Do Past Relationship and Experience Help a Bank in Winning a Lead Mandate in the Syndicated Loan Bid?

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Little is known about how borrowers select lead arrangers in a syndicated loan. The purpose of this paper is to examine the significance of the private-linkage and the bank experience in granting a lead mandate. The results based on logistic regression show that the past relationship with the borrower measured as a proportion of total deals with a specific lender increases that bank's likelihood of winning the lead mandate by 34%. Moreover, while being a top 10 lender increases the probability of winning the lead mandate by 21%, specialization in the borrower's industry increases it by even more, at 47%. Furthermore, sub-sample analysis demonstrates that results are mainly driven by the pre-crisis period, implying that borrowers prefer single bidders rather than bidding groups when funding is abundant. An analysis focusing on above median Tier 1 capital and above median total assets further validates these results with the effect being even stronger as these groups represent reasonable candidates for bidding invitations. Finally, alternative measures for behavioral variables indicate that borrowers emphasize lenders' quality over quantity.

1. Introduction

In a traditional sole lender loan, a lender conducts due diligence, negotiates loan terms with the borrower and monitors the loan. The lender must absorb all the credit risk alone, receiving all income while at the same time, it must bear all the losses. Unlike sole lender loans, a syndicated loan involves two or more lenders issuing a loan to a common borrower under the same contract. Thus, a syndicated loan has an advantage of risk-sharing among partners and alleviates loss amount in case of credit defaults (Dennis and Mullineaux 2000). With the emergence of global companies and the demand for large scale loans, the syndicated loan market has grown substantially. The U.S. market alone has multiplied about 6.4 times since 1989 to reach $1.36 trillion in 2013 (Federal Reserve Board 2015). The rapid growth of the market with multi-dimensional principal-agent scenarios has drawn the attention of researchers to explore behaviors of different players and their characteristics.

Many studies have been devoted to finding determinants alleviating information asymmetry among syndicate parties. Borrower's transparency (Ackert et al. 2007), credit rating (Sufi 2007), ownership structure (Lin et al. 2012), bankruptcy status (Gopalan et al. 2011), profitability and repeat lending relationship (Farinha and Santos 2002; Gangopadhyay and Mukhopadhyay 2002; Bharath et al. 2011) signal

borrower's creditworthiness, thus reducing information asymmetry. For lender-lender relationship, Ross (2010) emphasizes the significance of lead bank reputation, Champagne and Kryzanowski (2007) and Cai (2010) explore previous partnering relationships, role-switching, and free-riding incentives. Others have studied various loan terms (Ackert et al. 2007; Bharath et al. 2011) and different business cycles (Shivdasani and Song, 2011).

As noted above, a growing number of studies investigates the syndicated loan structure and highlights the importance of lead arrangers' role. A borrower may select a lead arranger either based on its previous relationship or through a competitive bid that requires high standard qualification. Lead arrangers are in charge of originating, structuring, pricing, arranging, and underwriting the deal. Therefore, they should understand both borrower and other lenders' requirements to clear the market, which requires great knowledge and expertise. Consequently, it is common to have more than one lead arrangers in the deal to share underwriting and syndicating responsibilities. As a reward for a lead mandate lead arrangers obtain privileged access to the borrower's private information, opportunities to build a relationship, develop other non-credit business services, gain expertise and most importantly, earn a lucrative share from the loan payoffs (Panyagometh and Roberts 2010).

Campbell and Weaver (2013) divide the loan syndication process into different phases, namely pre-mandate, post-mandate, and post contract signing phases. The focus of this study is on the pre-mandate phase when the borrower invites a selected number of banks to bid for the syndicated loan lead mandate and subsequently grants the mandate. While the borrower sets up technical requirements for the potential lead arranger, bidders can participate either for a sole-mandate or multi-bank group mandate for lead arrangers. In practice, borrowers decide which option they want. Also, it is common that borrowers would restrict the bid to a sole lead arrangement, as it encourages a competitive environment that increases the borrower's negotiating power. For this study, I restrict the sample to sole-mandate deals only, as the inclusion of deals with multi-bank group mandates would complicate the issue. The multi-bank bidding is a separate game that involves various strategies between and within bank groups as well as with the borrower, making empirical tests for identifying the different practices difficult if not all together infeasible.

In practice, lenders are ranked by a league table which evaluates their capability by various criteria to meet the deal-specific needs. This table distinguishes leading banks from those that play less active roles. Moreover, a league table can be sector specific to identify leading banks in that sector. Accordingly, a league table can be a sound first judgment to select potential lead banks. Therefore, making it to the league table grants banks a competitive edge, access to large competent clients, and a partnership opportunity with other leading banks. However, only a very limited number of lenders possess such resources and capacities Campbell and Weaver

(2013) note that the majority of syndicated loan market players participate as investors only, realizing partial benefits without a lead mandate.

So, what contributes to a lender winning a lead mandate in a potential loan syndicate? Is it the financial strength of a bank that signals its syndicating capabilities when granting a mandate? Or is it the bank' past relationship with the borrower that grants a bank a competitive advantage? Or is the bank's experience or the specialization that matters? Although anecdotal evidence suggests they all matter, there is no quantifiable evidence to support the argument. Against that backdrop, the purpose of the paper is to address this gap in the research by answering these questions with a focus on banking institutions since banks constitute the majority, about 80 percent, of the syndicated loan market share (Federal Reserve Board 2015). I manually match bank Call reports with syndicated loan (Dealscan) data, which facilitates the examination of various bank characteristics and other behavioral variables.

Utilizing Logit regression, I find that financially strong banks are chosen as lead banks in the syndicated loan to commit greater responsibilities. Moreover, behavioral variables such as dominance in the market, previous relationship with the borrower and the expertise in the borrower's industry are both statistically and economically significant determinants of banks' roles in the syndicate after controlling for financial variables. Especially, as the industry experience ratio increases by 1 unit, the odds of winning a lead mandate increases by 47 percent. Moreover, a one standard deviation increase in borrower industry experience increases the odds of becoming a lead arranger by 5 percent. Also, as the past relationship with the borrower increases by one standard deviation, it leads to 7 percent increase in odds for becoming a lead arranger. Furthermore, for a top 10 player odds to become a lead arranger increases by 10 percent with one standard deviation change. Overall, these results support the importance of league table status, industry specialization, and private knowledge.

Moreover, further analysis shows that the results are mainly driven by the pre-crisis period subsample, implying that sole-mandate bids are common practice in good times when funding is abundant. In addition, these results hold true and even stronger for above median Tier 1 capital and above median total assets groups, considered to be solid candidates for lead arranger when borrowers send bidding invitations. More specifically, for capital abundant candidates, it is the industry experience that matters most, as evidenced by a likelihood ratio of 1.97, compared to 1.47 in the baseline regression for all candidates. Similarly, the odds ratio for having a previous relationship with the borrower and dominance in the market as indicated by a top 10 lender dummy increased from 1.34 to 1.56 percent and from 1.21 to 1.31, respectively. Similar, yet weaker results hold for above median total asset group, which indicates Tier 1 capital ratio and total assets to be distinct measures of bank capacity. However, when I use the number of transactions as an alternative measure to the volume of transactions for measuring behavioral variables, the foregoing result

holds for the top 10 bank dummy variable only, indicating that borrowers appear to take quality more seriously than mere quantity.

The paper is organized as follows: Section II describes literature and hypotheses development; Section III describes the data and variables used in this study; Section IV describes methodology; Section V provides results and discussions, and Section VI concludes.

2. Hypotheses development

2.1 Financial strength hypothesis

According to Shared National Credit Program of Federal Reserve System, a large syndicated loan is defined as a loan of over $20 million that is shared by more than three supervised institutions (Federal Reserve Board 2015). Playing a crucial role of a lead arranger in a large scale and complex syndicated loan requires resources and stronger capacity. Altunbaş and Kara (2011) highlight the presence of significant differences between lead and participant banks in terms of their financial strength. More specifically, they observe lead banks to be larger in asset size, possess higher liquidity, profitability measured by ROE, and higher non-interest income while having lower capital ratios. They emphasize that while participant banks lack resources to originate and arrange the deal, they enter into the syndicate to diversify and boost income margin. Chu et al. (2018) find similar evidence in their study of lead and participant financial variables. Based on the above argument, I hypothesize that:

H1: Lead lenders possess stronger financial capacity than other lenders in the syndicate to fulfill multi-functional responsibilities.

2.2 Hypotheses on past behaviors

<u>League player:</u> Lead arrangers must have superior capacity to screen the borrower, structure deals, monitor the borrower, and resolve any disputes. It is particularly true for project finance deals that are considered the most demanding in terms of lead arrangers' duties. While prestigious lead arrangers provide high-quality service to both borrower and other participants, at the same time, they charge lower fees (Gatti et al. 2013). Moreover, dominant players in the market through their reputation can attract other lenders to participate in the syndicate easily (Dennis and Mullineaux 2000). Gopalan et al. (2011) demonstrate the significance of lead bank reputation for attracting other participants even after a borrower bankruptcy.

<u>Specialization:</u> Due to the complex nature of the loan syndication, and idiosyncratic needs of borrowers, it is difficult for lead banks to be generalists. Therefore, the specialization hypothesis assumes that lenders specialize in particular deals to gain a comparative advantage. Francois and Missonier-Piera (2007) support the specialization hypothesis and argue that syndicate partners choose their roles in the syndicate consistent with their expertise in the borrower-specific transactions.

<u>Private knowledge:</u> Campbell and Weaver (2013) highlight the importance of previous relationships and expertise in granting lead arranger mandates. Borrowers

seek loans from the banks they had relationships in the past. Choosing the same lender not only reduces transaction costs (Bharath et al. 2011) but also signals other lenders about a borrower's qualification (Farinha and Santos 2002; Gangopadhyay and Mukhopadhyay 2002). If the borrower approaches a new lender for a loan, the lender may question the potential "lemon quality" of the borrower since the borrower had an option to request the loan from its previous lenders. Lin et al. (2012) argue that the previous relationship with the borrower alleviates information asymmetry and find significant impact on syndicate formation. Furthermore, Champagne and Kryzanowski (2007) emphasize the value of long-lasting relationships.

Therefore, based on the above arguments, I hypothesize the following:

H2: Lender's past behaviors measured by dominance in the market (a proxy for league table player), past borrower industry experience (a proxy for specialization), and the relationship with the borrower (a proxy for private knowledge) are significant determinants of its role in the syndicated loan.

3. Data and variables

Sample construction:

I use Thomson Reuter's Dealscan database for a dependent, and loan related control variables. For bank financial information, I manually match lenders from Dealscan with Bank Call reports using lender names and locations. Next, based on the Dealscan-Compustat link provided by Chava and Roberts (2008), I construct bank behavioral variables. All the analyses are conducted at the bank level and comprised of 47,479 bank-facility-year quarter observations for 13,029 unique facilities over a period of time from the first quarter of 1996 to the third quarter of 2012.

Dependent variable

Dealscan, a global database for syndicated market, classifies lender roles as admin agent, agent, co-agent, arranger, co-arranger, book-runner, collateral agent, custodian, documentation agent, issuing agent, lead arranger, manager, mandated arranger, participant, senior co-arranger, senior lead manager, senior manager, syndications agent and etc. The dependent variable is a binary variable which takes a value of one if a bank is a lead arranger in the syndicated loan and zero otherwise. I define banks as lead arrangers only if they are granted "Lead Arranger Credit" status in the loan syndicate following (Ertan 2016).

Bank behavioral variables

I include three different bank relationship and experience variables of banks following Lin et al. (2012). The previous relationship between a bank and a specific borrower is measured by the total USD deal amount issued to the same borrower within the past five years. The stronger the previous relationship is, the less information asymmetry exists for the banks, which in turn triggers lender commitments and incentive to play lead roles.

Bank experience is measured by both its industry expertise and the dominance

in the syndicated loan market. Particularly, I evaluate the actual dollar amount of deals that the bank made in the borrower industry within the previous five years. The dominance is proxied by a top ten bank dummy which takes a value of one if a bank is one of the top ten lenders in the syndicated loan market in terms of the deal amount and zero otherwise. Also, I create alternative measures for the above behavioral variables using the number of deals, which are highly correlated with the above measures. Moreover, the Logit outcomes in Section 6.2 show similar results too.

Bank financial variables

Bank financial variables demonstrate its business capacity and ability to make greater commitments. Therefore, it is crucial to study their impact on the bank's role in the syndicated loan. Omitting these variables would cause potential endogeneity bias, so I control for various variables. I take lagged values of these variables because both borrowers and syndicate partners evaluate potential lead banks based on their past performance. Also, this mitigates reverse-causality.

I measure the lender's size by its total assets in millions of USD. Big banks have the capacity to issue bigger loans, thus do not necessarily require another bank to form a loan syndicate ceteris paribus. Therefore, lender size shall have a positive impact on its choice of playing a lead arranger role. Moreover, I control for the Tier 1 capital ratio as it indicates funding capacity and ability to absorb greater credit risks. I argue that capital adequate banks are capable of issuing loans without relying on costly outside funding. As a result, the above banks should have a greater propensity to play lead roles, all else being constant.

I control for risk-weighted assets share following Chu et al. (2018). The risk-weighted assets is a proper measure of overall assets exposure weighted by their respective risk levels. It is relevant for not only assessing risky asset amounts but also looks at the composition of the underlying asset portfolio. The higher the portion of risky assets in the total asset portfolio, the bank is more willing to diversify its credit risks. Moreover, I consider the lender deposits scaled by the total bank assets. Higher deposits outstanding indicates resource capacity; thus, signals less incentive to collaborate with others ceteris paribus. Liquidity is a measure for the liquid asset resource to meet short term liabilities, so large amounts of liquid assets imply greater potential to issue sole-lender loans.

To control for bank profitability, I add ROA in the regressions. Higher ROA indicates higher profitability. I argue that high profit banks have more potential to issue loans by itself and make greater commitments. Therefore, it shall have a positive impact on a bank's likelihood of becoming a lead arranger in the syndicate. Finally, loan allowance favors borrowers, thus ceteris paribus, borrowers may prefer higher loan allowance rate banks over low allowance rate banks to award a lead mandate.

Loan variables

I control for loan size as measured by the natural logarithm of loan amount in millions of US dollar. Large loans create bigger risks in case of borrower default, thus lenders will choose to be participants to lower risks ceteris paribus. Moreover, I include loan maturity in the analysis and take the natural logarithm of loan maturity measured in days. Loan maturity is determined by the number of days between facility start and end dates. Long term conveys a higher chance of variability, thus implying higher risk. By the same token, as risk level increases, banks participate rather than lead in order to diversify and alleviate risks.

I control for loan security as well. Because secured loan warrants payback, it reduces loan risk significantly. As a result, banks are not aggressive to reduce risks as compared to non-secured loans, may prefer to retain a larger share of the loan for themselves and choose to play lead arranger roles. Therefore, all else held constant secured loans would have a positive impact on the likelihood of becoming lead players.

In addition, I control for refinancing. Borrowers refinance for the purpose of seeking more favorable terms in general. A new refinanced loan may benefit borrowers in terms of lower costs, longer maturity, fewer covenants, and more relaxed conditions. Therefore, it may increase risk exposure for lenders. As a result, loan refinancing makes banks less likely to bid for lead arranger roles.

Last, I control for loan purpose. According to Dealscan, lenders cooperate in lending for various reasons that include M&A, LBOs, takeover, recapitalization, debt repayment, and working capital. Every purpose implies different risk exposure. Thus, the inclusion of the variable is relevant.

4. Methodology

I use a logistic regression model to study a bank's propensity to be chosen as a lead arranger in the syndicated loan. The dependent variable is a binary variable for the lead bank. I include bank financial and behavioral variables along with loan terms, which are crucial in deciding to whom to grant mandates.

The empirical model is constructed as follow:

$$Lead\ bank_{i,j,t} = \beta_0 + \gamma * Bank\ financial\ variables_{i,j,t-1} + \gamma *$$
$$Bank\ behavioral\ variables_{i,j,t-1} + \delta * Loan\ variables_{i,t} + \vartheta *$$
$$Loan\ purpose\ indicators_{i,t} + \theta * Borrower\ industry\ indicators_{i,t} + \varphi *$$
$$Quarter\ indicators_t + \varepsilon_{i,j,t} \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad (I)$$

Lead, bank financial, and behavioral variables are at loan-bank-year quarter level frequencies, and subscript i indicates loan, j indicates bank and t indicates a year-quarter. Loan terms and loan purposes are defined uniquely for each loan. Also, I include the borrower industry and time-fixed effects.

Lead bank $_{i,j,t}$ is a dummy variable which takes a value of one if bank j is chosen as a lead arranger in the syndicated loan i issued at t year-quarter and zero otherwise. Bank financial variables measure financial capacity, including total assets, Tier 1

capital ratio, liquidity, profitability, risk-weighted assets, deposits, and loan allowance rates. Bank behavioral variables include experience in the borrower industry, past lending relationship with the borrower and the dominance in the syndicated loan market. Bank's both financial and behavioral variables are lagged under the assumption that a lead mandate is granted based on the banks' past performances. Loan variables include different loan terms such as loan size, maturity, spread, collateral, and refinancing condition for a loan *i* issued at time *t*.

Empirical tests for unobservable bidders for the lead mandate brings a challenge to the analysis. Because of the confidentiality of the borrower and competitive strategies of the banks, no public information is available for sole mandate bidders. For the purpose of identifying the bid to be sole-mandate, I restrict the sample to sole lead arranger deals regardless of the lender's banking status. In the case of club deals or multi-bank group bids, the book runner could be non-bank institutions. Therefore, having only sole-lead syndicate loans shall exclude multi-bank group bids, which is not the focus of this study.

With unobservable lead mandate bidders, conducting the tests for the complete sample might introduce bias into the parameter estimates given that in such cases, all banks are treated as potential bidders for the syndicate lead mandate. However, in practice, the borrower sends invitations to bid to only a select number of banks that potentially could meet its requirements and needs (Campbell and Weaver 2013). Altunbaş and Kara (2011) find significant differences in financial strength for lead arrangers consistent with their increased responsibilities in the loan syndicate. Therefore, I follow a subsampling approach to address the unobservability problem. I divide the sample into two groups based on total asset size and Tier 1 capital ratio as these two variables signal the financial capacity of banks to fulfill lead arrangers' greater responsibilities. I expect that borrowers send invitations to bid to more highly qualified groups possessing lower commitment risks. Therefore, more emphasis shall be given to above median subsample groups.

5. Results and discussions

Descriptive statistics and Pearson's correlation is shown in Table I. For a sample of 22,826 bank-loan-year quarter observations from the year 1996 to 1992, 15 percent of the banks are granted a lead mandate. Average bank size in the sample is 282.12 billion USD in assets with an average Tier 1 capital ratio of 8.87 percent, well above regulatory capital requirements. Risk-weighted assets, deposits, and loan allowance rates are measured as percentages of bank total assets. Lender industry experience as a ratio of borrower's industry total volume of deals averages at 11 percent ranging from 4 to 14 percent at the 25th and 75th percentiles, implying quite a diversified market structure. Moreover, on average, 25 percent of all loans of the borrower in the past five years are funded by the same bank. Regarding dominant bank participation, 44 percent of the time, the top 10 market players are involved in the syndicated loan. The average loan size is 353 million USD, with a maturity of 48 months and spread

of 173 bps over the floating rate. Finally, banks issue loans to relatively secure borrowers with 63 percent of total loans being secured. Most of the variables show significant correlations within an acceptable range.

Table I. Descriptive Statistics and Pearson's Correlations

Panel A: Descriptive Statistics

	Mean	Sd	Median	p25	p75
Bank variables					
Lead	0.15	0.35	0.00	0.00	0.00
Lender size	282.12	428.84	77.76	37.39	268.95
Lender tier 1 capital ratio	8.87	3.20	8.21	7.56	9.30
Lender risk-weighted asset	83.67	15.39	82.44	73.26	91.61
Lender loan allowance rate	0.97	0.48	0.89	0.67	1.13
Lender ROA	0.70	0.57	0.63	0.34	1.00
Lender liquidity	21.56	10.17	20.07	15.13	25.64
Lender industry experience (ratio to total lenders)	0.11	0.12	0.08	0.04	0.14
Past relationship with the borrower (ratio to total lenders)	0.25	0.23	0.17	0.11	0.26
Top 10 lender (dummy indicator)	0.44	0.50	0.00	0.00	1.00
Loan variables					
Loan maturity	48.21	21.15	59.80	36.50	60.87
Loan size	353.37	638.91	200.00	100.00	400.00
Loan spread	1.73	1.18	1.50	0.88	2.44
Loan security	0.63	0.48	1.00	0.00	1.00
N	22,826	22,826	22,826	22,826	22,826

Table I : Panel B: Pearson's correlation

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Lender size [1]	1											
Lender tier 1 capital ratio [2]	**-0.24**	1										
Lender risk-weighted asset [3]	**-0.22**	**-0.27**	1									
Lender loan allowance rate [4]	**-0.10**	**0.04**	**0.19**	1								
Lender ROA [5]	**-0.03**	**-0.12**	**0.18**	**0.03**	1							
Lender liquidity [6]	**-0.15**	**0.05**	**-0.33**	**-0.16**	0.01	1						
Lender industry experience (ratio to total lenders) [7]	**0.05**	**-0.05**	-0.01	0.01	**0.02**	**-0.03**	1					
Past relationship with the borrower (ratio to total lenders) [8]	**-0.05**	**-0.03**	0	**0.05**	0	**-0.02**	**0.11**	1				
Loan maturity [9]	**0.02**	0.01	**-0.04**	**-0.07**	0.01	**-0.06**	**-0.03**	**-0.02**	1			
Loan size [10]	**0.05**	0	**0.02**	**-0.07**	0	0	**0.04**	**-0.04**	0	1		
Loan spread [11]	**-0.02**	**0.1**	**-0.03**	**0.17**	**-0.05**	**-0.02**	**-0.04**	0.02	0.04	**-0.42**	1	
Loan security [12]	**-0.03**	**0.05**	**-0.02**	**0.08**	-0.01	**-0.07**	**-0.05**	0.02	**0.25**	**-0.34**	**0.55**	1

Notes: The sample is collected over the first quarter of 1996 to the third quarter of 2012. The sample involves 22,826 banks involving in 7,185 unique syndicated loan facilities with at least two lenders and sole-lead arrangers. Panel A reports summary statistics of the data, and Panel B reports Pearson's correlations among variables excluding dummy variables because the correlation matrix is not appropriate for the explanation of association with dummies. The bold figures represent correlations that are significant at the 5 percent level. The variable descriptions are in Appendix A.

Table II presents the main results. The results show that all the financial qualifications are crucial factors for a bank playing a lead arranger's role in the loan syndicate, thus supporting hypothesis I. Large size in terms of total assets increases a bank's likelihood of becoming a lead arranger in the syndicate as it could signal its capacity to fulfill multiple-tasks. The coefficient for lender size is highly significant at the 1% level with an odds ratio of 1.86. Moreover, as the bank's Tier 1 capital ratio increases by 1 percent, the odds of serving as lead arranger increases by 5 percent, significant at 1% level. This result is consistent with previous evidence regarding bank size and capitalization (Sufi 2007).

Table II. Main Results

Variables	Baseline	Relationship & experience		
		Coefficient	Odds Ratio	e^bStdX
Lender size	0.66***	0.62***	1.86***	2.85
Lender tier 1 capital ratio	0.05***	0.05***	1.05***	1.18
Lender risk-weighted asset	-0.02***	-0.02***	0.98***	0.75
Lender loan allowance rate	-0.23***	-0.23***	0.79***	0.89
Lender ROA	-0.22***	-0.21***	0.81***	0.89
Lender liquidity	-0.02***	-0.02***	0.98***	0.84
Lender industry experience (ratio to total lenders)		0.38**	1.47**	1.05
Past relationship with the borrower (ratio to total lenders)		0.30***	1.34***	1.07
Top 10 lender (dummy indicator)		0.19***	1.21***	1.10
Loan maturity	-0.19***	-0.19***	0.83***	0.89
Loan size	-0.46***	-0.46***	0.63***	0.59
Loan spread	-0.01	-0.01	0.99	0.99
Loan security	0.14***	0.14***	1.15***	1.07
Observations	22,810		22,810	
Time FE	YES		YES	
Deal purpose dummies	YES		YES	
Pseudo R2	0.196		0.198	

Notes: This table shows the baseline results for the Logit model. The dependent variable is a lead bank dummy which takes a value of 1 for lead banks and 0 otherwise. Key independent variables are past lender experience, previous relationship with the borrower and Top 10 dummy. Standard errors are robust and clustered at the loan facility. The ***, **, and * represent significance at the 1 percent, 5 percent, and 10 percent levels respectively.

However, the risk-weighted assets share adversely impacts bank becoming a lead arranger. The result potentially implies that there is a risk-lowering incentive for already high-risk portfolio banks. In addition to that, I find a significant negative impact with respect to profitability (ROA), loan allowance rate, and liquidity. Increased commitments of lead banks, particularly for fully underwritten deals, may prevent bank management from aggressively bidding for lead arranger mandates since it may adversely impact its future performance. I argue that banks bid for the

lead mandate if there is sufficient reward for their increased commitments. Therefore, while for longer life and greater sized loans banks choose not to aggressively bid for a lead mandate, as the loan price increases or the loan becomes secured, they tend to bid for the lead arranger's mandate. The results hold for loan maturity, size, and price with the expected sign at a 1% level of significance.

Figure 1
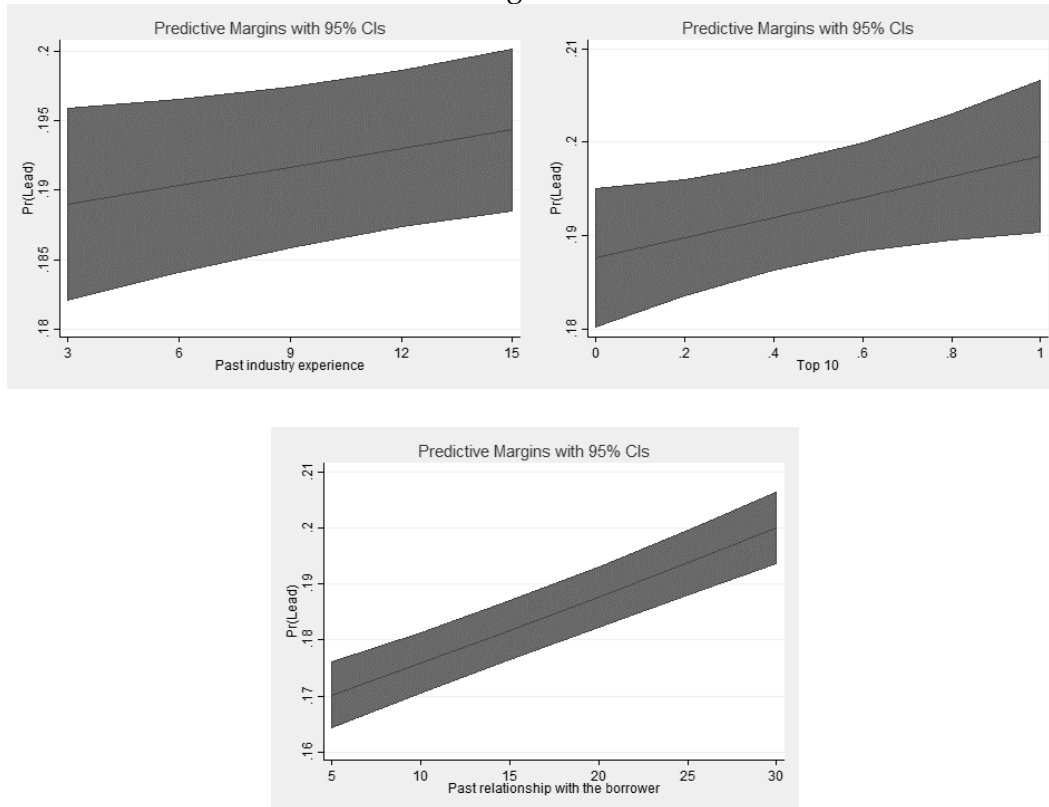
Previous experience in the borrower's industry as measured by the ratio of total volume of deals in the past 5 years to all other lenders' aggregate volume of deals is shown to be a positive determinant of the likelihood of becoming a lead arranger in the syndicate at a 10% level of significance. As the experience ratio increases by one unit, the odds of winning a lead mandate increases by 47 percent. The result is economically significant too. A one standard deviation increase in borrower industry experience increases the odds of becoming a lead arranger by 5 percent. Also, the past relationship is crucial in winning a lead mandate. Most importantly, as past relationship with the borrower increases by one standard deviation, it leads to a 7 percent increase in the probability of becoming a lead arranger.

Furthermore, the bank's dominance in the syndicated market proxied by the top 10 dummy is a significant positive determinant of the likelihood in receiving a lead mandate in the prospective loan syndicate. The coefficient of 0.19 is not only statistically significant at the 5 percent level, but also the most significant behavioral factor in terms of its economic significance. More specifically, for a top 10 player, the odds of becoming a lead arranger increases by 10 percent with a one standard

deviation change. Overall, these results support agency hypotheses that the past relationship and the expertise alleviate information asymmetry; thus, the borrower grants a lead mandate to a bank whom it knows better to reduce the lender's commitment risks. Therefore, the results support hypotheses II.

Figure 1 demonstrates a positive relationship between past behavioral variables and the propensity to be chosen as a lead arranger in the syndicated loan. As lender industry experience, borrower relationship and the overall market share increase, it is more likely to be selected as lead banks in the syndicate.

<u>Results are driven mainly due to the pre-crisis period</u>

Unlike multi-bank group bids, sole-lead mandate bids are attractive to borrowers in terms of loan pricing as they encourage competitive bidding and prevent collusive behaviors. However, when resources are scarce, and credit flow is limited, sole-lead deals face greater commitment risks. Therefore, including different business cycles could introduce bias to the parameter estimates. Because the initial sample includes the recent 2008 sub-prime mortgage crisis, I further split the sample into two groups. The period before 2009 is considered the pre-crisis period, and the period after that is the post-crisis period. Indeed 92 percent of all sole-lead deals are signed during economic rest. As shown in Table III, results are mainly driven by the pre-crisis period. Parameter estimates for behavioral variables become stronger both in terms of statistical and economic significances. The odds ratio for lender industry experience increases from 1.47 to 1.68 from 5 percent to 1 percent statistically. Similarly, the odds ratio for past borrower relationship increases from 1.34 to 1.41, while the top 10 lender dummy remains significant with a slight decrease economically. Conversely, results from the post-crisis sample lose both statistical and economic significances. Overall, these results indicate that the past behaviors of banks matter in winning lead mandates in general, however with respect to sole-lead mandates, this is true during economic up cycles.

6. Robustness tests

6.1. Dealing with selection bias

So far, I include all observations in the analysis, treating non-lead banks as if they had bid for the lead mandate, while in reality, they may not. Normally borrowers send invitations for bidding only to a select number of candidates whom they believe could fulfill the lead arranger's responsibilities successfully. Sending invitations to every lender would not only be costly but also endanger the borrower's confidentiality.

Therefore, the inclusion of all lenders in the sample may underestimate the impact of behavioral variables. Because lead mandate bidders are unobservable, it is not straightforward to validate the results. As such, I follow a more practical but still reasonable subsampling approach. I argue that because the lead arranger's role requires greater commitments, the borrower might shortlist candidates with greater capacity and resources. Using the bank's total assets and Tier 1 capital ratios as indicators of capacity and resources, I further split the data on the basis of above and below median values. Based on the argument that only greater capacity and

resourced banks receive bidding invitations, more emphasis shall be given to results from the above median samples.

Table III. Pre and post crisis periods

Variables	All sample	Pre-crisis		Post-crisis	
	OR	OR	e^bStdX	OR	e^bStdX
Lender size	1.86***	1.98***	3.10	1.81***	2.87
Lender tier 1 capital ratio	1.05***	1.07***	1.22	0.97	0.91
Lender risk-weighted asset	0.98***	0.98***	0.68	0.98**	0.74
Lender loan allowance rate	0.79***	1.32***	1.11	0.90	0.91
Lender ROA	0.81***	0.76***	0.86	0.90	0.93
Lender liquidity	0.98***	0.99***	0.87	1.00	0.98
Lender industry experience (ratio to total lenders)	1.47**	1.68***	1.06	0.11*	0.80
Past relationship with the borrower (ratio to total lenders)	1.34***	1.41***	1.08	0.79	0.95
Top 10 lender (dummy indicator)	1.21***	1.18***	1.09	1.23	1.11
Loan maturity	0.83***	0.87***	0.92	0.84	0.91
Loan size	0.63***	0.64***	0.60	0.63***	0.58
Loan spread	0.99	1.03	1.03	0.99	0.99
Loan security	1.15***	1.13**	1.06	1.16	1.07
Observations	22,810	21,061		1,692	
Time FE	YES	YES		YES	
Deal purpose dummies	YES	YES		YES	
Pseudo R2	0.198	0.211		0.204	

Notes: The purpose of this table is to show the results are mainly driven from the pre-crisis period. The dependent variable is a lead bank dummy which takes a value of 1 for lead banks and 0 otherwise. Key independent variables are past lender experience, previous relationship with the borrower and Top 10 dummy. Standard errors are robust and clustered at the loan facility. OR abbreviates Odds Ratios from the regression and e^bStdX represents economic significances of parameter estimates to one standard deviation change. The ***, **, and * represent significance at the 1 percent, 5 percent, and 10 percent levels respectively.

Table IV reports results from different sub-samples. For comparison purposes, in the first column, I report results from the pre-crisis subsample. Results from the above median and below median values follow, which are divided further into two columns, the odds ratios, and values for economic significances. Both the above median Tier 1 capital and above median total asset subsamples provide stronger results in terms of magnitude while the below median value subsamples are insignificant. For capital abundant candidates, industry experience matters the most with an odds ratio of 1.97, meaning that improving experience in the borrower's industry by 100 percent, increases the odds of winning lead mandate by 97 percent. Similarly, increasing the previous relationship with the borrower by one unit increases the odds of becoming the lead arranger by 56 percent (as opposed to 34 percent for the whole sample).

Table IV. Subsample analyses

Panel A

Variables	Pre-crisis	Above median capital		Below median capital	
	OR	OR	e^bStdX	OR	e^bStdX
Lender industry experience (ratio to total lenders)	1.47**	1.97**	1.08	1.60*	1.06
Past relationship with the borrower (ratio to total lenders)	1.34***	1.56***	1.11	1.29*	1.06
Top 10 lender dummy	1.21***	1.31***	1.13	0.98	0.99
Financial variables	YES	YES		YES	
Loan terms	YES	YES		YES	
Observations	22,810	9,729		11,318	
Time FE	YES	YES		YES	
Deal purpose dummies	YES	YES		YES	
Pseudo R2	0.198	0.231		0.216	

Panel B

Variables	Pre-crisis	Above median TA		Below median TA	
Lender industry experience (ratio to total lenders)	1.47**	1.64*	1.05	1.83*	1.08
Past relationship with the borrower (ratio to total lenders)	1.34***	1.48***	1.09	1.23	1.05
Top 10 lender dummy	1.21***	1.17***	1.08	1.22	1.09
Financial variables	YES	YES		YES	
Loan terms	YES	YES		YES	
Observations	22,810	10,201		10,623	
Time FE	YES	YES		YES	
Deal purpose dummies	YES	YES		YES	
Pseudo R2	0.198	0.149		0.168	

Notes: The purpose of this table is to highlight results from Above median subsamples. Panel A reports results from subsamples by Tier 1 capital ratio, and Panel B reports results from subsamples by Total Asset respectively. The dependent variable is a lead bank dummy which takes a value of 1 for lead banks and 0 otherwise. Key independent variables are past lender experience, previous relationship with the borrower and Top 10 dummy. Standard errors are robust and clustered at the loan facility. OR abbreviates Odds Ratios from the regression and e^bStdX represents economic significances of parameter estimates to one standard deviation change. The ***, **, and * represent significance at the 1 percent, 5 percent, and 10 percent levels respectively.

Table V. Behavioral variables as measured by the number of deals

Variables	Baseline	Relationship & experience		
		Coefficient	Odds Ratio	e^bStdX
Lender size	0.66***	0.60***	1.83***	2.76
Lender tier 1 capital ratio	0.05***	0.05***	1.05***	1.16
Lender risk-weighted asset	-0.02***	-0.02***	0.98***	0.72
Lender loan allowance rate	-0.23***	-0.22***	0.80***	0.90
Lender ROA	-0.22***	-0.21***	0.81***	0.89
Lender liquidity	-0.02***	-0.02***	0.98***	0.83
Lender industry experience (ratio to total lenders)		-0.02	0.98	1.00
Past relationship with the borrower (ratio to total lenders)		-0.02	0.98	1.00
Top 10 lender (dummy)		0.29***	1.34***	1.16
Loan maturity	-0.19***	-0.19***	0.82***	0.88
Loan size	-0.46***	-0.46***	0.63***	0.58
Loan spread	-0.01	-0.01	0.99	0.99
Loan security	0.14***	0.14***	1.15***	1.07
Observations	22,810		22,810	
Time FE	YES		YES	
Deal purpose dummies	YES		YES	
Pseudo R2	0.196		0.198	

Notes: This table shows the baseline results for the Logit model. The dependent variable is a lead bank dummy which takes a value of 1 for lead banks and 0 otherwise. Key independent variables are past lender experience, previous relationship with the borrower and Top 10 dummy. Standard errors are robust and clustered at the loan facility. The ***, **, and * represent significance at the 1 percent, 5 percent, and 10 percent levels respectively.

Dominance in the market indicated by the top 10 lender dummy results in an improvement of 10 percent, from 1.21 to 1.31 for capital abundant candidates. As shown, parallel improvements are recognized in terms of economic significance for all three variables.

Regarding the above median total assets group, the magnitude of industry experience and past relationship with the borrower improve, as with the Tier 1 capital group. The change in magnitude is slightly weaker, perhaps because the Tier 1 capital ratio and total assets indicators measure different aspects of bank capacity. The below median groups show weak significance for industry experience and past relationship with the borrower. Overall, results imply that past behaviors as measured by industry experience, prior relationship with the borrower, and being a top 10 player increases a bank's likelihood of winning a lead mandate in sole-lead bids. Moreover, smaller banks, as measured by their below median total assets and Tier 1 capital, could win lead mandate either through specialization or building a relationship with the borrower.

6.2. Alternative measures for behavioral variables

In the baseline results, behavioral variables are measured in volume of syndicated loan deals. However, bank industry experience, past relationship with the borrower and dominance in the syndicated loan market can be measured in terms of the number of transactions as well. Table V reports the results for alternative measures of behavioral variables. While the top 10 lender dummy in terms of the number of deals shows consistent results, industry experience, and past relationship with the borrower both lose significances and are characterized by opposite signs. For borrowers that emphasize commitment risks most significantly, past achievements measured in terms of the amount of deals appear to be more important than the number. Therefore, it seems that in the syndicated loan, market quality matters most, rather than quantity.

7. Conclusion

I explore different factors for banks in winning a lead mandate. Obtaining a lead arranger mandate in a syndication benefits lenders in terms of increasing market share, gaining expertise, expanding profitability from both interest and non-traditional fees, and developing new business with the borrower. However, due to multifaceted responsibilities of lead banks, only few qualify for lead arranger mandates. Moreover, some banks prefer to play passive roles in the syndicated loan market to lower their risk exposures. Therefore, it is crucial to study different predictors for a bank to be chosen as lead bank in the syndicate.

The findings suggest that financially strong and healthy banks are more likely to become lead banks in the syndicated loan due to the necessity to commit to a wide range of responsibilities. In addition, I find past behaviors such as dominance in the syndicated loan market, previous relationship with the borrower and expertise in the borrower's industry increases a bank's likelihood of winning a lead mandate beyond bank's financial strength. Moreover, further analysis shows that results are mainly driven by the pre-crisis period subsample, implying sole-mandate bids are common practice in good times when funding is abundant. Results hold and are even stronger for above median Tier 1 capital and total asset groups. Finally, it appears that borrowers take quality more seriously than quantity when I use the number of transactions as alternative measures to the volume of transactions.

Appendix

Variable name	Variable definition
Bank variables	
Lender size	The natural logarithm of lead bank assets in USD billions: ln(bhck2170/1,000,000) or ln(rcfd2170/1,000,000)
Lender Tier 1 capital ratio	Bank Tier-I capital ratio: bhck8274/bhcka223 or rcfd8274/rcfda223
Lender risk-weighted assets	Bank risk-weighted assets/total assets ratio: bhcka223/bhck2170 or rcfda223/rcfd2170
Lender deposits	Bank deposits to total assets ratio: (bhdm6631+ bhdm6636+ bhfn6631+ bhfn6636)/bhck2170 or rcfd2200/rcfd2170
Lender loan allowance rate	Bank loan allowance/total assets ratio: bhck3123/bhck2170 or rcfd3123/rcfd2170
Lender ROA	Bank net income/total assets ratio: bhck4340/bhck2170 or riad4340/rcfd2170
Lender liquidity	Bank (cash+available for sale sequrities)/total assets ratio: (bhck0010+bhck1773)/bhck2170 or (rcfd0010+rcfd1773)/rcfd2170
Lender industry experience in volume of deals (number of transactions)	The total volume of deals in billions of USD (number of facilities) issued by the bank in a three-digit borrower SIC code industry in the past 5 years divided by the total volume of deals in billions of USD in that 3-digit borrower SIC code industry issued by all banks in the Dealscan
Past relationship with the borrower in volume of deals (number of transactions)	The total volume of deals in billions of USD (number of facilities) issued by the bank to the borrower in the past 5 years divided by the total volume of deals in billions of USD to the same borrower issued by all banks in the Dealscan
Top 10 lender in volume of deals (number of transactions)	A binary variable that takes a value of 1 if the bank ranks in the top ten banks in terms of total volume of deals in billions of USD (number of facilities) it has issued in the past 5 years and 0 otherwise
Loan characteristics	
Loan maturity	The natural logarithm of loan maturity measured in days. Maturity is calculated as the difference between the facility end and start dates
Loan size	The natural logarithm of loan amount measured in millions of USD
Loan security	A binary variable that takes a value of 1 if the loan is secured, 0 otherwise
Loan purpose dummies	Loan purpose dummy is coded as follows: 1=Corporate purpose, 2= Working capital, 3=Takeover, 4=Debt repayment, 5=acquisition, 6=backup and 7=LBO, 8=Recapitalization and 9=others
Loan refinancing	Dummy equal to 1 if the loan is refinanced, 0 otherwise

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