and (iii) borrower performance. Consistent with theoretical predictions, we find that intensive lender competition and borrowers' good performance increase the likelihood of the lender incurring the cost, or the borrower's power. We also obtain evidence suggesting that some lenders enjoy a status of *informational monopoly* and capture borrowers.

Keywords: Bargaining power, Distribution, Banking relationship, Asymmetric information, Competition

JEL classification code: D30, C78, L13, G21, L14

1. Introduction

The aim of this paper is to empirically investigate what determine *bargaining power*, or distribution, between two parties involving a transaction. From a uniquely designed survey of corporate finance issues that contains information about continuing transactional relationships between small- and medium-sized enterprises (SMEs) and their main lending banks, we obtain a proxy for the bargaining power: which side of the transaction, a lender or a borrower, usually

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[‡] Faculty of Economics, Wakayama University, 930 Sakaedani, Wakayama 640-8510, Japan. Tel.: 81-73-457-7710, Fax.: 81-73-457-7711, E-mail: uchida@eco.wakayama-u.ac.jp.

incurs a shoe-leather cost when they have contact.¹ We regress this unique proxy on three types of variables that can potentially determine rent distribution: (i) lender's competition (the degree of competition), (ii) borrower performance (creditworthiness of the borrower), and (iii) the availability of borrower's information (the degree of informational asymmetry between the two parties).

Consistent with theoretical predictions, we find that intensive lender competition and borrowers' good performance make the borrower powerful and increase the likelihood of lender incurring the cost. As for the availability of borrower's information, although we find that frequent availability of hard information decreases the likelihood, neither lender's knowledge about the borrower nor auditing of financial statements makes difference in determining the bargaining power. Thus, the impact of asymmetric information on bargaining power is found to be relatively weak. We also obtain evidence suggesting that some lenders enjoy a status of informational monopoly and capture borrowers.

The biggest contribution of this paper is its uniqueness in directly testing theoretical predictions from the theory of competition, the bargaining theory, or the economics of information on the determinants of distribution. On balance, the results obtained in this paper confirm the validity of those theories. Competition and borrower quality matter as determinants of bargaining power, whereas informational asymmetry does not play a big role.

Distribution between a lender and a borrower is an important empirical issue in the literature on banking relationships. One of their focuses is on whether or not a stronger bank-borrower relationship leads to any material benefit to the borrower in the form of favorable terms of credit such as a low loan interest rate.² Although our focus here as explained above is not limited to the effect from a strong banking relationship, since we have a proxy for the strength of the banking relationship as an independent variable, the present study can also be regarded as one of the *benefit* studies of banking relationship. As such, the present paper adds to this literature by making use of our unique proxy for the relationship benefit. An advantage of this proxy over the credit-term proxies in the conventional studies is that our proxy captures an average benefit with a longer-term perspective in a sense that lender-borrower

¹ In the case of bank lending to SMEs, lenders have frequent contact with the borrower in the course of a long-term relationship in order to monitor and collect information about the borrowers' creditworthiness. For this strong banking relationship, see a survey by Boot (2000), for example.

² See studies such as Petersen and Rajan (1994) and Berger and Udell (1995). See Boot (2000) as well.

contact is more frequent phenomena than loan contracting.

Burdett et al. (1995) theoretically investigate a closely related issue of *should I stay or should I go* in a search model. Their focus is however on an endogenous choice of go or stay by agents searching for a *new* partner to transact. In the present paper, we investigate the distribution between two parties which already have some stable transactional relationships in the form of the *main bank* relationship.

The remaining part of the paper is composed as follows. In the next section, we briefly survey theoretical predictions on the determinants of the bargaining power. Data and methodology are introduced in Section 3. Section 4 reports the results. The final section concludes the paper.

2 Theory

In this paper, the term *bargaining power* refers in a broad sense to what determine the “share of the cake,” or distribution, between two parties involving in a transaction. In a Nash bargaining context, the bargaining power is just defined as the relative weights put on utilities of the trade partners which constitute their joint objective function to maximize. The basic Rubinstein alternating-offers model shows that the weights are determined by the relative magnitude of the two players’ discount rates.³ The term is, however, often used in different contexts to refer to rent distribution in general between two parties involving a transaction. We use the term in this broader sense.

As such, theories make several predictions about the determinants of the bargaining power. First of all, we expect that the *degree of competition* is an important factor to determine the power. Theory of competition predicts that competition gets rid of excessive rents from the competing parties. Competition on one side of the transaction provides a party on the other side with a greater chance to meet a different trade partner at a lower price. We thus expect that *the more intensive competition that the lender faces, the greater power the borrower obtains.*

Borrower’s performance or creditworthiness is also a factor affecting the bargaining power. If there is scarcity of supply in good borrowers, a creditworthy borrower attracts a bigger

³ If there is a risk of breakdown, the weights also depend on the breakdown probability. See Mothoo (1999) for example.

number of lenders and thus obtains greater power. The hypothesis is therefore that *a more creditworthy borrower obtains greater power*.

Finally, informational asymmetry may also play a big role in the determination of the bargaining power. As the economics of information predicts in a variety of models, a party with informational advantage can extract informational rent from a trading partner who has inferior information. This implies that as a lender becomes more knowledgeable about a borrower, the lender obtains greater power.

However, we should also take into account the informational asymmetry *among lenders* with respect to the information of the borrower's creditworthiness. If the knowledge the incumbent bank obtains is private information, the bank obtains a status of *informational monopoly* as opposed to competing banks, and can obtain greater power (Greenbaum et al.(1989), Sharpe(1990), Rajan(1992), and von Thadden(2004)). However, if the knowledge is public information which even competing banks can be accessible to, competition gets rid of the power from the lender.

3 Data and methodology

Data source

The data source of this paper is the “*Management Survey of Corporate Finance Issues in the Kansai Area*,” which was conducted in Japan in June 2005 by the Regional Finance Workshop in the Research Institute of Economy, Trade, and Industry (RIETI). This RIETI survey asks small- and medium-sized enterprises (SMEs) about firm characteristics, management strategy, bank relationships, and loan screening process.⁴ We have effective answers from 2020 firms which locate in the three prefectures, Osaka, Hyogo, and Kyoto, in the Kansai area in Japan.⁵ The average sample firm was established in 1967, employs 150 persons, has a capitalization of 764 million yen, and has 1.19 billion yen of sales. The length of the relationship between an SME and its main bank in our data set is very long and is 27.9 years on average.

⁴ The data set is the same as that for Uchida, Udell, and Yamori (2006a, 2006b). See Uchida, Udell, and Yamori (2006a) for more details of the data set.

⁵ Kansai area is located in the middle of the main island of Japan, and the three prefectures in the area form the focal point for the economy of western Japan.

Methodology and dependent variable

We run a regression with taking a proxy for bargaining power as a dependent variable. The dependent and independent variables are explained below. Their descriptive statistics are shown in Table 1. The availability of all the variables reduced the number of observations and the regression is run with 1075 observations.

The dependent variable is a dummy variable THEYCOME, which is constructed as follows. In the RIETI survey, firms are asked “*where do you (= the firm’s entrepreneur or a person in charge) usually meet with the loan officer of your main bank,*” and the firm chooses an answer from three options: 1. *at your company*, 2. *at the bank branch office*, and 3. *other places*. The variable THEYCOME takes a value of one if the firm chose option 1, and zero if the firm chose option 2.⁶ This variable represents which side of the transaction, a lender or a borrower, usually incurs a shoe-leather cost when they have contact. Incurring the cost corresponds to the lack of bargaining power. We run a Probit regression with this variable as the dependent variable.

Main Independent variables

Based on the discussion in Section 2, we use independent variables that are grouped into three categories. First, to proxy bank competition, we use two variables. The RIETI survey asks borrowers, “*whether the frequency of visit by banks other than the main bank increased in the past two years.*” We construct a dummy variable VISITINC_OTHER which takes on a value of one if the firm answered yes to this question. This dummy variable represents the intensification of competition between the main bank and other banks (from a borrowers’ point of view). We also include the number of the banks that the firm currently borrows from, N_BK, as an independent variable. This variable captures the degree of competition among banks which already have transactional relationships with the borrower. We predict that these variables have a positive impact on THEYCOME.

Second, we use two proxies for borrowers’ performance. PERFORMANCE_S is a dummy variable representing that the borrowing firm was in surplus (i.e. profitable) in the last accounting year. A dividend dummy DIVIDEND, which takes on a value of one if the firm paid dividend in the last accounting year, also represents the firm’s good performance. These

⁶ Sample firms which chose “other places” are excluded from the sample.

two variables proxy for good performance of the borrower, and should have a positive impact on the dependent variable.

Finally, several variables are used as proxies for the availability of borrower's information. Here, we make a distinction between hard verifiable information from financial statements and soft non-verifiable information such as the entrepreneur's personal skills and integrity. The former can be transferred or documented, whereas the latter is difficult to document and deteriorates through its transmission among agents or within organizational hierarchy. This distinction is important because they might have different impact on rent distribution. The former is likely to be public information, the availability of which should increase borrower power. The latter is likely to be private information, the production of which should increase lender power (under intensive lender competition). The distinction is important also because different lending technologies might be employed depending on the hardness/softness of information.⁷

To represent availability of hard information, we use three variables. First, AUDIT takes on a value of one if the firm has its financial statements audited by a CPA. Second, FINSTAT is a dummy variable which equals to one if the firm has any financial statements. Finally, FREQ_FINSTAT represents how many times a year the firm submits financial statements to the main bank. Among these three variables, AUDIT is the most important because it represents that the information from financial statements is certified by a third party, and is thus reliable. If these variables capture publicly available information, they are likely to have a positive impact on THEYCOME. However, if hard information proxied by these variables is private information, the impact should be negative.

The availability of soft information is difficult to measure. We thus use an index a la Scott (2004) that captures to what extent the main bank is knowledgeable about the borrower in terms of soft information. The RIETI survey asks the respondent firms about characteristics regarding which the firm rates the lender's knowledge. Six of them are with respect to soft information.⁸ Following Scott (2004) and using these six characteristics, we created a measure

⁷ When hard information from financial statements is available, banks can deploy the *financial statement lending technology*. When only soft information is available, banks should employ the *relationship lending technology*. See Berger and Udell (2002, 2006) for more on lending technologies.

⁸ The six characteristics are: 1. [The lender] Knows your business (the firm itself and its business), 2. [The lender] Knows your managers and owners (the firm's managers and owners), 3. [The lender] Knows

of soft information production, SOFT.⁹ Since SOFT is likely to be associated with private knowledge of the main bank, we expect that the variable has a negative impact on THEYCOME.

Relationship strength

LENGTH is the length of the relationship between the borrower and the main bank. Since the main bank can accumulate proprietary information about the borrower through a long-term relationship, this variable may have a negative impact on THEYCOME. However, if the information is not unique to the main bank or is gradually funneled out, the bank cannot obtain a monopoly status and then LENGTH may have a positive impact.

It should be noted here that because THEYCOME proxies for a relative benefit between a lender and a borrower, the regression with LENGTH as an independent variable can be considered as an analysis on whether there is any benefit from a strong bank-borrower relationship. There is abundance of studies on the banking relationships which empirically examine the benefit by using terms of credit such as a loan interest rate as proxies for the benefit.¹⁰ As one of such studies, the present study adds to the literature by using our unique proxy for the benefit. Compared with frequent lender-borrower contacts in the course of a long-term relationship, loan contracts are made occasionally, so that credit terms are observed relatively infrequently. Our unique proxy, i.e. which usually incurs a cost of contact, has an advantage over conventional credit-term proxies since it captures benefit on a *continuous basis* in the course of everyday contact between the lender and the borrower. Individual credit terms may not be good proxies also because they are simultaneously determined and are thus difficult to evaluate in their isolation.

your industry (the firm's industry), 4. [The lender] Knows the local community (the local community the firm is in), 5. [The lender] Know the market (the firm's market), and 6. Social contact with loan officer (loan officer has frequent contact with the firm).

⁹ With respect to each of the characteristics, the survey asks (1) how important the firm reckons it in doing business with a financial institution (in general). This question captures the firm's perception of what define a good lender. The firms are also asked to evaluate (2) to what extent the current main bank is satisfactory for each characteristic. This captures the firm's evaluation of the current main bank. The answers to the both questions are chosen on a 5-point scale from 1 (very good) to 5 (very bad). For each of the six characteristics, we constructed a dummy variable which takes a value of one if the firm chose 1 for both questions (1) and (2). SOFT is the first component of the principal component analysis over the resulting six dummies. Note that the survey that Scott (2004) uses allows him to use only four similar characteristics to construct an index.

¹⁰ See Petersen and Rajan (1994), Berger and Udell (1995), and Kano et al. (2006), for example.

Control variables

We also use different control variables. ASSET is the size of the firm's asset, FIRMAGE is the age of the firm, EMPLOYEE is the number of employees. These variables may also represent the size-related availability of hard and public information of the borrower that is different from financial statement information. In that case, the coefficients of these variables should be negative. Similar prediction applies to other two dummy variables, LISTED which represents that the firm is listed, and AFFILIATE which represents that the firm is affiliated with a parent company.

We also use two bank-type dummies to represent the size and the organizational complexity of the lending bank. COOPERATIVE takes on a value of one if the main bank is either a Shinkin bank or a credit cooperative. REGIONAL represents that the firm's main bank is either a regional bank or a second tier regional bank. Banks represented by COOPERATIVE is smaller in size and less complex in terms of organizational structure than banks represented by REGIONAL. The latter is however smaller and less complex than a bank of three types (= default): a city bank, a long-term credit bank, or a trust bank. These dummies are introduced to control for the difference in lenders' characteristics and the lending technologies used. Stein (2002) theoretically shows that while small banks are good at producing soft information, large banks are not. This implies a negative coefficient of COOPERATIVE (and REGIONAL to a lesser extent).

Finally, we use industry dummies and urban (regional) dummies. Industry dummies are CONST (construction), IT (information and telecommunication), TRANSPORT (transportation), WHOLESALE (wholesale), RETAIL (retail), REALESTATE (real estate), and SERVICES (other services). Three urban dummies are OSAKA, KOBE, and KYOTO which are constructed from the firm's area code of the telephone number and thus represent that the firm is located in or around the three biggest cities in the Kansai area. The default firm is in the manufacturing industry and locates in rural areas.

4. Results

Table 2 reports the regression results of the Probit estimation. First, VISITINC_OTHER which represents increased competition among lenders is positive and significant, meaning that

intensification of lenders' competition leads to lenders incurring the shoe-leather cost. This is consistent with a theoretical prediction that competition gets rid of rents. The number of lending banks is however not significant. This may imply that it is not competition with incumbent banks but competition with potential lenders that matters.

As for the two performance variables, both of them have a positively significant impact on THEYCOME. Consistent with a theoretical prediction, lenders tend to incur the shoe-leather cost and visit borrowers when their performance is good. Creditworthy borrowers have bigger bargaining power.

Among the four information availability variables, only `FREQ_FINSTAT` is significant. Frequent submission of financial statements contributes to the borrowers' visits to the lenders' place. This is consistent with the theoretical prediction in a sense that increased transparency of borrowers reduces lenders' informational disadvantage and thereby increases lender power. However, this result may also imply that the borrower with small bargaining power has to disclose its information more frequently. On balance, the results on information availability variables are not very strong since the other three variables are insignificant.

Finally, `LENGTH` has a negative impact on THEYCOME. This may imply that a bank can accumulate information about the borrower through a longer relationship and obtain a status of informational monopoly. The borrower is then captured by the bank and has to incur a shoe-leather cost.

5. Conclusion

Using a unique proxy, we examined the determinants of bargaining power between lenders and borrowers. The results were consistent with theoretical predictions that competition among lending banks and good performance of the borrower contribute to the borrowers' extraction of more bargaining power from the lender. We also found evidence that resolving informational asymmetry leads to lenders obtaining more bargaining power, although the evidence was weak.

On balance, the results obtained in this paper confirm the validity of those theories. Competition and borrower quality matter as determinants of bargaining power, although informational asymmetry does not play a very big role.

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Table 1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
THEYCOME	1539	0.803	0.398	0	1
VISITINC_OTHER	1649	0.559	0.497	0	1
N_BK	1563	3.638	3.145	0	34
PERFORMANCE_S	1649	0.813	0.390	0	1
DIVIDEND	1649	0.429	0.495	0	1
FREQ_FINSTAT	1444	2.499	2.986	1	13
FINSTAT	1649	0.953	0.211	0	1
AUDIT	1649	0.129	0.335	0	1
SOFT	1649	0.072	1.725	-0.7323	9.1724
LENGTH	1514	27.053	16.324	0	109
LOG(ASSET)	1486	21.014	1.737	12.9480	28.2955
LOG(EMPLOYEE)	1637	3.951	1.280	0.0000	10.0470
FIRMAGE	1479	49.360	24.368	1	136
LISTED	1649	0.040	0.196	0	1
AFFILIATE	1649	0.131	0.337	0	1
REGIONAL	1649	0.192	0.394	0	1
COOPERATIVE	1649	0.159	0.366	0	1
CONST	1649	0.124	0.330	0	1
IT	1649	0.029	0.166	0	1
TRANSPORT	1649	0.067	0.251	0	1
WHOLESALE	1649	0.198	0.399	0	1
RETAIL	1649	0.058	0.234	0	1
REALESTATE	1649	0.023	0.150	0	1
RESTAU_HOTEL	1649	0.018	0.134	0	1
SERVICES	1649	0.118	0.322	0	1
OSAKA	1649	0.423	0.494	0	1
KOBE	1649	0.096	0.295	0	1
KYOTO	1649	0.145	0.352	0	1

**Table 2 Estimation Result
(Independent variable = THEYCOME)**

Variable		dF/dx	Std. Error	Prob.
Lender Competition	VISITINC_OTHER	0.0637 **	0.0252	0.0100
	N_BK	-0.0023	0.0046	0.6170
Borrower Performance	PERFORMANCE_S	0.0646 *	0.0339	0.0410
	DIVIDEND	0.0929 ***	0.0253	0.0000
	Soft Info. SOFT	0.0067	0.0068	0.3240
Availability of	FREQ_FINSTAT	-0.0214 ***	0.0034	0.0000
Information	Hard Info. FINSTAT	-0.0705	0.0511	0.2640
	AUDIT	-0.0002	0.0355	0.9950
Borrower Characteristics	LENGTH	-0.0023 ***	0.0008	0.0070
	LOG(ASSET)	0.0291 **	0.0142	0.0410
	LOG(EMPLOYEE)	-0.0143	0.0182	0.4330
	FIRMAGE	0.0006	0.0006	0.3310
	LISTED	0.0681	0.0609	0.3580
	AFFILIATE	-0.1305 ***	0.0496	0.0030
Lender Type	REGIONAL	-0.0353	0.0335	0.2730
	UNION	-0.0272	0.0366	0.4410
Borrower Industry	CONST	-0.0080	0.0370	0.8270
	IT	0.0594	0.0563	0.3710
	TRANSPORT	0.0317	0.0435	0.4960
	WHOLESALE	0.0725 **	0.0279	0.0210
	RETAIL	0.0014	0.0488	0.9770
	REALESTATE	-0.1020	0.1120	0.2990
	RESTAU_HOTEL	0.1093	0.0513	0.1870
SERVICES	0.0667 *	0.0311	0.0650	
Borrower Region	OSAKA	0.0409	0.0268	0.1320
	KOBE	0.0085	0.0413	0.8390
	KYOTO	0.0144	0.0339	0.6770
	Prob > chi2	0.0000		
	Pseudo R2	0.1194		
	Number of observations	1075		

Notes:

The result from a Probit estimation is shown. The dependent variable THEYCOME is equal to one if the borrower and the main bank usually have contact at the borrower's place as opposed to the branch office of the main bank.

The main independent variables are grouped into three categories: (1) Lenders competition, (2) Availability of Information, and (3) Borrower Performance. (1) Lenders competition: Dummy variables VISITINC_OTHER and VISITINC_MB represent the increase in visits from the banks other than the main bank (OTHER) and the main bank (MB), respectively. N_BK represents the number of lending banks. (2) Availability of Information: SOFT is an index a la Scott (2002) for the lender's knowledge about the borrower in terms of soft information. FREQ_FINSTAT is the frequency that the borrower submits its financial statements to the borrower. FINSTAT represents the existence of any financial statements. AUDIT represents that the borrower have its financial statements audited. (3) Borrower Performance: PERFORMANCE_S equals to

***, **, or * means that the coefficient is statistically significant at 1%, 5%, or 10% level.