Foreign Lenders' Adoption of Performance Pricing Provisions in Syndicated Loans

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Abstract

We examine foreign lenders' use of performance pricing provisions (PPPs) in syndicated loan contracts. First, we find that foreign lenders, as a result of both higher information asymmetry and greater renegotiation costs than their domestic counterparts, adopt PPPs instead of tight covenants in their contracts. Second, foreign lenders have a greater preference for PPPs based on credit ratings as opposed to those based on accounting ratios than their domestic counterparts. This is consistent with informationally disadvantaged foreign lenders valuing rating-based PPPs' signaling role, with the role of accounting-based PPPs addressing the hold-up problem being less relevant to them. In addition, the above effects mainly exist when foreign lenders serve as participants rather than lead arrangers in the syndicate. Overall, our findings establish the important role played by rating-based PPPs in addressing foreign participant lenders' information asymmetry and thereby promoting cross-border lending.

Keywords: foreign lending; syndicated loan; performance pricing provision; credit rating

JEL classification codes: G21, G32, G15, F34, M41

1. Introduction

This study examines the use of performance pricing provisions (PPPs) in syndicated loans by foreign creditors to address information asymmetry. As a result of globalization and the financial crisis of 2007/08, cross-border lending is playing an increasingly important role in the debt market. For instance, according to the Federal Reserve, lending by foreign banks accounted for over a quarter of the value of loans issued in the United States in 2014.[1] Foreign lending benefits the domestic economy by strengthening the degree of bank competition, increasing the availability of credit, and reducing the cost of capital (Claessens, Demirgüç-Kunt, & Huizinga, 2001; Levine, 2005). Nevertheless, despite the contribution of cross-border lending to the capital market, foreign banks also have significant disadvantages relative to their domestic counterparts. In particular, they face higher information and monitoring costs because of various barriers such as geographical distance, the lack of familiarity with the local regulatory and business environment, and limitations in banking relations with local firms (Buch, 2003; Haselmann & Wachtel, 2011; Mian, 2003, 2006; Petersen & Rajan, 2002; Vu, Do, & Skully, 2015). Therefore, whether and how the debt contracting practices of foreign and domestic lenders differ deserve to be examined, especially given the rising importance of cross-border lending and the international capital market.

Under the theoretical framework of Garleanu and Zwiebel (2009), lenders with higher information asymmetry would require tighter financial covenants to protect themselves against potential opportunistic behavior by the borrower, since financial covenants facilitate the state-contingent transfer of control rights from borrowers to lenders when the borrower's performance deteriorates. However, the extent of the efficiency gain through tighter covenants is constrained by the costs of renegotiation. Therefore, we expect foreign lenders, in the face

[1] Data retrieved from the Federal Reserve Bank of St. Louis at https://research.stlouisfed.org/fred2/series/EFAXFBNQ/.

of both higher information asymmetry and greater renegotiation costs, to resort to PPPs instead of tighter covenants. PPPs protect lenders in a similar manner to financial covenants by adjusting the interest rate in accordance with changes in the borrower's performance (usually measured by accounting ratios or credit ratings). However, they do not raise renegotiation costs since the adjustment to the interest rate is automatic and the pricing grid is pre-specified (Asquith, Beatty, & Weber, 2005).

We further investigate foreign lenders' choice between PPPs based on credit ratings and those based on accounting ratios. These two types of PPPs are likely to serve different purposes. While rating-based PPPs signal the borrower's future performance, accounting-based PPPs mitigate the hold-up concern (Adam & Streitz, 2016; Manso, Strulovici, & Tchistyi, 2010). Between these two mechanisms, signaling should be more relevant to informationally disadvantaged foreign lenders than the hold-up concern. On the one hand, foreign lenders are less likely to gain an information monopoly over the borrower. On the other hand, they are less capable of predicting the borrower's future performance and, therefore, would benefit from some signaling mechanisms in the contract. Therefore, we expect foreign lenders to be more likely to choose credit rating- over accounting ratio-based PPPs than their domestic counterparts.

There are two types of lenders in a syndicated loan: lead arrangers and participant lenders. Lead arrangers are obliged to collect information and assess the creditworthiness of borrowers on behalf of the syndicate group (Ball, Bushman, & Vasvari, 2008; Esty, 2001; Lin, Ma, Malatesta, & Xuan, 2012; Sufi, 2007). This screening process provides lead arrangers with access to the private information of borrowers, and in the case of foreign lenders, this process reduces their information disadvantage relative to their domestic counterparts. By contrast, participant lenders bear no due diligence obligations and do not communicate directly with the corporate borrower (Ivashina, 2009; Panyagometh & Roberts, 2010). Therefore, if it is indeed

the information disadvantage that drives foreign lenders to require credit rating-based PPPs, this effect should be more pronounced when foreign lenders play the participant rather than the lead role.

Using a sample of syndicated loans issued to U.S. public firms by both U.S. and non-U.S. creditors,[2,3] we find results consistent with the above predictions. First, we show that the likelihood of including PPPs in a loan increases with a higher percentage of foreign lenders, with the tightness of covenants unaffected. The positive relation between the foreign lender percentage and the likelihood of PPP adoption even holds when we control for deal fixed effects and is more pronounced with higher renegotiation costs. Second, using a multinomial logit model, we find that the likelihood of adopting rating-based PPPs increases with a higher foreign lender percentage, with the use of accounting-based PPPs unaffected. When we constrain the sample to loans with PPPs, we further find a negative relation between the percentage of foreign lenders and likelihood of using accounting ratios as opposed to credit ratings as the performance measure in PPPs. Third, we find that foreign lenders' greater demand for PPPs, especially rating-based PPPs, mainly exists when they play the participant rather than the lead role, and this finding is driven by variations in roles rather than bank characteristics. In addition, we provide evidence on the underlying mechanism of foreign participants' greater reliance on rating- as opposed to accounting-based PPPs than their

[2] Two features of the syndicated loan market render it a suitable setting for examining the debt contracting practice of foreign lenders. First, foreign banks are highly active in the syndicated loan market (Clarke, Cull, Peria, & Sanchez, 2003; Haselmann & Wachtel, 2011). Second, unlike the public debt market in which lenders are diverse and anonymous, the lenders of syndicated loans can be identified and are observable.

[3] We confine our sample to U.S. borrowers because PPPs are only widely used or disclosed by U.S. borrowers. Approximately 90% of the loans recorded in the "Performance Pricing" Table of DealScan are issued to U.S. borrowers. In addition, by having all borrowers coming from the same country, we minimize the impact of the institutional environment, credit infrastructure, currency issues, and other country-specific factors on our results.

domestic counterparts. The cross-sectional tests results show that foreign participants' choice is driven by lacking information about the borrower rather than a heightened concern about the moral hazard issue against lead arrangers.

This study offers the following contributions. First, consistent with the theoretical model of Garleanu and Zwiebel (2009), prior research (e.g., Hollander & Verriest, 2016) has found persuasive evidence that lenders charge more intensive covenants to protect themselves from greater information asymmetry. However, Garleanu and Zwiebel (2009) also raise the issue of renegotiation costs caused by covenant violations. How to balance the costs of ex-ante information asymmetry and ex-post renegotiation remains poorly understood in the literature. Focusing on a special group of lenders, namely foreign creditors, who are subject to both high information asymmetry and renegotiation costs, we provide evidence on the important role PPPs play in mitigating information frictions in loan contracting under the constraint of high renegotiation costs. Second, our study sheds light on the design of PPPs, particularly the choice of performance measure. While existing studies (Ball et al., 2008; Bannier & Wiemann, 2014; Costello & Wittenberg-Moerman, 2011; Hu & Mao, 2017) largely focus on the borrower's characteristics as determinants in the choice between ratios and ratings in the PPP, we provide evidence of a supply-side effect. Our findings support the notion of Adam and Streitz (2016) that accounting- and credit rating-based PPPs serve distinct purposes. While rating-based PPPs facilitate signaling, accounting-based PPPs address hold-up problems. Third, we add to the literature on foreign lending (e.g., Beck, Ioannidou, & Schäfer, 2017; Brown, 2016; Vu et al., 2015) by providing further insights into foreign lenders' unique contracting practices compared with their domestic counterparts. In addition, prior findings on foreign lending are largely limited to emerging markets (e.g., Beck et al., 2017; Mian, 2003, 2006; Pennathur & Vishwasrao, 2014). Our evidence shows that even in a more developed market, foreign banks still suffer from information asymmetry. Finally, to the extent that foreign lenders rely on credit

ratings over accounting ratios to appraise the borrower's performance, our evidence implies that credit rating agencies play an important role in facilitating cross-border lending and strengthening foreign investors' confidence. As such, institutional reforms such as the Dodd–Frank Act that seek to strengthen the reliability of credit rating agencies could generate the positive externality of promoting the international capital market. An interesting and related avenue for further research would be to examine whether institutional or regulatory reforms pertaining to financial information intermediaries such as credit rating agencies and sell-side analysts can increase cross-border lending.

The remainder of this paper is organized as follows. Section 2 presents our testable hypotheses. Section 3 describes our research design and sample selection. Section 4 presents the empirical results for the hypothesis tests, additional analyses, and robustness tests. Section 5 concludes.

2. Hypothesis development

Garleanu and Zwiebel (2009) model debt contracting under information asymmetry. They suggest that with higher information asymmetry between the lender and borrower, it is more difficult for less informed lenders to predict future potential transfers of wealth by borrowers. One resolution of potential transfers is to prohibit such activities in the contract. However, it is impossible for lenders to predict and specify all future events, especially under information asymmetry, rendering debt contracts incomplete in dealing with agency issues.[4] In such circumstances, lenders could set tight covenants to protect themselves instead of declining to offer the credit or charging high interest rates, as tight covenants facilitate the timely transfer

[4] Other studies examining the incomplete nature of financial contracts include Aghion and Bolton (1992), Berglöf and Von Thadden (1994), Bolton and Scharfstein (1990), Dewatripont and Tirole (1994), Hart and Moore (1988, 1994, 1998) and Zender (1991).

of control rights from the borrower to creditor when the transfer of wealth likely has happened. Following this reasoning, foreign lenders may demand tighter covenants in debt contracts than their domestic counterparts since they are subject to higher information asymmetry. Nevertheless, tighter covenants give rise to more frequent violations, which require renegotiations. Garleanu and Zwiebel (2009) also posit that the tightness of covenants is restricted by renegotiation costs. Since foreign lenders are a unique group of investors that incur both greater information asymmetry and higher renegotiation costs (Esty, 2004; Mian, 2006), tight covenants may not be efficient in addressing their agency concerns. Therefore, we expect foreign lenders to adopt PPPs as an alternative tool that serves a similar role as covenants but reduces renegotiation costs. PPPs mitigate agency problems by automatically adjusting lenders' rate of return in accordance with borrowers' economic conditions; in the meantime, they minimize renegotiation costs by pre-specifying the outcomes of breaking performance benchmarks ex ante (Asquith et al., 2005). Based on this argument, we specify the following testable hypothesis:

> *H1: With a higher percentage of foreign lenders in the syndicated loan lender group, the propensity to include PPPs in the loan contract increases, while the tightness of financial covenants is unaffected.*[5]

We also investigate foreign lenders' choice between accounting ratios and credit ratings as the performance measure in PPPs. Adam and Streitz (2016) show that rating-based and accounting-based PPPs are used for different purposes. On the one hand, the rating-based

[5] This hypothesis is stated in the alternative form. The corresponding null hypothesis is that the percentage of foreign lenders in the syndicated loan lender group does not affect the propensity to include PPPs in the loan contract.

performance measure facilitates the PPP's signaling role. Manso et al. (2010) propose that only high-growth firms would accept PPPs in their debt contracts, whereas low-growth firms would insist on fixed interest rates because PPPs expose them to a risk of paying higher interest expenses if their performance deteriorates during the course of the loan. Rating-based PPPs should better serve the signaling role than accounting-based ones because the credit ratings issued by independent professional rating agencies are more reliable and relatively free of manipulation than accounting numbers. Adam and Streitz (2016) find that firms adopting rating-based PPPs are more likely to improve performance up to two years after the loan issuance relative to those adopting fixed interest rates. However, this result does not hold for accounting-based PPPs.

On the other hand, accounting-based PPPs can address hold-up problems, which arise when there is information asymmetry between relationship lenders and outside lenders, making it difficult for the borrower to switch banks (Rajan, 1992; Sharpe, 1990). Relationship banks may extract rents from this information advantage and charge higher interest rates. Schmidt (2006) argues that the use of covenants exacerbates the hold-up problem by granting existing lenders significant bargaining power after covenant violations. Adam and Streitz (2016) suggest that using PPPs to replace covenants could mitigate the hold-up problem, since the extent to which the borrower is punished (rewarded) when its performance falls below (rises above) the performance threshold is pre-specified and therefore the lender's bargaining power is constrained (Von Thadden, 1995). Adam and Streitz (2016) also find empirical evidence showing that loans funded by relationship lenders are more likely to include PPPs. However, this result only holds for accounting-based PPPs, but not for rating-based PPPs, indicating that only accounting-based PPPs are used to address hold-up problems. They explain the results by the fact that covenants are written on accounting ratios rather than credit ratings; therefore, hold-up problems induced by covenant violations cannot be addressed by rating-based PPPs.

Between rating-based PPPs' signaling role and accounting-based PPPs' role in alleviating hold-up problems, the signaling effect is expected to be more relevant to informationally disadvantaged foreign lenders than hold-up concerns. Therefore, we expect foreign lenders to rely more on credit ratings than accounting ratios when setting the performance benchmarks in PPPs than their domestic counterparts. Based on this argument, we specify the following testable hypothesis:

H2: With a higher percentage of foreign lenders in the syndicated loan lender group, the propensity to choose accounting ratios instead of credit ratings as the performance measure in PPPs decreases.[6]

Finally, we examine the difference in choice between foreign lead arrangers and foreign participant lenders. Lead arrangers are responsible for carrying out due diligence on the borrower, whereas participant lenders have an arm's length relationship with the borrower through the lead arranger and rely on the lead arranger to collect information (Ball et al., 2008; Dennis & Mullineaux, 2000; Sufi, 2007).[7] The due diligence process allows lead arrangers, regardless of whether domestic or foreign, to directly communicate with the borrower and

[6] This hypothesis is stated in the alternative form. The corresponding null hypothesis is that the percentage of foreign lenders in the syndicated lender group does not affect the propensity to choose accounting ratios instead of credit ratings as the performance measure in PPPs.

[7] Although participants typically delegate screening and monitoring duties to leads, there is little evidence that they rely on leads during loan renegotiations. All syndicate members are entitled to vote in renegotiations and a unanimous decision is often required (LSTA, 2007; Sufi, 2007). The literature shows that it is difficult for any member of the lending group to dominate renegotiations and there is often a coordination problem among lenders during this process (Bolton & Scharfstein, 1996; Gilson, John, & Lang, 1990). Hence, the renegotiation cost discussed in H1 should be a concern for both leads and participants.

access private information, alleviating the information disadvantage of foreign leads compared with domestic ones. In other words, when playing the lead role, foreign lenders should be as informed as their domestic counterparts. In this case, we do not expect foreign leads to have an incremental requirement for the use of rating-based PPPs compared with domestic leads. By contrast, the information disadvantage of foreign lenders should be more evident when they play the participant role. Although both foreign and domestic participants receive information about the borrower from leads, as independent investors that bear their own risks, participants cannot completely rely on leads but should have their own risk assessment and control (Champagne & Coggins, 2012; Dennis & Mullineaux, 2000; Gatev & Strahan, 2009; Ivashina, 2009; Lee & Mullineaux, 2004; Preece & Mullineaux, 1996). In this case, domestic participants are expected to be more capable of making informed judgments, whereas foreign participants are more likely to seek extra protection from signaling devices such as rating-based PPPs. Based on this argument, we specify the following testable hypothesis:

H3: Evidence consistent with H1 and H2 mainly exists when foreign lenders serve as participants rather than lead arrangers in syndicated loans.

3. Research design

3.1. Hypothesis tests

To test the prediction in H1, we run the following regression analysis:

$$PPP.Exist\,/\,Covenant\ Tightness = \alpha + \beta\ Foreign\ Lender + \gamma\ Controls + \varepsilon, \quad (1)$$

where *PPP.Exist* is an indicator variable equal to one if the loan contains a PPP and zero otherwise. *Covenant Tightness* is proxied by three variables including the number of financial

covenants imposed by the loan (*CovNo*), an aggregated measure of the probability of covenant violation, as described by Demerjian and Owens (2016) (*CovTight.DO*), and an aggregated measure of the probability of covenant violation, as described by Prilmeier (2017) (*CovTight.P*). The test variable, *Foreign Lender*, captures the percentage of foreign lenders in the loan. H1 predicts that foreign lenders adopt PPPs instead of tight covenants to address their information asymmetry due to incremental renegotiation costs. Therefore, we expect the coefficient on *Foreign Lender* to be significantly positive when *PPP.Exist* is the dependent variable and insignificant when *Covenant Tightness* is the dependent variable.

To test the prediction in H2, we first estimate the following multinomial logistic regression:

$$P\ (PPP = 1, 2) = \int (\alpha + \beta\ Foreign\ Lender + \gamma\ Controls + \varepsilon), \tag{2}$$

where *PPP* is a categorical variable that can take on one of three values: zero if the loan does not contain a PPP, one if the loan contains a rating-based PPP, and two if the loan contains an accounting-based PPP. The multinomial logistic regression estimates the impact of the explanatory variables on the probability of *PPP* taking on each of these three values, requiring that the probabilities sum to one. H2 predicts that a higher percentage of foreign lenders in a loan increases the likelihood of choosing credit rating- but not accounting ratio-based PPPs. Therefore, we expect a significantly positive coefficient on *Foreign Lender* when $PPP = 1$ and an insignificant coefficient when $PPP = 2$.

In addition, we exclude loans without PPPs and examine the likelihood of using accounting ratios as the performance measure, conditional on the loan having a PPP:

$$P\ (PPP.AccNum = 1) = \int (\alpha + \beta\ Foreign\ Lender + \gamma\ Controls + \varepsilon), \tag{3}$$

where *PPP.AccNum* is an indicator variable equal to one if the PPP is based on accounting ratios and zero otherwise. Based on the prediction of H2, we should find a significantly negative coefficient on *Foreign Lender.* The additional analyses and robustness tests are also based on Equation (3).

To test the prediction in H3, we substitute *Foreign Lender* in Equations (1) and (3) with *Foreign Lead* and *Foreign Parti*, respectively. H3 predicts the coefficient on *Foreign Lead* to be insignificant in both Equations (1) and (3), while the coefficient on *Foreign Parti* to be significantly positive in Equation (1) and significantly negative in Equation (3).

In Equations (1)–(3), we include a set of control variables commonly adopted by empirical studies of PPP or covenant tightness (Adam & Streitz, 2016; Ball et al., 2008; Costello & Wittenberg-Moerman, 2011; Prilmeier, 2017). The borrower-specific controls include firm size (*Firm Size*), leverage (*Leverage*), the market to book ratio (*Mar to book*), tangibility (*Tangibility*), profitability (*Profitability*), profit volatility (*σ (Profitability)*), the current ratio (*CurRatio*), the interest coverage ratio (*IntCov*), and accounting quality proxied by accruals quality (*AQ*) measured using the model proposed by Dechow and Dichev (2002). The loan-specific controls include the prior lending relationship between the lead arranger(s) of the loan and borrower (*Relation*), loan maturity (*Maturity*), loan amount (*Loan Size*), and a dummy variable indicating whether the loan is a revolving loan (*Revolver*). In addition, we control for credit rating fixed effects, loan purpose fixed effects, year fixed effects, and industry fixed effects. Table 1 provides the definitions and measurements of the variables.

[Insert Table 1]

3.2. Sample selection

We collect our loan sample from Thomson Reuters' LPC DealScan database. Our sample selection starts with all the dollar-denominated loans issued to U.S. borrowers from January 1995 to August 2017. The sample starts from 1995 because the DealScan data coverage becomes more complete after that year (Helwege, Huang, & Wang, 2017; Kim, Song, & Zhang, 2015). Financial information on the borrower firm is obtained from Compustat. The loan variables are matched with firm variables using the Dealscan_Compustat_Link_17 April 2018 file provided by Chava and Roberts (2008). The loan variables and firm credit ratings are measured at loan issuance, while the other firm variables are measured at the end of the fiscal year immediately before loan issuance. We exclude loans issued to financial (SIC codes 600–699) and regulated utilities (SIC codes 481 and 491–494) firms and loans with missing data on the variables used in the main tests. The final full sample consists of 35,270 loans issued to 5,443 borrower firms.

We further construct a PPP sample using loans in the full sample that include a PPP. Loans for which the performance measure in the PPP is neither accounting ratios nor credit ratings and loans for which the performance measure includes both accounting ratios and credit ratings are removed from the sample. We also require the borrower firm to have an available credit rating at loan issuance to avoid the situation in which accounting ratios are chosen as the performance measure simply because credit ratings are not available. The final PPP sample includes 6,795 loans issued to 1,495 borrower firms. Table 2 describes the sample selection procedure.

[Insert Table 2]

4. Empirical results

4.1. Descriptive statistics

Table 3 presents the sample distribution by lender country (Panel A), industry (Panel B), and year (Panel C). In Panel A, the aggregate number of loans from each country exceeds the total number of loans in our sample since a substantial proportion of our sample loans are funded by multiple lenders domiciled in different countries. Lenders are from 71 countries in the full sample and 55 countries in the PPP sample. Domestic lenders based in the United States are involved in the vast majority of the loans (34,363 out of 35,270 in the full sample and 6,738 out of 6,795 in the PPP sample). The foreign countries represented most frequently include Canada, the United Kingdom, France, Japan, Germany, the Netherlands, Switzerland, Italy, Belgium, and Australia. Among the loans involving lenders from these countries in the full sample, the percentage of loans with a PPP varies between 40.60% for Switzerland and 60.77% for Belgium. In the PPP sample, the percentage of loans using accounting ratios instead of credit ratings as the performance benchmark in PPPs is especially low for loans involving lenders from Italy (12.83%), Belgium (28.13%), and Australia (18.70%). This figure is generally around 40% for the other main foreign lender countries.

Panel B shows that borrower firms are from a variety of industries. The most frequently represented industries are durable goods manufacturing, non-durable goods manufacturing, and services. The percentage of loans with a PPP is typically around 40% in each industry, without considerable variation across industries, except for the public administration industry where the percentage is 19.54%. In the PPP sample, however, the percentage of loans with accounting-based PPPs significantly varies across industries. While no loan issued to public administration firms adopts accounting-based PPPs, 78.57% of the loans issued to agriculture, forestry, and fishing firms have accounting-based PPPs.

In Panel C, the distribution of loans over 1995–2007 is largely stable for the full sample. There is a substantial reduction in the number of loans during the 2008–2009 financial crisis, possibly due to the decline in the supply of credit during this period of turmoil (Ivashina &

Scharfstein, 2010).[8] The percentage of PPP adoption is generally around 40% before 2003. A peak appears during 2004–2008. For example, 49.75% of loans adopt PPPs in 2005. Since 2009, the prevalence of PPP adoption subsides. In 2016, only 17.89% of loans use PPP. In the PPP sample, the percentage of loans with accounting-based PPPs fluctuates over time. It ranges from 41.67% in 2015 to 72.97% in 1998.

[Insert Table 3]

Table 4 presents the descriptive statistics of the variables used in our main tests.[9] In the full sample, 39.7% of loans are with PPPs. On average, each loan includes 1–2 financial covenants (mean = 1.583) and the loans are set with a 22.0% (40.0%) likelihood of any financial covenant being violated in the quarter immediately after the loan issuance using the method of Prilmeier (2017) (Demerjian and Owens (2016)). In the PPP sample, 54.0% of loans adopt accounting ratios instead of credit ratings as the performance measure in the PPP. The average percentage of foreign lenders/leads/participants in a loan is 21.4%/13.2%/27.4% for the full sample and 30.8%/14.0%/34.3% for the PPP sample. The significantly higher foreign lender percentage of the PPP sample provides preliminary evidence of the positive relation between the foreign lender percentage and likelihood of requiring a PPP in a loan. The distribution of the control variables also varies significantly between the full and PPP samples.

[8] The number of loans in our sample in the post-crisis period (2010 onward) is still lower than that in the pre-crisis period. However, in the raw DealScan U.S. sample, the number of loans restores its pre-crisis level after the crisis period. The lower number of loans in our sample in the post-crisis period could be caused by the Dealscan_Compustat_Link_17 April 2018 file from Chava and Roberts (2008) being more complete in the earlier than in the later period or the increasing percentage of loans being issued to private firms.

[9] Online appendix Table A1 reports the summary statistics of the variables used in the other tests.

For example, borrower firms in the full sample are smaller in size than those in the PPP sample. The mean (median) total assets of borrower firms is $5,017 million ($880 million) for the full sample, whereas it is $6,552 million ($2,322 million) for the PPP sample. The profitability of borrower firms is also lower in the full sample than in the PPP sample (mean = 0.137 for the full sample vs. 0.180 for the PPP sample). One possible explanation for the differences is that these variables affect the likelihood of including a PPP in a loan contract. Another potential reason is that borrower firms in the PPP sample are all rated, while the full sample includes both rated and unrated borrowers.

[Insert Table 4]

Table 5 presents the Pearson correlation matrices. Above (below) the diagonal are the correlations for the PPP (full) sample. In the full sample, *Foreign Lender* is significantly positively correlated with *PPP.Exist*, lending preliminary support to the prediction in H1 that informationally disadvantaged foreign lenders have a higher propensity to adopt PPPs in their loan contracts than their domestic counterparts. The correlations between the foreign lender percentage and three covenant tightness variables are all significantly negative, consistent with foreign lenders being cautious against imposing tight covenants, possibly due to the concern about renegotiation costs. In the PPP sample, *Foreign Lender* is significantly negatively correlated with *PPP.AccNum*, lending preliminary support to the prediction in H2 that foreign lenders are less likely to choose accounting ratios instead of credit ratings as the performance benchmark in PPPs than their domestic counterparts. Consistent with *Foreign Lender*, *Foreign Parti* is significantly positively associated with *PPP.Exist* in the full sample and significantly negatively associated with *PPP.AccNum* in the PPP sample. By contrast, the correlation between *Foreign Lead* and *PPP.Exist* (*PPP.AccNum*) in the full (PPP) sample is significantly

negative (positive), opposite to the findings with *Foreign Lender*, lending preliminary support to the prediction in H3 that evidence consistent with H1 and H2 mainly exists when foreign lenders serve as participants rather than lead arrangers in syndicated loans.

[Insert Table 5]

4.2. Main tests

4.2.1. Test of H1

Table 6 presents the test of H1, which examines the impact of the foreign lender percentage on the likelihood of imposing PPPs and tightness of financial covenants. In Column (1), we regress the number of financial covenants in the loan on the foreign lender percentage. The coefficient on *Foreign Lender* is insignificantly different from zero. In Column (2), we repeat the regression in Column (1) but remove loans with neither covenants nor PPPs from the sample because the data availability of these loans may be incomplete. In other words, these loans may actually include covenants and/or PPPs, but DealScan fails to track them (Christensen & Nikolaev, 2012; Hollander & Verriest, 2016; Nini, Smith, & Sufi, 2009). The coefficient on *Foreign Lender* remains insignificant after applying this additional filter to the sample. In Columns (3) and (4), the independent variables are covenant tightness measured following Prilmeier (2017) and Demerjian and Owens (2016), respectively. The coefficients on *Foreign Lender* are insignificant in both columns. The findings in Columns (1)–(4) imply that foreign lenders do not rely on restrictive covenants to address their information disadvantage.

Column (5) examines the impact of the foreign lender percentage on the likelihood of imposing PPPs in loan contracts. We find a significantly positive coefficient on *Foreign Lender* (coef. = 0.258, z-stat. = 3.23, marginal effect = 0.049). In Column (6), we exclude loans with

neither covenants nor PPPs from the sample and rerun the regression in Column (5). The result remains qualitatively unchanged. We also include deal fixed effects and rerun the regression in Column (5) using linear probability models.[10] A syndicated loan deal may be broken down into multiple tranches, each with a different amount, loan type, interest rate, maturity, collateral, and PPP and each may be funded by different lenders. The basic unit of observation in our tests is a tranche. Columns (7) and (8) present the linear probability regression results without and with controlling for deal fixed effects, respectively. The coefficients on *Foreign Lender* are still significantly positive in both columns, implying that even within the same deal, the tranches funded by more foreign lenders are more likely to impose PPPs. Columns (5)–(8) provide consistent evidence on foreign lenders' greater reliance on PPPs than the domestic lenders.

In Columns (9) and (10), we examine the impact of renegotiation costs on the relation between the foreign lender percentage and likelihood of imposing PPPs. We capture renegotiation costs using the percentage of lenders in a loan that are not commercial banks. The presence of non-bank lenders in a lending syndicate increases renegotiation costs because these lenders possess different objectives from commercial banks (Berlin, Nini, & Yu, 2020; Beyhaghi, Nguyen, & Wald, 2019). We split the full sample by the median percentage of non-bank lenders in a loan and rerun the regression in Column (5) separately using each subsample. The results show that the positive effect of the foreign lender percentage on the likelihood of imposing PPPs is more pronounced with higher renegotiation costs. This evidence lends support to our argument that foreign lenders' greater reliance on PPPs instead of covenants, compared with their domestic counterparts, is driven by the concern about renegotiation costs.

[10] Following the literature (Adam & Streitz, 2016; Beck et al., 2017), we use linear probability instead of non-linear logit models when controlling for deal fixed effects because of the large number of fixed effects.

There are some notable findings with the control variables. For example, the coefficients on *Mar to book* consistently show a significantly negative sign in the covenant restrictiveness regressions, consistent with high-growth firms being more reluctant to accept tight covenants (Nash, Netter, & Poulsen, 2003; Reisel, 2014). The coefficients on *AQ* in the likelihood of imposing PPP regressions are significantly negative. Since a higher *AQ* indicates worse accruals quality, this result is consistent with the argument of Hu and Mao (2017) that loans issued to firms with poor accruals quality are less likely to contain PPPs because of the concern about monitoring costs. We also find a significantly positive relation between maturity and PPP existence. As maturity increases, the credit quality of the borrower is more likely to change, making an automatic adjustment to the interest rate according to changes in borrowers' performance by PPP particularly useful since it reduces renegotiation costs. In the likelihood of imposing PPP regressions, the coefficients on *Revolver* also consistently exhibit a significantly positive sign, consistent with the finding of Hu and Mao (2017). Borrowers facing financial difficulties tend to withdraw more funds from their revolving lines of credit (Campello, Giambona, Graham, & Harvey, 2011). Therefore, revolving loans are more likely to include PPPs than term loans to address borrowers' ex-post opportunistic behavior.

[Insert Table 6]

4.2.2. Test of H2

Table 7 reports the test of H2, which examines the impact of the foreign lender percentage on the choice between accounting ratios and credit ratings as the performance indicator in PPPs. Columns (1) and (2) present the multinomial logistic regression results. We find that the foreign lender percentage is significantly positively (coef. = 0.947, marginal effect = 0.051, z-stat. = 5.93) correlated with the use of rating-based PPPs, while the relation between the foreign lender

percentage and use of accounting-based PPPs appears to be insignificant (coef. = -0.034, marginal effect = -0.016, z-stat. = -0.38). These findings are consistent with the prediction in H2 that foreign lenders prefer using rating- instead of accounting-based PPPs to address their incremental information risk than their domestic counterparts. Some notable findings with the control variables include the significantly positive relation between the market to book ratio and use of rating-based PPPs, while the relation between the market to book ratio and use of accounting-based PPPs is insignificant. This result is consistent with high-growth firms using rating-based PPPs to signal their future growth potential. In addition, *Relation* is significantly positively correlated with the use of accounting-based PPPs, while its relation with the use of rating-based PPPs is insignificant. This finding is identical to that in Adam and Streitz (2016) and implies that loans issued by relationship lenders use accounting-based PPPs to alleviate the hold-up problem.

Column (3) presents the estimation results of Equation (3), where we exclude loans without PPPs and examine the choice between accounting- and rating-based PPPs conditional on the loan including a PPP, using a logit regression. We find a significantly negative relation between the foreign lender percentage and likelihood of choosing accounting- instead of rating-based PPPs (coef. = -1.310, marginal effect = -0.100, z-stat. = -3.98), providing further evidence of foreign lenders' relative preference for rating-based PPPs. With regard to the control variables, we find that smaller borrowers with lower market to book ratios are more likely to incur accounting-based PPPs, consistent with the argument of Ball et al. (2008) that it is more efficient to use accounting ratios than credit ratings as the performance measure when the borrower is subject to higher default risk. This is because accounting ratios capture changes in the borrower's performance in a timelier fashion than credit ratings, and timely adjustment to the interest rate is especially important for lenders when the borrower's default risk is high.

In addition, we find that smaller loans with longer maturity and those issued by relationship lenders are more likely to adopt accounting- instead of rating-based PPPs.

One potential concern about the results in Column (3) is that they are estimated based on the PPP sample, while the decision to include PPPs in loan contracts is non-random. Since using a non-random sample in regressions may give rise to the omitted variable problem, we adopt Heckman's two-stage procedure (Heckman, 1979) to correct for this potential sample selection bias. In the first stage, we estimate a logit regression of the inclusion of PPPs on an instrumental variable and other independent variables as in Equation (1) using the full sample, and calculate the inverse Mills ratio (*IMR*). The instrumental variable we use is the average likelihood of including PPPs among loans issued to the same industry in the same year as the current loan, excluding the current loan from the calculation.[11] In the second stage, we re-estimate Equation (3) and include *IMR* obtained from the first stage as an additional control variable. Column (4) reports the results of the second-stage regression. The coefficient on *Foreign Lender* is still negative and significant at the 1% level after controlling for *IMR*, confirming that our findings are not affected by the sample selection problem. The coefficient on *IMR* is insignificant, implying that sample selection bias is not an issue in our study either.

The results in Column (3) may also suffer an endogeneity concern that some unobservable borrower characteristics could be correlated with the choice of PPP performance indicator. To capture the unobservable time-invariant borrower characteristics, we include firm fixed effects and re-estimate Equation (3) using linear probability models. Columns (5) and (6) present the linear probability regression results without and with controlling for firm fixed effects, respectively. The coefficients on *Foreign Lender* are significantly negative in both

[11] We find a significantly positive coefficient (coef. = 1.806, z-stat. = 11.47) on the instrumental variable in the first-stage regression. Online appendix Table A2 reports the first-stage regression results.

columns, confirming that our prior findings continue to hold even after controlling for unobservable time-invariant borrower characteristics.

[Insert Table 7]

4.2.3. Test of H3

To examine the difference in choice between foreign lead arrangers and foreign participant lenders, we substitute *Foreign Lender* in the regressions with *Foreign Lead* and *Foreign Parti*, respectively. In Columns (1) and (2) of Table 8, we repeat the test of H1 (i.e., the *PPP.Exist* regressions). Column (1) shows a significantly negative coefficient on *Foreign Lead* and Column (2) shows a significantly positive coefficient on *Foreign Parti*. These results imply that greater demand for PPPs among foreign lenders only exists when they play the participant role. When foreign lenders play the lead role, they are even less likely to require PPPs than their domestic counterparts. In Columns (3) and (4), we repeat the test of H2 (i.e., the *PPP.AccNum* regressions). In Column (3), the coefficient on *Foreign Lead* is insignificantly different from zero and we find a significantly negative coefficient on *Foreign Parti* in Column (4). These results indicate that foreign lenders' greater preference for rating- instead of accounting-based PPPs mainly exists when they serve as participants instead of lead arrangers in the syndicate. The findings in Columns (1)–(4) lend support to H3, which predicts that the evidence consistent with H1 and H2 is mainly driven by foreign participants rather than foreign leads. To the extent that foreign participants are subject to greater information risk than

foreign lead arrangers, these findings are consistent with information risk driving foreign lenders' bias in choosing the performance benchmark.[12,13]

However, an alternative explanation is that banks that serve the lead arranger role may differ in some characteristics from banks that serve the participant role, and it is this variation in bank characteristics rather than the difference in roles that leads to the contrasting results on *Foreign Lead* and *Foreign Parti*. To rule out this competing explanation, we first include some foreign lead/participant characteristics and the interaction terms between these foreign lead/participant characteristics and the foreign lead/participant percentage as additional control variables and replicate the regression of *PPP.AccNum* on *Foreign Lead*/*Foreign Parti* in Columns (5) and (6), respectively. Following the literature (Delis, Kokas, & Ongena, 2016; Mora, 2015; Santos, 2011; Schwert, 2018), the bank characteristics we include are size, leverage, ROA, and the Tier 1 capital ratio. The coefficient on *Foreign Lead* in Column (5) remains insignificant and the coefficient on *Foreign Parti* in Column (6) is still significantly negative, implying that our prior findings continue to hold after controlling for foreign bank

[12] The above tests examine foreign leads vs. domestic leads and foreign participants vs. domestic participants in two regressions, respectively. In online appendix Table A3, we compare all lender roles in a single regression. The results show that as the percentage of foreign leads in the overall syndicate lender group increases, the likelihood of imposing PPPs in loans reduces. By contrast, the likelihood of using PPPs increases with the higher domestic participant percentage and foreign participant percentage. Regarding the trade-off between accounting- and rating-based PPPs, the percentage of foreign leads does not show a significant impact. The percentage of domestic participants reveals a positive relation with the choice of accounting-based PPPs, whereas a higher percentage of foreign participants lowers the likelihood of choosing accounting-based PPPs. The percentage of domestic leads is omitted from the regressions.

[13] The difference between foreign leads and foreign participants also holds when we estimate multinomial logit regressions (as specified in Columns (1) and (2) of Table 7) on *Foreign Lead* and *Foreign Parti*, respectively. Online appendix Table A4 presents these multinomial logit regressions.

characteristics. Regarding the bank controls, we find that the impact of the foreign lead percentage on the propensity to adopt accounting- instead of rating-based PPPs becomes more negative when foreign leads have larger leverage and it becomes more positive with foreign leads having higher Tier 1 capital ratios. The foreign participant's characteristics, however, do not affect the impact of the foreign participant percentage on the choice of performance measure in PPPs.[14,15]

Second, we adopt a constrained PPP sample in which we only keep loans for which all foreign participants have played the lead role in other loans of the sample. That is, the foreign participants and foreign leads in this constrained sample are the same set of banks, only they play the participant role in some loans and the lead role in others. The results in Columns (7) and (8) continue to show the significant impact of the foreign participant percentage on the trade-off between the ratios and ratings in the PPP, while the relation between the foreign lead percentage and trade-off is still insignificant. These findings indicate that for the same banks, they are reluctant to use accounting ratios as performance benchmarks when they play the

[14] Data on bank controls are collected from Compustat Bank and Compustat Global. We identify the Compustat GVKEYs for the foreign banks in our sample based on the DealScan lenders-Compustat link table in Schwert (2018). For lenders not included in the link table, we manually match them to Compustat following the procedure described in Schwert (2018). We take mergers and acquisitions into account based on information from SNL Financial and acquired firms are aggregated to their acquirers at the effective date of the merger.

[15] In Column (5), loans without foreign leads are removed from the sample. Among the remaining 494 loans with foreign leads, we can collect bank characteristics for 455. In Column (6), loans without foreign participants are removed from the sample. Among the remaining 4,304 loans with foreign participants, we can collect bank characteristics for 2,856. The data completeness for foreign participants is significantly lower than that for foreign leads because many private foreign financial institutions join syndicates as participants and we cannot collect information on them from Compustat.

participant role but are unbiased when they play the lead arranger role, confirming that the difference is caused by roles rather than bank characteristics.

[Insert Table 8]

4.3. Additional tests

4.3.1. Foreign participant lenders' information disadvantage

In this section, we examine the cross-sectional variation in the relation between the foreign participant percentage and performance indicator choice based on the extent of information risk that foreign participant lenders face. First, we further partition the PPP sample according to the borrower firm's information asymmetry, estimate Equation (3) separately using each subsample, and compare the coefficients on *Foreign Parti* across the subsamples using an F-test. Following the literature (Anderson, Duru, & Reeb, 2009; Maskara & Mullineaux, 2011), we measure information asymmetry using the average decile rank of the analyst forecast error, number of analysts, and bid/ask spread. Columns (1) and (2) of Panel A in Table 9 report the estimation results. The coefficient on *Foreign Parti* is insignificant for the low information asymmetry subsample but significantly negative for the high information asymmetry subsample. The F-test shows that the difference in the coefficients on *Foreign Parti* across these two subsamples is statistically significant (p-value = 0.040). Similarly, we also conduct a split-sample analysis based on foreign participant lenders' familiarity with the U.S. syndicated loan market. We measure familiarity using the average number of loans of the foreign participants of a specific loan issued to U.S. public borrowers in the same industry as the current borrower in the last five years preceding the current loan. The results in Columns (3) and (4) show that the coefficient on *Foreign Parti* is significantly negative for the low familiarity subsample but insignificant for the high familiarity subsample. The F-test indicates

that the difference is statistically significant (p-value = 0.077). In Columns (5) and (6), we investigate the conditional effect of the average geographical distance between foreign participants and the borrower. A large number of studies (e.g., Agarwal & Hauswald, 2010; Almazan, 2002; Beneish & Yohn, 2008; Coval & Moskowitz, 2001; Giannetti & Laeven, 2012; Hauswald & Marquez, 2006; Petersen & Rajan, 2002; Ragozzino & Reuer, 2011) argue that remote lenders are less capable of collecting soft information on the borrower relative to proximate lenders. The results reveal a significantly negative correlation between the foreign participant percentage and likelihood of choosing accounting- instead of rating-based PPPs across both subsamples with foreign participant lenders located far away from or close to the borrower. However, the F-test shows the greater impact of the foreign participant percentage in the high distance subsample than in the low distance sample (p-value = 0.038), suggesting that being geographically closer to the local borrower may attenuate, but not completely eliminate, the information disadvantage encountered by foreign participant lenders.

Collectively, the results in Panel A of Table 9 imply that the negative impact of the foreign participant percentage on the propensity to use accounting- instead of rating-based PPPs is more pronounced among loans (1) issued to more opaque borrowers or (2) involving foreign participants less familiar with the U.S. syndicated loan market or (3) located further away from the borrower. To the extent that foreign participants incur higher information risk in the above three scenarios, our findings provide evidence that the information disadvantage is the underlying mechanism for foreign participants' greater preference for rating-based PPPs than their domestic counterparts.

[Insert Table 9]

4.3.2. Alternative explanation: Within-syndicate moral hazard

In the previous sections, our argument is based on the agency issue between borrowers and lenders. We argue that for informationally disadvantaged foreign participants, this agency concern is further aggravated compared with their domestic counterparts, and they are therefore more likely to depend on rating-based PPPs to protect themselves from the borrower's opportunistic behaviors. However, for syndicated loans, agency issues exist not only between borrowers and lenders but also within the syndicate between lead arrangers and participant lenders. In this section, we investigate an alternative explanation of our findings that it is the agency concern about lead arrangers that drives foreign participant lenders to choose credit ratings as the performance measure in PPPs.

Specifically, in syndicated loans, participant lenders delegate monitoring duties to lead arrangers. However, while lead arrangers have to bear all the monitoring duties, they only hold part of the loan. Furthermore, monitoring duties are costly yet highly unobservable. Therefore, there is an incentive for lead arrangers to shirk from putting in the optimum monitoring effort, leading to a within-syndicate moral hazard problem (Gorton & Pennacchi, 1995; Hölmstrom, 1979; Hölmstrom & Tirole, 1997). Owing to information barriers, foreign participants are likely to be more concerned about this moral hazard problem than their domestic counterparts. As a result, they may welcome protection mechanisms in the loan that rely less on leads' monitoring effort. Compared with accounting ratios, using credit ratings as performance benchmarks should require less monitoring from leads, since credit ratings are provided by independent third parties and therefore less likely to be manipulated.

We examine the above explanation using cross-sectional analyses. We split the PPP sample based on the percentage share of the loan retained by lead arrangers (*Lead Share*), leads' reputation measured by their market shares (*Lead Reputation*), foreign participants' prior relationship with leads (*Lead-Foreign Parti Relation*), and whether the loan has a foreign lead arranger (*Foreign Lead Dummy*). The moral hazard problem should reduce when leads are

more reputable and retain a larger share of the loan and when participants are more familiar with leads (Ivashina, 2009; Park, 2000; Pichler & Wilhelm, 2001; Sufi, 2007). We also expect the existence of foreign leads to alleviate foreign participants' moral hazard concern. If foreign participants' stronger preference for rating-based PPPs is indeed driven by their heightened concern about the moral hazard problem, we should expect the negative relation between the foreign participant percentage and likelihood of choosing accounting- instead of rating-based PPPs to be weakened by a higher lead share and reputation, a closer prior relationship between leads and foreign participants, and the existence of foreign leads in the loan.

Panel B in Table 9 reports the results of the cross-sectional analyses. In Columns (1)–(6), we do not find the relation between the foreign participant percentage and choice of performance measure in PPPs to vary with leads' share in the loan, leads' reputation, or foreign participants' prior relationship with leads. However, the results in Columns (7) and (8) imply that foreign participants' stronger preference for rating-based PPPs is muted if the loan has a foreign lead.[16] Collectively, these findings do not provide sufficient support to the argument that foreign participants' stronger preference for rating-based PPPs can be explained by their greater concern about the moral hazard problem.

[16] We further analyze why the presence of foreign leads would mitigate foreign participants' greater preference for rating-based PPPs than their domestic counterparts. The results in Table A5 of the online appendix show that the mitigation effect only exists when the foreign lead and foreign participants of the loan come from different countries/regions and speak different languages. According to these findings, the mitigation effect cannot be explained by the greater trust between foreign leads and foreign participants caused by geographical or linguistic proximity. By contrast, one feasible explanation could be that only the most trustworthy foreign leads or projects with low risk can attract foreign participants coming from different countries/regions or speaking different languages to join the syndicate, and therefore foreign participants no longer insist on having rating-based PPPs in these cases.

4.4. Robustness tests

It is possible that certain borrower characteristics such as credit quality may jointly affect the extent to which a firm attracts foreign credit and choice of performance measure in the PPP, leading to a spurious correlation between the two. Although we controlled for credit rating fixed effects and several other variables that capture the borrower firm's credit quality, there is still a concern about omitted correlated variables. To alleviate the endogeneity problem, we perform a two-stage least squares (2SLS) regression analysis. We use the average foreign participant percentage of all the loans issued to U.S. public borrowers in the same industry and year, excluding the current loan from the calculation, as an instrument for the foreign participant percentage. Because our regressions explicitly control for industry and year fixed effects, we do not expect the instrumental variable to affect the performance indicator choice in PPPs other than through the foreign participant percentage (Hollander & Verriest, 2016).

Table 10 presents the 2SLS regression results. In the first stage, we model *Foreign Parti* on the instrumental variable and the same set of controls as in the *PPP.AccNum* regression (Column (1)). The coefficient on the instrumental variable is positive and significant at the 1% level, lending support to our choice of instrument.[17] In the second stage, *PPP.AccNum* is regressed on the fitted value of *Foreign Parti* from the first-stage model along with the control variables (Column (2)). The coefficient on *Foreign Parti* is significantly negative, as in the single equation analysis. This result shows that our previous finding that foreign participant lenders prefer to use rating-based instead of accounting-based PPPs still holds after considering the omitted correlated variable problem. Column (2) also shows that the Cragg–Donald F-statistic is larger than the critical value proposed by Stock and Yogo (2005), suggesting that

[17] We also test the strength of the instrument by performing an F-test against the null hypothesis that the excluded instrument is irrelevant in the first-stage regression. The documented F-statistic is above the common threshold of 10.

our instrument is relevant to the endogenous variable. The Kleibergen–Paap rk F-statistic, another test of relevance robust to firm-level clustering of standard errors, leads to a similar conclusion.

[Insert Table 10]

In Table 11, we evaluate the sensitivity of our results to various variable definitions, sample selections, model specifications, and control variables. Column (1) excludes loans without foreign participant lenders. Column (2) calculates the foreign participant percentage based on the loan amount.[18] Our previous finding that foreign participants prefer rating- rather than accounting-based PPPs remains unchanged in these two columns. In Column (3), we only include loans with non-relationship participants (foreign or domestic). The coefficient on *Foreign Parti* is still significantly negative, implying that foreign participants have greater demand for rating-based PPPs even compared with domestic participants that have no prior lending relationship with the borrower. That is, lacking a prior relationship should not be the only reason for foreign participants' information disadvantage. Other potential reasons such as geographical distance and being unfamiliar with the local regulatory and business environment must also play a role. In the main tests, the basic unit of observation is a tranche. However, the loan contract is negotiated, signed, and monitored at the deal level. Therefore, the contract terms for tranches in the same deal may not be independent. To address this issue, we only include one tranche with the largest amount in each deal and re-estimate Equation (3) based on the reduced sample in Column (4). The results are similar to those found in the main tests. In Column (5), we control for the PPP performance measure adopted in the borrower's previous

[18] The number of observations for this test is significantly reduced because DealScan only records the amount of funds provided by each individual lender for a limited number of loans.

loan (*PPP.AccNum.Pre)*. The results show that the coefficient on *Foreign Parti* remains significantly negative after controlling for *PPP.AccNum.Pre*. The coefficient on *PPP.AccNum.Pre* is highly significant (z-stat. = 14.60) and positive, implying that the choice of performance measure in the PPP is highly persistent over time for the same borrower. The country represented most frequently by foreign lenders in our sample is Canada. Canadian banks may have closer relationships with U.S. borrowers than banks from other countries as a result of their geographical proximity, identical language, and similar cultural and institutional environments. In Column (6), we exclude loans involving Canadian participant lenders from the sample and repeat the main tests. The results remain qualitatively unchanged.[19] Ball et al. (2008) and Costello and Wittenberg-Moerman (2011) also control for the interest spread, collateral requirement, covenant intensity, and number of lenders in their regressions of PPP types. We did not include these loan characteristics in our main tests because of the concern about the simultaneity between these loan characteristics and PPP types. Column (7) examines the sensitivity of our results to the inclusion of these loan characteristics as additional control variables. In this column, the coefficient on *Foreign Parti* continues to be significantly negative, confirming that our previous results are not affected by the inclusion of additional loan characteristics as control variables.

[Insert Table 11]

5. Conclusions

[19] We also exclude loans involving Canadian participants from the split-sample analysis based on distance. The results remain similar to those in Columns (5) and (6) of Panel A in Table 9. Online appendix Table A6 reports the results of this robustness test.

This study examines whether and how foreign lenders' debt contracting behavior differs from that of their domestic counterparts because of their information disadvantage. Specifically, we examine the adoption of PPPs and choice between accounting ratios and credit ratings as the performance measure in PPPs. First, we find that foreign lenders rely on PPPs instead of tight covenants to protect themselves from greater information asymmetry. This evidence is consistent with PPPs being useful in addressing agency concerns as well as minimizing renegotiation costs. Second, we find a relative preference for rating-based as opposed to accounting-based PPPs by foreign lenders than their domestic counterparts. This finding lends support to the argument of Adam and Streitz (2016) that rating-based and accounting-based PPPs serve different functions: while rating-based PPPs play a signaling role that is valuable for informationally disadvantaged foreign lenders, accounting-based PPPs alleviate the hold-up problem, which is less relevant to foreign lenders. Third, we find that foreign lenders' greater demand for PPPs, especially rating-based PPPs, mainly exists when they play the participant rather than the lead role.

In addition, the effect of the foreign participant percentage is more pronounced among foreign participants with higher information costs (e.g., for those less familiar with the U.S. syndicated loan market, for those with headquarters further from the borrower, and when the borrower is less transparent). On the contrary, the effect does not vary with leads' share in the loan, leads' reputation, or the prior relationship between leads and participants, although it is alleviated when at least one of the leads is also foreign. These findings indicate that foreign participants' greater preference for rating- instead of accounting-based PPPs than their domestic counterparts is driven by their information disadvantage rather than the within-syndicate moral hazard concern. The effect of the foreign participant percentage is incremental to the borrower's accounting quality and default risk, which are identified by the existing literature as the main determinants of the performance measure in PPPs (Ball et al., 2008;

Bannier & Wiemann, 2014; Costello & Wittenberg-Moerman, 2011; Hu & Mao, 2017). Our findings are also robust to controls of a wide array of borrower and loan characteristics and are unlikely to be affected by endogeneity and sample selection problems.

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Table 1
Definition and Measurement of the Variables

Variable	*Definition and Measurement*
Variables in the main tests	
Loan variables (source: Thomson Reuters's LPC DealScan)	
CovNo	The number of financial covenants imposed by the loan agreement.
CovTight.DO	Covenant tightness measured using an aggregated measure of the probability of debt covenant violation, as described by Demerjian and Owens (2016).
CovTight.P	Covenant tightness measured using an aggregated measure of the probability of debt covenant violation, as described by Prilmeier (2017).
Foreign Lead	The number of foreign lead arrangers in a syndicated loan divided by the total number of lead arrangers in the loan. Following Bharath, Dahiya, Saunders, and Srinivasan (2011) and Berg, Saunders, and Steffen (2016), we define a lender as a lead arranger if at least one of the following conditions is met: (1) *LeadArrangerCredit* = "Yes" in the LenderShares table of DealScan, (2) *LenderRole* = "Agent," "Admin agent," "Arranger," or "Lead bank" in the LenderShares table of DealScan, and (3) the lender is the sole lender.
Foreign Lender	The number of foreign lenders in a syndicated loan divided by the total number of lenders in the loan.
Foreign Parti	The number of foreign participant lenders in a syndicated loan divided by the total number of participant lenders in the loan.
IMR	Inverse Mills ratio obtained from the first-stage regression of the Heckman selection model.
Loan Purpose	Loans are divided into seven groups according to their primary purpose: acquisition lines, LBO/MBO/SBO, takeover, debt repay/recapitalization, corporate purpose, working capital, and other purposes.
Loan Size	Natural logarithm of the loan amount.
Maturity	Natural logarithm of the loan maturity in months.
PPP.AccNum	An indicator variable equal to one if the PPP is based on accounting ratios, and zero otherwise.
PPP.Exist	An indicator variable equal to one if the loan contains a PPP, and zero otherwise.
Relation	The dollar value of loans from the same lead bank over the total dollar value of all loans issued to the borrower in the last five years preceding the present loan. For loans with multiple lead lenders, we calculate the variable separately for each lender and assign the highest value to the loan.
Revolver	An indicator variable equal to one for revolving loans, and zero otherwise. A revolving loan is a loan with a type of any of the following: "Revolver/Line < 1 Yr.," "Revolver/ Line >= 1 Yr.," "Revolver/Term Loan," "364-Day Facility," "Demand Loan," or "Limited Line."
Borrower firm variables (source: Compustat)	
σ (Profitability)	Standard deviation of *Profitability* (defined below) estimated over the previous three to five years as available.
AQ	Accruals quality measured using the Dechow and Dichev (2002) model. Higher *AQ* indicates worse accruals quality.
Credit Rating	The S&P domestic long-term issuer credit rating (SPLTICRM), borrowers without a credit rating are assigned to the "unrated" category.
CurRatio	Current ratio, calculated as the ratio of current assets (ACT) to current liabilities (LCT).
Firm Size	Natural logarithm of a firm's total assets (AT).
IntCov	Interest coverage rate, measured by the ratio of operating income (OIBDP) to interest expense (XINT).
Leverage	Ratio of long-term debt (DLTT) plus debt in current liabilities (DLC) to total assets (AT).

Table 1
Definition and Measurement of the Variables

Variable	*Definition and Measurement*
Mar to book	Market to book ratio, calculated as the firm's total assets (AT) minus book value of common equity (CEQ) plus market value of equity (PRCC × CSHO), divided by total assets (AT).
Profitability	Profitability, calculated as operating income (OIBDP) divided by total sales (SALE).
Tangibility	Ratio of net PPE (PPENT) to total assets (AT).
Variables in other tests (source: Thomson Reuters's LPC DealScan, unless specified)	
Distance	The shortest distance between the borrower's headquarter and the foreign participant lender's headquarter in kilometers according to the Vincenty (ellipsoid) method. For loan i, we take the average distance between all foreign participant lenders and the borrower. (Source: Thomson Reuters's LPC DealScan, Compustat)
Familiarity	The average number of loans the foreign participant lenders of loan i issued to U.S. public borrowers in the same industry (one-digit SIC code) as the current borrower in the last five years preceding the current loan.
Foreign Lead Dummy	An indicator variable equal to one if the loan has a foreign lead arranger, and zero otherwise.
Foreign Lead/Parti Leverage	The average leverage ratio of all foreign lead/participant lenders of a loan, calculated as total liabilities (LT) divided by total assets (AT). (Source: Compustat Bank, Compustat Global)
Foreign Lead/Parti ROA	The average return on assets of all foreign lead/participant lenders of a loan, calculated as income before extraordinary items (IB) divided by total assets (AT). (Source: Compustat Bank, Compustat Global)
Foreign Lead/Parti Size	The average size of all foreign lead/participant lenders of a loan, calculated as the natural logarithm of total assets (AT). (Source: Compustat Bank, Compustat Global)
Foreign Lead/Parti Tier 1	The average Tier I capital ratio (CAPR1) of all foreign lead/participant lenders of a loan. (Source: Compustat Bank, Compustat Global)
Info Asymmetry	The average decile rank of the forecast error, number of analysts, and bid/ask spread. The forecast error is estimated as the ratio of the absolute difference between analysts' earnings consensus forecast and the actual earnings per share to the share price in the month before the annual earnings announcement. The number of analysts is estimated as the number of analysts issuing a forecast in the month before the annual earnings announcement. The bid/ask spread is estimated as the average ratio of the difference between the daily bid and ask closing prices to the midpoint of the bid and ask closing prices during the month before the annual earnings announcement. All variables are calculated across borrowers. (source: CRSP, I/B/E/S)
IntSpread	Natural logarithm of the interest spread, measured by All in Spread Drawn (AISD), which is the annual spread paid over LIBOR for each dollar drawn down from the loan.
Lead-Foreign Parti Relation	The dollar value of loans joined by the same foreign participant lender over the total dollar value of all loans arranged by the specific lead lender in the last five years preceding the present loan. For loan i, we take the average value of this variable among all foreign participant lenders.
Lead Reputation	An indicator variable equal to one if loan i is syndicated by one of the top six lead arrangers in the U.S. syndicated loan market, and zero otherwise. The ranking of lead arrangers is based on their previous-year market shares in terms of the total amount of deals they syndicated. To calculate market share, the deal amount is split equally among all lead arrangers if a deal involves multiple leads. For loan i, *Lead Reputation* is determined based on the highest ranking of all its lead arrangers (Costello & Wittenberg-Moerman, 2011).
Lead Share	Percentage share of the loan retained by all lead arrangers.
LenderNo	The total number of lenders in the loan syndicate scaled by loan amount.
Non-bank	The percentage of lenders in a loan that are not commercial banks.

Table 1
Definition and Measurement of the Variables

Variable	*Definition and Measurement*
PPP.AccNum.Pre	An indicator variable equal to one if *PPP.AccNum* = 1 for the previous loan issued to the same borrower, and zero otherwise.
Secured	An indicator variable equal to one if the loan agreement contains collateral requirements, and zero otherwise.

Table 2
Sample Selection Procedure

Selection Procedure	No. of Loans
Panel A: Full Sample	
All loans in the "Facility" Table in DealScan from January 1995 to August 2017.	315,829
- The borrower firm is not from the United States or the loan is not U.S. dollar-denominated.	(183,974)
- The loan data cannot be matched with the firm data from Compustat.	(69,327)
- The borrower firm belongs to the financial or regulated utilities sector.	(13,677)
- The variables used in the main tests have missing values.	(13,581)
Test Sample	35,270
Panel B: PPP Sample	
Loans in the full sample.	35,270
- The loan does not include a PPP.	(21,219)
- The performance measure in the PPP is neither accounting ratios nor credit ratings.	(491)
- The performance measure in the PPP includes both accounting ratios and credit ratings.	(267)
- The borrower firm did not have a credit rating when the loan was issued.	(6,498)
Test Sample	6,795

Notes: This table presents the sample selection procedure of the full sample in Panel A and the PPP sample in Panel B.

Table 3
Sample Distribution

	Full Sample		PPP Sample			Full Sample		PPP Sample	
	# of Loans	% of Loans with PPPs	# of Loans	% of Loans with Accounting-based PPPs		# of Loans	% of Loans with PPPs	# of Loans	% of Loans with Accounting-based PPPs
Panel A: Sample Distribution by Lender Country									
United States	34,363	40.33%	6,738	53.93%	Luxembourg	67	44.78%	24	16.67%
Canada	9,424	51.56%	3,242	47.53%	Saudi Arabia	64	35.94%	20	5.00%
United Kingdom	7,997	46.82%	2,671	39.12%	Malaysia	51	58.82%	19	15.79%
France	7,468	54.66%	2,900	46.55%	Kuwait	44	75.00%	23	21.74%
Japan	7,468	59.08%	3,213	37.85%	Cayman Islands	41	48.78%	19	36.84%
Germany	5,928	48.90%	2,233	38.74%	Poland	38	73.68%	15	86.67%
Netherlands	4,373	55.68%	1,691	41.51%	Indonesia	37	83.78%	24	50.00%
Switzerland	3,778	40.60%	1,230	40.57%	Russia	35	65.71%	20	60.00%
Italy	1,501	59.09%	725	12.83%	Korea (South)	30	26.67%	2	100.00%
Belgium	956	60.77%	423	28.13%	Mexico	28	42.86%	12	8.33%
Australia	887	51.97%	385	18.70%	United Arab Emirates	21	19.05%	3	0.00%
Norway	782	56.91%	348	36.21%	Egypt	16	43.75%	7	14.29%
Spain	745	43.76%	270	20.74%	Philippines	11	36.36%	4	75.00%
Taiwan	679	74.67%	372	43.82%	Tunisia	7	28.57%	1	0.00%
China	648	64.97%	363	19.83%	Chile	6	83.33%	3	0.00%
Ireland	621	59.74%	275	67.27%	Czech Republic	6	83.33%	2	0.00%
Austria	527	73.62%	273	77.66%	Zimbabwe	6	16.67%	0	N/A
Israel	422	64.22%	184	34.24%	Greece	5	60.00%	3	66.67%
Singapore	387	65.89%	213	47.89%	South Africa	5	40.00%	1	0.00%
Hong Kong	355	57.46%	148	45.27%	Turkey	5	80.00%	4	25.00%
Sweden	268	58.21%	132	10.61%	Hungary	4	50.00%	2	50.00%
Denmark	211	60.66%	111	7.21%	New Zealand	4	75.00%	3	33.33%
India	202	62.38%	109	61.47%	Nigeria	4	50.00%	2	50.00%
Finland	192	75.52%	106	43.40%	Pakistan	4	25.00%	1	100.00%
Bahrain	149	67.79%	83	54.22%	Bangladesh	2	100.00%	2	100.00%
Brazil	123	37.40%	41	26.83%	Cambodia	2	100.00%	2	100.00%
Jordan	78	57.69%	38	18.42%	Latvia	2	50.00%	1	0.00%
Thailand	77	46.75%	31	35.48%	Argentina	1	100.00%	0	N/A
Portugal	73	71.23%	46	47.83%	Macau, Honduras, Bermuda, Cyprus, Iceland, Netherlands Antilles, Dominican Republic, Panama, Peru, Qatar, Slovakia, Romania, Trinidad, and Tobago	33	0.00%	0	N/A

Table 3
Sample Distribution

		Full Sample		PPP Sample	
		# of Loans	% of Loans with PPPs	# of Loans	% of Loans with Accounting-based PPPs
Panel B: Sample Distribution by Industry					
SIC01–09	Agriculture, forestry, and fishing	130	39.23%	42	78.57%
SIC10–14	Mining	2,350	40.13%	458	49.56%
SIC15–17	Construction	597	36.52%	93	56.99%
SIC20–33	Non-durable goods manufacturing	8,089	40.82%	1,826	47.65%
SIC34–39	Durable goods manufacturing	8,584	38.36%	1498	50.00%
SIC40–42	Transportation	545	43.30%	113	42.48%
SIC44–49 (excluding SIC481, 491–494)	Unregulated utilities	2,438	35.73%	568	59.68%
SIC50–51	Wholesale trade	2,000	43.75%	348	51.15%
SIC52–59	Retail trade	3,590	41.62%	671	54.84%
SIC70–89	Services	6,860	39.30%	1164	69.24%
SIC91–99	Public administration	87	19.54%	14	0.00%
Panel C: Sample Distribution by Year					
1995		1,418	41.11%	217	51.15%
1996		1,863	39.40%	283	59.36%
1997		2,361	40.28%	361	57.89%
1998		2,112	46.54%	370	72.97%
1999		1,958	43.11%	358	63.41%
2000		1,882	39.53%	363	54.82%
2001		1,933	39.94%	404	46.53%
2002		1,905	40.37%	381	43.31%
2003		1,827	42.69%	407	59.21%
2004		1,924	47.87%	527	51.61%
2005		1,801	49.75%	487	50.10%
2006		1,699	46.50%	427	55.74%
2007		1,741	43.25%	440	56.14%
2008		930	48.39%	188	59.57%
2009		685	40.73%	112	53.57%
2010		1,042	37.33%	207	54.11%
2011		1,454	28.82%	230	45.65%
2012		1,231	35.91%	215	46.98%
2013		1,431	30.40%	241	58.92%
2014		1,352	28.77%	229	47.60%
2015		1,277	34.85%	204	41.67%
2016		1,168	17.89%	133	47.37%
2017		276	6.88%	11	27.27%

Notes: This table presents the sample distribution by lender country (Panel A), by industry (Panel B), and by year (Panel C).

Table 4
Summary Statistics

	Full Sample				*PPP Sample*			
Variable	*Mean*	*Median*	*Std.*	*N*	*Mean*	*Median*	*Std.*	*N*
PPP.Exist	0.397	0.000	0.489	35,270				
CovNo	1.583	2.000	1.567	35,270				
CovTight.P	0.220	0.086	0.277	17,832				
CovTight.DO	0.400	0.160	0.419	18,514				
PPP.AccNum					0.540	1.000	0.498	6,795
Foreign Lender	0.214	0.133	0.254	35,270	0.308***	0.318***	0.216	6,795
Foreign Lead	0.132	0.000	0.284	34,673	0.140**	0.000***	0.274	6,794
Foreign Parti	0.274	0.241	0.281	25,765	0.343***	0.333***	0.240	6,402
Firm Size ($m)	5,017	880	12,888	35,270	6,552***	2,322***	12,051	6,795
Leverage	0.311	0.284	0.224	35,270	0.348***	0.321***	0.195	6,795
Mar to book	1.755	1.462	0.990	35,270	1.694***	1.484***	0.766	6,795
Tangibility	0.309	0.241	0.237	35,270	0.325***	0.255***	0.235	6,795
Profitability	0.137	0.126	0.185	35,270	0.180***	0.145***	0.129	6,795
σ (Profitability)	0.053	0.017	0.152	35,270	0.024***	0.014***	0.034	6,795
CurRatio	1.974	1.639	1.341	35,270	1.738***	1.536***	0.920	6,795
IntCov	20.634	5.608	58.762	35,270	11.276***	5.901***	18.722	6,795
AQ	0.036	0.025	0.035	35,270	0.026***	0.020***	0.022	6,795
Relation	0.423	0.373	0.414	35,270	0.488***	0.500***	0.378	6,795
Maturity (month)	48.414	59.000	24.529	35,270	51.795***	60.000***	20.458	6,795
Loan Size ($m)	348	125	585	35,270	608***	310***	801	6,795
Revolver	0.641	1.000	0.480	35,270	0.740***	1.000***	0.439	6,795

Notes: This table reports the summary statistics of the full and PPP samples. *Firm Size*, *Maturity*, and *Loan Size* are reported without logs. The extreme values of all the continuous variables are winsorized at the 1st and 99th percentiles. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significant difference between the two samples at the 10 percent, 5 percent, and 1 percent levels, respectively, based on a two-tailed t-test (mean) and a Wilcoxon test (median).

Table 5
Pearson Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11
1. PPP.Exist											
2. CovNo	0.437***										
3. CovTight.P	-0.128***	0.072***									
4. CovTight.DO	-0.118***	0.329***	0.769***								
5. PPP.AccNum						-0.269***	0.030**	-0.278***	-0.546***	0.301***	-0.171***
6. Foreign Lender	0.042***	-0.137***	-0.070***	-0.134***			0.385***	0.910***	0.368***	-0.044***	0.032***
7. Foreign Lead	-0.071***	-0.099***	0.020**	-0.011		0.626***		0.088***	0.081***	0.020*	-0.025**
8. Foreign Parti	0.021***	-0.105***	-0.051***	-0.104***		0.883***	0.157***		0.354***	-0.046***	0.047***
9. Firm Size	0.009*	-0.312***	-0.119***	-0.242***		0.438***	0.185***	0.383***		-0.223***	-0.005
10. Leverage	-0.068***	-0.007	0.326***	0.279***		0.106***	0.093***	0.052***	0.107***		-0.095***
11. Mar to book	0.009	-0.049***	-0.147***	-0.191***		-0.003	-0.024***	0.037***	-0.052***	-0.176***	
12. Tangibility	0.008	-0.020***	0.066***	0.044***		0.088***	0.066***	0.054***	0.080***	0.216***	-0.127***
13. Profitability	0.091***	0.001	-0.172***	-0.186***		0.191***	0.093***	0.146***	0.288***	0.099***	0.039***
14. σ (Profitability)	-0.084***	-0.033***	0.124***	0.131***		-0.034***	0.021***	0.007	-0.201***	0.005	0.145***
15. CurRatio	0.002	0.053***	-0.165***	-0.103***		-0.127***	-0.058***	-0.116***	-0.205***	-0.280***	0.113***
16. IntCov	0.027***	0.000	-0.157***	-0.178***		-0.053***	-0.031***	-0.053***	-0.051***	-0.325***	0.232***
17. AQ	-0.060***	0.086***	0.113***	0.132***		-0.182***	-0.088***	-0.119***	-0.410***	-0.098***	0.136***
18. Relation	0.050***	-0.025***	-0.089***	-0.119***		0.068***	-0.055***	0.041***	0.225***	0.031***	-0.008
19. Maturity	0.120***	0.042***	-0.025***	-0.046***		0.062***	0.103***	-0.084***	0.060***	0.093***	-0.053***
20. Loan Size	0.158***	-0.189***	-0.154***	-0.262***		0.416***	0.154***	0.361***	0.770***	0.094***	0.008
21. Revolver	0.183***	0.014*	-0.074***	-0.078***		-0.007	-0.115***	0.063***	0.027***	-0.162***	0.046***

	12	13	14	15	16	17	18	19	20	21
5. PPP.AccNum	-0.006	-0.055***	0.110***	0.136***	-0.147***	0.128***	-0.100***	0.358***	-0.459***	-0.166***
6. Foreign Lender	0.044***	0.148***	0.037***	-0.148***	-0.013	-0.107***	0.011	-0.041***	0.339***	0.016
7. Foreign Lead	0.063***	0.080***	0.072***	-0.051***	0.007	-0.020*	-0.097***	0.062***	0.044***	-0.071***
8. Foreign Parti	0.032***	0.140***	0.037***	-0.145***	-0.016	-0.106***	0.018	-0.077***	0.334***	0.026**
9. Firm Size	-0.013	0.081***	-0.088***	-0.205***	0.047***	-0.230***	0.144***	-0.208***	0.722***	0.062***
10. Leverage	0.153***	0.126***	0.090***	-0.161***	-0.429***	-0.035***	-0.038***	0.127***	-0.193***	-0.123***
11. Mar to book	-0.123***	0.235***	-0.009	0.044***	0.330***	0.069***	0.024**	-0.067***	0.121***	-0.000
12. Tangibility		0.342***	0.251***	-0.286***	-0.110***	-0.149***	-0.009	-0.025**	0.016	0.059***
13. Profitability	0.243***		0.258***	-0.071***	0.104***	-0.176***	0.048***	0.031***	0.153***	-0.005
14. σ (Profitability)	0.088***	-0.457***		0.031***	-0.040***	0.084***	-0.054***	0.017	-0.070***	0.009
15. CurRatio	-0.293***	-0.085***	0.096***		0.149***	0.127***	-0.021*	0.072***	-0.151***	0.011
16. IntCov	-0.078***	0.101***	-0.049***	0.186***		0.043***	0.008	-0.039***	0.077***	0.014
17. AQ	-0.168***	-0.281***	0.218***	0.102***	0.025***		-0.050***	-0.020*	-0.180***	0.011
18. Relation	0.012**	0.109***	-0.094***	-0.051***	-0.022***	-0.116***		-0.041***	0.166***	0.061***
19. Maturity	0.026***	0.124***	-0.068***	0.020***	0.001	-0.140***	-0.022***		-0.071***	-0.145***
20. Loan Size	0.096***	0.302***	-0.175***	-0.147***	-0.020***	-0.352***	0.253***	0.164***		0.061***
21. Revolver	0.005	0.018***	-0.026***	0.025***	0.049***	0.017***	0.082***	-0.210***	0.093***	

Notes: This table presents the Pearson correlation coefficients among the variables used in the main tests. The lower diagonal refers to the full sample, whereas the upper diagonal refers to the PPP sample. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively (two-tailed).

Table 6
Foreign Lender and the Use of PPPs and Financial Covenants (Test of H1)

	CovNo	*CovNo*	*CovTight.P*	*CovTight.DO*	*PPP.Exist*					
									Low *Non-bank*	High *Non-bank*
	Poisson (1)	Poisson (2)	OLS (3)	OLS (4)	Logit (5)	Logit (6)	Linear probability (7)	Linear probability (8)	Logit (9)	Logit (10)
Foreign Lender	0.004	-0.008	-0.000	-0.012	0.258***	0.256**	0.059***	0.318***	-0.048	1.149***
	(0.11)	(-0.31)	(-0.02)	(-0.52)	(3.23)	(2.31)	(2.64)	(4.60)	(-0.50)	(8.18)
Low=High (Chi-squared, p-value)									0.000	
Firm Size	-0.131***	-0.050***	0.003	-0.006	-0.200***	-0.038	-0.037***	-0.255***	-0.255***	-0.154***
	(-13.72)	(-7.69)	(0.68)	(-0.94)	(-9.60)	(-1.36)	(-7.09)	(-3.45)	(-9.08)	(-5.54)
Leverage	-0.061	0.085***	0.378***	0.476***	-0.605***	-0.427***	-0.121***	-0.133	-0.606***	-0.664***
	(-1.45)	(3.11)	(18.72)	(16.61)	(-6.05)	(-3.37)	(-4.51)	(-0.49)	(-4.31)	(-5.00)
Mar to book	-0.029***	-0.027***	-0.020***	-0.058***	0.015	0.021	0.007	0.030	-0.018	0.071**
	(-3.79)	(-5.16)	(-6.54)	(-11.59)	(0.79)	(0.91)	(1.17)	(0.82)	(-0.73)	(2.45)
Tangibility	-0.096**	-0.085***	-0.038*	-0.090***	-0.089	0.011	-0.015	0.485	-0.214	0.019
	(-1.99)	(-2.64)	(-1.76)	(-2.94)	(-0.76)	(0.08)	(-0.48)	(1.06)	(-1.35)	(0.12)
Profitability	0.343***	0.181***	-0.242***	-0.293***	0.632***	0.483***	0.099**	0.065	0.689***	0.556***
	(5.81)	(4.66)	(-9.77)	(-7.89)	(4.68)	(2.83)	(2.12)	(0.20)	(3.94)	(2.96)
σ (Profitability)	-0.342***	-0.087**	0.061**	0.124***	-0.683***	-0.395**	-0.307***	-0.499	-0.734***	-0.703***
	(-4.56)	(-2.04)	(2.46)	(3.24)	(-4.12)	(-2.24)	(-4.43)	(-1.53)	(-3.16)	(-3.20)
CurRatio	-0.003	0.007*	-0.020***	-0.020***	-0.027*	-0.016	0.002	-0.026	-0.054***	-0.002
	(-0.48)	(1.81)	(-8.25)	(-5.08)	(-1.83)	(-0.92)	(0.48)	(-0.67)	(-2.76)	(-0.11)
IntCov	-0.000	-0.000	-0.000	-0.000***	0.000	0.000	0.000	0.000	0.000	0.000
	(-0.49)	(-0.01)	(-1.50)	(-4.46)	(0.48)	(1.09)	(0.63)	(0.32)	(0.17)	(0.54)
AQ	-0.775***	-0.637***	0.583***	0.372***	-2.829***	-3.289***	-0.686***	1.211	-2.740***	-3.109***
	(-3.62)	(-4.35)	(6.74)	(2.77)	(-5.05)	(-4.98)	(-4.09)	(1.08)	(-3.58)	(-4.06)
Relation	0.117***	0.077***	-0.033***	-0.030***	0.169***	0.116**	0.030**	-0.042	-0.036	0.431***
	(7.61)	(7.37)	(-5.32)	(-3.07)	(4.14)	(2.26)	(2.39)	(-0.89)	(-0.68)	(6.66)
Maturity	0.071***	0.051***	-0.004	-0.004	0.509***	0.720***	0.096***	0.053***	0.548***	0.462***
	(6.43)	(6.90)	(-1.00)	(-0.67)	(19.39)	(20.60)	(14.10)	(5.70)	(16.08)	(11.55)
Loan Size	0.052***	0.000	-0.012***	-0.022***	0.410***	0.391***	0.073***	0.007*	0.425***	0.398***
	(6.50)	(0.08)	(-4.23)	(-4.80)	(22.71)	(16.64)	(19.58)	(1.76)	(16.57)	(16.23)
Revolver	0.077***	-0.043***	-0.002	-0.004	0.950***	1.007***	0.142***	0.110***	0.683***	1.235***
	(7.03)	(-6.38)	(-0.46)	(-0.57)	(29.62)	(25.12)	(22.37)	(17.24)	(15.52)	(28.40)
Intercept	0.540***	0.946***	0.357***	0.863***	-3.327***	-3.695***	-0.042	1.666***	-3.286***	-3.746***
	(3.04)	(10.27)	(4.83)	(7.49)	(-11.88)	(-11.26)	(-0.58)	(2.83)	(-7.17)	(-9.62)

Credit Rating Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Loan Purpose Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Deal Fixed Effects	No	No	No	No	No	No	No	Yes	No	No
N	35,270	22,618	18,514	17,832	35,270	22,618	18,319	18,319	19,159	16,111
Pseudo/Adjusted R^2	0.118	0.059	0.253	0.252	0.168	0.187	0.194	0.747	0.171	0.201
Marginal Effect of *Foreign Lender*	0.006	-0.019			0.049	0.047			-0.009	0.210

Notes: This table presents the estimation results of the impact of the foreign lender percentage on the tightness of financial covenants (Columns (1)–(4)) and the likelihood of posting a PPP (Columns (5)–(10)) in a loan contract. In Columns (2) and (6), we exclude loans with neither covenants nor PPPs. In Columns (7) and (8), we only keep loans with multiple tranches. In Columns (9) and (10), the full sample is split into low and high subsamples by the median of the percentage of lenders in a loan that are not commercial banks (*Non-bank*). The F-test is used to test the statistical difference in the coefficients on *Foreign Lender* across the two subsamples, and the p-value is reported. The z-statistics/t-statistics reported in parentheses are based on standard errors corrected for heteroscedasticity and clustered by firm. The extreme values of all the continuous variables are winsorized at the 1st and 99th percentiles. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively (two-tailed).

Table 7
Foreign Lender and the Choice of Performance Measure in PPPs (Test of H2)

	Multinomial logit, full sample		Logit, PPP sample		Linear probability, PPP sample	
	PPP.CreRat	*PPP.AccNum*	*PPP.AccNum*	*PPP.AccNum*	*PPP.AccNum*	*PPP.AccNum*
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign Lender	0.947***	-0.034	-1.310***	-1.333***	-0.108***	-0.063*
	(5.93)	(-0.38)	(-3.98)	(-4.01)	(-3.58)	(-1.68)
Firm Size	-0.101*	-0.166***	-0.632***	-0.611***	-0.050***	-0.013
	(-1.87)	(-7.14)	(-5.60)	(-5.02)	(-4.95)	(-0.85)
Leverage	-1.126***	-0.543***	0.661	0.717	0.035	-0.014
	(-4.12)	(-5.09)	(1.37)	(1.46)	(0.96)	(-0.23)
Mar to book	0.162***	0.013	-0.427***	-0.427***	-0.033***	-0.014
	(3.40)	(0.63)	(-3.88)	(-3.89)	(-3.59)	(-1.08)
Tangibility	-0.097	-0.201	-0.330	-0.332	-0.031	0.035
	(-0.34)	(-1.57)	(-0.68)	(-0.68)	(-0.78)	(0.30)
Profitability	0.576	0.481***	-0.601	-0.689	-0.049	-0.064
	(1.55)	(3.00)	(-0.83)	(-0.91)	(-0.73)	(-0.63)
σ (Profitability)	-0.839	-1.075***	0.176	0.362	0.087	0.286
	(-1.14)	(-5.06)	(0.09)	(0.18)	(0.53)	(1.22)
CurRatio	-0.052	-0.019	0.129	0.129	0.012	0.016
	(-1.18)	(-1.19)	(1.40)	(1.41)	(1.45)	(1.46)
IntCov	-0.001	0.000	-0.005	-0.005	-0.001**	-0.001*
	(-0.96)	(0.82)	(-1.53)	(-1.52)	(-2.11)	(-1.91)
AQ	-4.110**	-2.954***	3.312	3.646	0.293	0.069
	(-2.50)	(-4.99)	(1.06)	(1.16)	(1.19)	(0.20)
Relation	0.067	0.240***	0.285*	0.273*	0.019	-0.006
	(0.80)	(5.36)	(1.78)	(1.67)	(1.42)	(-0.40)
Maturity	0.177***	0.722***	1.063***	1.016***	0.080***	0.049***
	(3.97)	(22.21)	(8.99)	(6.60)	(8.55)	(5.94)
Loan Size	0.665***	0.296***	-0.549***	-0.586***	-0.045***	-0.039***
	(18.51)	(14.50)	(-7.01)	(-5.53)	(-5.59)	(-5.32)
Revolver	0.682***	0.955***	0.145	0.061	0.004	0.007
	(9.04)	(27.79)	(1.24)	(0.28)	(0.37)	(0.74)
IMR				-0.156		
				(-0.47)		
Intercept	-8.243***	-3.750***	6.500***	8.600***	0.797***	0.466***
	(-14.11)	(-12.07)	(4.48)	(4.53)	(6.86)	(2.72)

Table 7
Foreign Lender and the Choice of Performance Measure in PPPs (Test of H2)

Credit Rating Fixed Effects		Yes		Yes	Yes	Yes	Yes
Loan Purpose Fixed Effects		Yes		Yes	Yes	Yes	Yes
Year Fixed Effects		Yes		Yes	Yes	Yes	Yes
Industry Fixed Effects		Yes		Yes	Yes	Yes	No
Firm Fixed Effects		No		No	No	No	Yes
N		35,270		6,795	6,795	6,795	6,795
Pseudo/Adjusted R^2		0.282		0.627	0.627	0.653	0.802
Marginal Effect of *Foreign Lender*	0.051		-0.016	-0.100	-0.102		

Notes: This table presents the estimation results of the relationship between the foreign lender percentage and trade-off between accounting ratios and credit ratings as the performance measure in PPPs. The z-statistics/t-statistics reported in parentheses are based on standard errors corrected for heteroscedasticity and clustered by firm. The extreme values of all the continuous variables are winsorized at the 1st and 99th percentiles. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively (two-tailed).

Table 8
Foreign Lead vs. Participant (Test of H3)

	PPP.Exist		*PPP.AccNum*					
	Full sample		PPP sample		PPP sample, control for foreign bank characteristics		Constrained PPP sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Foreign Lead	-0.378***		-0.352		-2.613		-0.320	
	(-5.76)		(-1.35)		(-1.10)		(-0.83)	
Foreign Parti		0.295***		-1.079***		-2.813**		-1.177***
		(3.80)		(-3.87)		(-2.33)		(-2.75)
Foreign Lead/Parti Size					0.378	0.114		
					(0.82)	(1.07)		
*Foreign Lead/Parti * Foreign Lead/Parti Size*					-0.221	-0.259		
					(-0.30)	(-1.16)		
Foreign Lead/Parti Leverage					0.387	0.035		
					(1.08)	(0.34)		
*Foreign Lead/Parti * Foreign Lead/Parti Leverage*					-1.366**	-0.188		
					(-2.55)	(-0.80)		
Foreign Lead/Parti ROA					0.201	-0.099		
					(0.52)	(-0.99)		
*Foreign Lead/Parti * Foreign Lead/Parti ROA*					0.176	0.278		
					(0.26)	(1.36)		
Foreign Lead/Parti Tier 1					-1.119**	-0.097		
					(-2.52)	(-0.89)		
*Foreign Lead/Parti * Foreign Lead/Parti Tier 1*					2.532***	0.337		
					(2.78)	(1.52)		
Intercept, Controls, and Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	34,673	25,765	6,794	6,402	455	2,856	2,816	2,816
Pseudo R^2	0.172	0.167	0.624	0.635	0.725	0.681	0.633	0.635
Marginal Effect of *Foreign Lead/Parti*	-0.072	0.058	-0.027	-0.081	0.020	-0.137	-0.024	-0.089

Notes: This table compares the effects of foreign lead and participant percentage. Columns (5) and (6) control for foreign bank characteristics. We take the decile ranks of these additional control variables and transform them into a range between 0 and 1. Columns (7) and (8) are based on the constrained PPP sample, which only includes loans with participant lenders that have served as lead arrangers in other loans of the sample. The intercept, controls, and fixed effects are included as in Column (3) of Table 7 but not reported. The z-statistics reported in parentheses are based on standard errors corrected for heteroscedasticity and clustered by firm. The extreme values of all the continuous variables are winsorized at the 1st and 99th percentiles. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively (two-tailed).

Table 9
Split-sample Analyses (Additional Test)

	Dependent Variable: PPP.AccNum					
Panel A: Foreign Participant Lenders' Information Disadvantage						
	Info Asymmetry		*Familiarity*		*Distance*	
	Low	High	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign Parti	-0.443	-1.648***	-2.007***	-0.687	-1.403***	-3.199***
	(-1.24)	(-3.36)	(-4.84)	(-1.07)	(-3.31)	(-4.05)
Low=High (Chi-squared, p-value)	0.040		0.077		0.038	
Intercept, Controls, and Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	3,926	2,410	3,101	2,129	3,615	1,512
Pseudo R^2	0.632	0.687	0.630	0.696	0.652	0.699
Marginal Effect of *Foreign Parti*	-0.034	-0.105	-0.155	-0.042	-0.101	-0.195

Panel B: Agency Issues between Leads and Foreign Participants								
	Lead Share		*Lead Reputation*		*Lead-Foreign Parti Relation*		*Foreign Lead Dummy*	
	Low	High	Zero	One	Low	High	Zero	One
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Foreign Parti	-1.910**	-1.089*	-1.443**	-1.034***	-1.438***	-1.652***	-1.415***	-0.084
	(-2.28)	(-1.82)	(-1.98)	(-3.15)	(-3.12)	(-3.22)	(-4.30)	(-0.15)
Low=High (Chi-squared, p-value)	0.407		0.479		0.531		0.040	
Intercept, Controls, and Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1,610	1,352	1,369	5,033	2,601	2,585	4,791	1,611
Pseudo R^2	0.679	0.704	0.696	0.632	0.633	0.680	0.666	0.592
Marginal Effect of *Foreign Parti*	-0.120	-0.064	-0.081	-0.079	-0.109	-0.108	-0.097	-0.007

Notes: This table presents the estimation results of the relationship between the foreign participant percentage and trade-off between accounting ratios and credit ratings as the performance measure in PPPs, conditional on foreign participants' information risk (Panel A) and the agency issues between leads and foreign participants (Panel B). Foreign participants' information risk is proxied by the borrower firm's information asymmetry (Panel A Columns (1) and (2)), foreign participants' familiarity with the U.S. market (Panel A Columns (3) and (4)), and foreign participants' distance from the borrower (Panel A Columns (5) and (6)). The agency issues between leads and foreign participants are captured by leads' share of the loan (Panel B Columns (1) and (2)), leads' reputation (Panel B Columns (3) and (4)), the prior relationship between leads and foreign participants (Panel B Columns (5) and (6)), and the existence of foreign lead arrangers (Panel B Columns (7) and (8)). The PPP sample is split into low and high subsamples by the median of the conditional variables or zero and one subsamples when the conditional variables are dummy variables. The F-test is used to test the statistical difference in the coefficients on *Foreign Parti* across the two subsamples, and the p-value is reported. The intercept, controls, and fixed effects are included as in Column (3) of Table 7 but not reported. The z-statistics reported in parentheses are based on standard errors corrected for heteroscedasticity and clustered by firm. The extreme values of all the continuous variables are winsorized at the 1st and 99th percentiles. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively (two-tailed).

Table 10
Instrumental Variable Regression (Robustness Test)

	Foreign Parti	*PPP.AccNum*
	(1)	(2)
Foreign Parti		-0.492*
		(-1.84)
Foreign Parti (IV)	0.335***	
	(6.27)	
Intercept, Controls, and Fixed Effects	Yes	Yes
N	6,795	6,795
Cragg–Donald Wald F		89.113
Stock–Yogo critical value		16.38
Kleibergen–Paap rk F		32.420

Notes: This table presents the 2SLS estimation results of the relationship between the foreign participant percentage and trade-off between accounting ratios and credit ratings as the performance measure in PPPs. The instrumental variable used is the average foreign participant percentage by industry (two-digit SIC code) and year, using all loans issued to U.S. public borrowers excluding the current loan. Column (1) shows the first-stage estimates and Column (2) shows the second-stage estimates. We report the Cragg–Donald test statistic and the critical value based on Stock and Yogo (2005) as well as the Kleibergen–Paap rk LM statistic to assess whether the instrument used is relevant. The intercept, controls, and fixed effects are included as in Column (3) of Table 7 but not reported. The t-statistics reported in parentheses are based on standard errors corrected for heteroscedasticity and clustered by firm. The extreme values of all the continuous variables are winsorized at the 1st and 99th percentiles. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively (two-tailed).

Table 11
Other Robustness Tests

	Dependent Variable: PPP.AccNum						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Foreign Parti	-1.671***	-1.833**	-1.695***	-1.151***	-0.796**	-1.151***	-1.442***
	(-4.82)	(-2.50)	(-2.65)	(-4.01)	(-2.09)	(-3.30)	(-4.67)
PPP.AccNum.Pre					3.307***		
					(14.60)		
IntSpread							1.010***
							(5.05)
Secured							1.554***
							(8.44)
LenderNo							3.568
							(1.64)
Log(1+CovNo)							0.755***
							(3.52)
Intercept, Controls, and Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	5,224	2,487	1,076	4,820	4,090	3,456	5,485
Pseudo R^2	0.645	0.653	0.690	0.643	0.738	0.625	0.670
Marginal Effect of *Foreign Parti*	-0.123	-0.121	-0.094	-0.084	-0.041	-0.087	-0.095

Notes: This table reports the results of the other robustness tests: excluding loans without foreign participants (Column (1)), the foreign participant percentage calculated based on the loan amount (Column (2)), only including loans with non-relationship participants (foreign or domestic) (Column (3)), only including the largest tranche in each deal (Column (4)), controlling for the PPP performance measure adopted in the borrower's previous loan (Column (5)), excluding loans involving Canadian participants (Column (6)), and controlling for other loan terms (Column (7)). The intercept, controls, and fixed effects are included as in Column (3) of Table 7 but not reported. The z-statistics reported in parentheses are based on standard errors corrected for heteroscedasticity and clustered by firm. The extreme values of all the continuous variables are winsorized at the 1st and 99th percentiles. Table 1 provides the definitions and measurements of the variables. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively (two-tailed).