

Internet Appendix for "Relationship bank behavior during borrower distress"

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This appendix provides derivations, estimation details, and results that supplement the analysis in the main article.

I. Total Borrowing Cost

Berg, Saunders, and Steffen (2016) suggest that fees are an important part of corporate loan contracts and propose the Total Cost of Borrowing (TCB) as an alternative to the all-in-drawn-spread in future research exploring the cost of loans. As defined in their paper, Total Cost of Borrowing incorporates the price options embedded in loan contracts as well as screen borrowers on their likelihood of exercising these options. Specifically, it is estimated as follow: $TCB = UpfrontFee/ExpectedLoanMaturityinYears + (1 - PDD) \times (FacilityFee + CommitmentFee) + PDD \times (FacilityFee + Spread) + PDD \times Prob(Utilization > UtilizationThreshold|Usage > 0) \times UtilizationFee + Prob(Cancellation) \times CancellationFee$, where PDD, the probability of drawdown, is the ex-ante probability that the credit facility is going to be drawn down. The spread, the facility fee, the commitment fee, and the utilization fee are annual cost measures as well, while the upfront and the cancellation fees are one-time fees and need to be annualized. We obtain the measure dataset directly from one of the author’s website, <http://www.tobias-berg.com/index.php/research/>, in which it provides the TCB and the matching variable (facility ID) to the Dealscan. The TCB results are qualitatively the same to that in our main specification.

II. Rolling past 12 monthly EDF to define distress status

The procedure to categorize a firm as being in distress in a given month is as follows: For each month in the year, the EDF of the firm is computed using the Moody’s-KMV implementation of Merton’s model. We count the number of months that the firm’s EDF lies in the top 10% of the EDF for all CRSP-Compustat firms for all years in our sample.

If the number of months that the firm’s EDF is in the top decile of default probabilities is greater than or equal to six in the past 12 months, we classify the firm as being distressed in the given month. A loan facility with a starting date in a distress month is classified as a distressed loan.

III. Alternative measures of firm distress and relationship banking

We use different measures for distress and relationship to do the same analysis using the same specification in Table 3 in the paper. We use a different cutoff point for the EDF percentiles (using top 30%), or using negative cash flow to identify distress. With all these two different measures, the results are essentially unchanged (Table 3). Similarly, using relationship measures based on 3 year window, we get consistent results. We also add additional controls in terms of syndicate structure and find similar results. Lastly, we also use only the sub-sample of distressed firms as the base sample and find similar results.

IV. Credit line and term loans

We investigate whether there is any difference between line of credit and term loans. Recent research documents increased corporate use of credit lines during financial crisis and credit line is important for corporate policy (Campello, Giambona, Graham, and Harvey, 2011; Campello, Graham, and Harvey, 2010). This suggests that firms in distress or banks having relationship borrowers may behave differently when pricing term loans versus lines of credit. In particular, given the option of changes in borrower credit quality, the results may be driven by changes in the behavior of lines of credit. Motivated by the above, we investigate if our results differ for lines of credit and term loans in distress. The result holds for both the lines of credit and term loans. The result is reported in Table 4.

V. Systemically Important Banks

One possibility is that lender heterogeneity drives our results. While we will have a formal matching test for this later, here, we investigate informally by examining if our results differ for systemically important banks and other banks. It is possible that large systemically important banks may value relationships less, due to their high reputation in other markets. To test this, we hand-collect the systematically important banks list from the website of the Financial Stability Board¹ and track back the bank history based on the parent code of the bank. If the lead bank of the loan is a systematically important bank (SIB), then the loan is defined as a SIB loan.² The results are reported in Table 5. Relationship loans and outside loans in distress are similar, regardless whether the bank is a SIB or not.

VI. Excluding technical default firms

We test whether the pattern in fees is a result of technical default prior to distress. We use the covenant violation (Roberts and Sufi, 2009) as the measure for technical default.³ The sample period is from 1996 to 2011. We exclude those firms that experienced a technical default within the (-2,+2) year window relative to the distress period. The results are reported in Table 6. The results are qualitatively similar after excluding the violation sample.

¹http://www.financialstabilityboard.org/wp-content/uploads/r_111104bb.pdf?page_moved=1

²Based on the Financial Stability Board web site, the following is the list of the systematically important banks as of 4 November, 2011: Bank of America; Bank of China; Bank of New York Mellon; Banque Populaire CdE; Barclays; BNP Paribas; Citigroup; Commerzbank; Credit Suisse; Deutsche Bank; Dexia; Goldman Sachs; Group Credit Agricole; HSBC; ING Bank; JP Morgan Chase; Lloyds Banking Group; Mitsubishi UFJ FG; Mizuho FG; Morgan Stanley; Nordea; Royal Bank of Scotland; Santander; Societe Generale; State Street; Sumitomo Mitsui FG; UBS; Unicredit Group; Wells Fargo.

³The dataset is directly from Professor Michael R. Roberts' website. <http://finance.wharton.upenn.edu/~mrrobert/styled-9/styled-11/index.html>

VII. Firm-year fixed effect

We report the result for estimation with firm-year fixed effects in Table 7. Since controlling firm-year fixed effects requires the firms to have more than one loan in a year, the sample size decreases dramatically. The fee results are unchanged, while the collateral requirement for relationship loans in distress increases with this specification. As mentioned before, we do not find fully consistent results for collateral - insignificant in some cases, and significantly negative in others. Here, we find an opposite results, further reinforcing the lack of a consistent pattern.

VIII. Unobservable lender heterogeneity

The previous sections on propensity score matching and instrumental variables focused on differences in borrower types of relationship and non-relationship loans in distress. Ioannidou and Ongena (2010) highlight that differences in loan contracts can also arise due to lender heterogeneity. To investigate if lender heterogeneity impacts our results, we employ a matching strategy similar to that employed by them. The matching strategy is as follows. First, we match each relationship loan to a non-relationship loan. We require both loans to have the same lender, same distress status, same collateralization status, and a maturity difference of less than one year. Second, we calculate the difference between the loan fee of each relationship loan and the matched non-relationship loan, $fee_{Rel} - fee_{non-rel}$. Third, we regress this difference of fees on a constant, distress status and a list of *differences* of firm characteristics between the matched sample observations as controls. A negative and statistically significant constant term suggests that the loan fees of relationship loans are lower than the fees on comparable non-relationship loans. For examining the difference between relationship and outside loans in distress, we test whether the sum of the constant term and distress dummy is statistically significantly different from zero or not.

Panel A of Table 8 reports the regression result after controlling for the differences in firm

characteristics across the matched loans. Model 1 shows that the difference in the normal period continues to be significant. Model 2 and Model 3 use the distress sub-sample and the entire sub-sample, respectively. Both models show a strong positive effect of the impact of the relationship on fees after the onset of distress - the magnitude of the difference is quite large - over 90 basis points in some cases. One factor that does limit the applicability of this analysis is that the set of loans that can be matched is much smaller than the total number. In particular, only 391 loans can be matched relative to the total number of 1970 loans in distress.

In Panel B of Table 8 , we repeat the process of matching, for examining differences in collateral. Here, we follow a similar procedure of matching a relationship loan to a non-relationship loan, based on the same lender, with a maturity of within one year for the two loans, and a loan rates difference of less than 100 basis points.⁴ After this matching, the difference in collateral for the two matched samples is tabulated. A difference of -1 in this table implies that the relationship loan was not collateralized whereas the matched loan was, a difference of zero implies that both the relationship and the non-relationship loan had the same collateral status and a difference of 1 implies that the relationship loan was collateralized while the matched loan was not. We use the sign test to examine the equality of matched pairs of observations. The null hypothesis is that the median of the difference between the matched pairs is zero. This test suggests that the differences in collateral are significantly negative in normal times, but not in distress. Thus, at least based on this matched sample, both the fee and collateral discounts given by relationship banks during normal times are not given in distress. As before, the total number of loans that can be matched is somewhat small.⁵

⁴We use this fairly large range of 100 basis points for the loan rates, as the sample size for the matched loans reduces dramatically with a smaller range of fees.

⁵Due to the small number of observations, we do not perform a multivariate regression for the collateral requirement.

References

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Table 1: Relationship lending during distress: Total Borrowing Cost

This table reports multivariate regression results of the impact of lending relationships on Total Borrowing Cost (TBC) as defined in Berg et al. (2016). Total cost of borrowing incorporates the price options embedded in loan contracts as well as screen borrowers on their likelihood of exercising these options. The sample period is from 1986 to 2011. *RELLOAN* is a dichotomous variable that takes a value of 1 if the lead bank in the given loan facility had a prior lending relationship with the borrowing firm based on loans taken by the firm in the five years prior to the current loan. *RELLOANDOL* and *RELLOANNUM* are computed using the dollar value (number) fraction of loans that go to a given lender relative to the total value (number) of loans taken by the borrower, also in the five-year window prior to the current loan date. Distress is a dummy variable that equals 1 if the loan is issued during the year the firm is in distress. All regressions use fixed effects for firms, ratings, loan type, loan distribution method and year. See Appendix C in the paper for a detailed definition of all variables used in this table. Numbers in parentheses are standard errors clustered at the firm level (***) significant at the 1% level, ** significant at the 5% level, * significant at the 10% level).

| | TBC | TBC | TBC |
|--|--------------------|--------------------|--------------------|
| RELLOAN | -9.11*** (1.85) | | |
| DISTRESS * RELLOAN | 18.5 (14.3) | | |
| RELLOANDOL | | -10.4*** (1.98) | |
| DISTRESS * RELLOANDOL | | 13.6 (15.5) | |
| RELLOANNUM | | | -10.6*** (2.00) |
| DISTRESS * RELLOANNUM | | | 12.3 (15.6) |
| DISTRESS | 43.8*** (12.1) | 48.3*** (11.8) | 49.2*** (11.7) |
| COVENANT | 1.71*** (0.28) | 1.70*** (0.28) | 1.69*** (0.28) |
| LEVERAGE | 41.3*** (9.28) | 40.8*** (9.25) | 40.8*** (9.25) |
| MARKET_TO_BOOK | -4.43*** (0.88) | -4.40*** (0.88) | -4.41*** (0.89) |
| TANGIBILITY | -8.96 (11.7) | -9.20 (11.6) | -9.38 (11.7) |
| PROFITABILITY | -54.1*** (9.83) | -53.9*** (9.86) | -54.0*** (9.86) |
| LN(TOTAL_ASSET) | -11.4*** (1.76) | -11.4*** (1.76) | -11.4*** (1.76) |
| CURRENT_RATIO | -0.61 (0.61) | -0.62 (0.61) | -0.63 (0.62) |
| COVERAGE_RATIO | -9.33*** (1.43) | -9.22*** (1.44) | -9.20*** (1.44) |
| CONSTANT | 376.2*** (11.5) | 376.5*** (11.4) | 376.7*** (11.5) |
| <i>N</i> | 18380 | 18380 | 18380 |
| adj. <i>R</i> ² | 0.552 | 0.552 | 0.552 |
| F-test (Chi-square test) for net effect of relationships in distress | 0.43 | 0.042 | 0.011 |

Table 2: Relationship lending during distress: rolling distress using past 12 monthly EDF

This table reports multivariate regression results of the impact of lending relationships on fees and collateral, using rolling past 12 monthly EDF to define distress status. The procedure to categorize a firm as being in distress in a given month using rolling window is as follows: For each month in the year, the EDF of the firm is computed using the Moody's-KMV implementation of Merton's model. We count the number of months that the firm's EDF lies in the top 10% of the EDF for all CRSP-Compustat firms for all years in our sample. If the number of months that the firm's EDF is in the top decile of default probabilities is greater than or equal to six in the past 12 months, we classify the firm as being ROLLING-DISTRESS in the given month. A loan facility with a starting date in a distress month is classified as a distressed loan. All firm characteristics as those in Table 3 in the paper are included in the empirical estimation but not reported to conserve space. All regressions use fixed effects for firms, ratings, loan type, loan distribution method and year. See Appendix C in the paper for a detailed definition of all variables used in this table. Numbers in parentheses are standard errors clustered at the firm level (***) significant at the 1% level, ** significant at the 5% level, * significant at the 10% level).

| | FEE | FEE | FEE | COLLATERAL | COLLATERAL | COLLATERAL |
|------------------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| RELLOAN | -11.1*** (2.15) | | | -0.28*** (0.055) | | |
| ROLLING-DISTRESS * RELLOAN | 19.8* (11.0) | | | -0.42** (0.21) | | |
| RELLOANDOL | | -13.4*** (2.30) | | | -0.43*** (0.059) | |
| ROLLING-DISTRESS* RELLOANDOL | | 24.5*** (11.8) | | | -0.46*** (0.22) | |
| RELLOANNUM | | | -12.5*** (2.34) | | | -0.38*** (0.060) |
| ROLLING-DISTRESS* RELLOANNUM | | | 25.0** (12.0) | | | -0.51** (0.22) |
| ROLLING-DISTRESS | 66.6*** (8.77) | 66.1*** (8.53) | 66.1*** (8.60) | 0.71*** (0.17) | 0.68*** (0.17) | 0.70*** (0.17) |
| <i>N</i> | 27022 | 27022 | 27022 | 15858 | 15858 | 15858 |
| adj. <i>R</i> ² | 0.271 | 0.271 | 0.271 | 0.244 | 0.228 | 0.227 |
| Ftest | 0.63 | 0.91 | 1.11 | 12.1*** | 17.4*** | 16.8*** |

Table 3: Different measures of firm distress and relationship banking

This table reports the results for different measures of distress and relationships. FEE is defined as the All-in-drawn spread from the LPC Dealscan database. COLLATERAL is a dichotomous variable that takes a value of 1 if the loan is classified as "secured" in the database and 0 otherwise. Relloan is a dichotomous variable that takes a value of 1 if the lead bank in the given loan facility had a prior lending relationship with the borrowing firm based on loans taken by the firm in the 5 years prior to the current loan. The models are estimated using Panel OLS for Fee and using the logistic model for COLLATERAL. All firm characteristics as those in Table 3 in the paper are included in the empirical estimation but not reported to conserve space. All regressions use fixed effects for firms, ratings, loan type, loan distribution method and year. In Panel A, column 1 & 2 use 70 percentile as the cutoff to define distress sample; column 3 & 4 use negative operating cash flow to define distress firms; column 5 & 6 use 3-year window to define the relationship banks. In Panel B, column 1 & 2 add syndicate structure (number of lead banks and number of lenders) as additional controls and column 3 & 4 only use the set of firms experienced distress in our sample period. See Appendix C in the paper for a detailed definition of all variables. Numbers in parentheses are standard errors corrected for heteroscedasticity and clustered at the firm level (** significant at the 1% level, * significant at the 5% level, * significant at the 10% level).

| Panel A: Alternative measures of distress | | | | | |
|--|----------------------------------|---------------------|---------------------|---------------------|--------------------|
| | EDF 70th percentile cutoff-point | | Negative Cash Flow | | |
| | FEE | COLLATERAL | FEE | COLLATERAL | COLLATERAL |
| DISTRESS | 40.8*** (4.71) | 0.51*** (0.095) | 5.85 (5.17) | 0.11 (0.12) | |
| RELLOAN | -11.6*** (2.20) | -0.32*** (0.060) | -10.3*** (2.34) | -0.30*** (0.056) | |
| DISTRESS×RELLOAN | 12.2** (4.89) | 0.051 (0.11) | 7.67 (5.60) | -0.050 (0.15) | |
| F-test | 0.018 | 7.39*** | 0.24 | 6.65*** | |
| Panel B: Alternative measures of relationship loan, additional controls, and subsample | | | | | |
| | 3-Year Relationship | | Syndicate structure | | Distressed sample |
| | FEE | COLLATERAL | FEE | COLLATERAL | |
| DISTRESS | 66.7*** (7.72) | 0.56*** (0.15) | 63.8*** (8.62) | 0.66*** (0.16) | 0.68*** (0.18) |
| RELLOAN | -7.91*** (1.84) | -0.20*** (0.051) | -7.79*** (2.06) | -0.30*** (0.055) | -0.48*** (0.12) |
| DISTRESS×RELLOAN | 12.9 (10.1) | 0.11 (0.19) | 16.3 (10.7) | -0.085 (0.20) | -0.11 (0.23) |
| F-test | 0.24 | 0.24 | 0.62 | 3.77* | 8.51*** |

Table 4: Relationship lending spread during distress: credit line vs. term loan

This table reports multivariate regression results of the impact of lending relationships on fees for credit line and term loan. The sample period is from 1986 to 2011. *FEE* is defined as the All-in-drawn spread from the LPC DealScan database. Distress is a dummy variable that equals 1 if the loan is issued during the year the firm is in distress. *RELLOAN* is a dichotomous variable that takes a value of 1 if the lead bank in the given loan facility had a prior lending relationship with the borrowing firm based on loans taken by the firm in the five years prior to the current loan. *RELLOANDOL* and *RELLOANNUM* are computed using the dollar value (number) fraction of loans that go to a given lender relative to the total value of loans taken by the borrower, also in the five-year window prior to the current loan date. The models are estimated using Panel OLS. All firm characteristics as those in Table 3 in the paper are included in the empirical estimation but not reported to conserve space. All regressions use fixed effects for firms, ratings, loan type, loan distribution method and year. See Appendix C for a detailed definition of all variables used in this table. Numbers in parentheses are standard errors clustered at the firm level (***) significant at the 1% level, ** significant at the 5% level, * significant at the 10% level).

| | Credit Line | | Term Loan | |
|---|-------------------|-----------------------|--------------------|----------------------|
| | FEE | COLLATERAL | FEE | COLLATERAL |
| RELLOAN | -2.99* (1.74) | -0.030*** (0.0076) | -14.5*** (4.82) | -0.055*** (0.018) |
| DISTRESS×RELLOAN | 9.25 (9.30) | -0.0017 (0.028) | 17.5 (19.8) | -0.034 (0.051) |
| DISTRESS | 59.9*** (7.09) | 0.067*** (0.021) | 70.8*** (16.1) | 0.10** (0.040) |
| N | 17961 | 17961 | 9433 | 9433 |
| adj./Pseudo R^2 | 0.34 | 0.37 | 0.20 | 0.23 |
| F-test for net effect of relationships in distress | 0.46 | 1.37 | 0.023 | 3.41* |

Table 5: Relationship lending during distress: Systemically Important Banks vs. others

This table reports multivariate regression results of the impact of lending relationships on fees for Systematically Important Banks (SIB). The sample period is from 1986 to 2011. FEE is defined as the All-in-drawn spread from the LPC DealScan database. Distress is a dummy variable that equals 1 if the loan is issued during the year the firm is in distress. *RELLOAN* is a dichotomous variable that takes a value of 1 if the lead bank in the given loan facility had a prior lending relationship with the borrowing firm based on loans taken by the firm in the five years prior to the current loan. *RELLOANDOL* and *RELLOANNUM* are computed using the dollar value (number) fraction of loans that go to a given lender relative to the total value of loans taken by the borrower, also in the five-year window prior to the current loan date. SIB list is from the website of the Financial Stability Board. If the lead bank of the loan is a SIB, then the loan is defined as a SIB loan. The models are estimated using Panel OLS. All firm characteristics as those in Table 3 in the paper are included in the empirical estimation but not reported to conserve space. All regressions use fixed effects for firms, ratings, loan type, loan distribution method and year. See Appendix C for a detailed definition of all variables used in this table. Numbers in parentheses are standard errors clustered at the firm level (** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level).

| | SIB | | Others | |
|---|-------------------|---------------------|-------------------|-----------------------|
| | FEE | COLLATERAL | FEE | COLLATERAL |
| RELLOAN | -7.56** (3.43) | -0.017* (0.0096) | -5.68** (2.71) | -0.029*** (0.0084) |
| DISTRESS×RELLOAN | -9.04 (27.5) | -0.032 (0.040) | 2.71 (13.9) | 0.037 (0.028) |
| DISTRESS | 95.7*** (26.0) | 0.098*** (0.036) | 62.5*** (9.57) | 0.063*** (0.020) |
| N | 12725 | 12725 | 14669 | 14669 |
| adj./Pseudo R^2 | 0.34 | 0.39 | 0.22 | 0.28 |
| F-test for net effect of relationships in distress | 0.37 | 1.57 | 0.046 | 0.078 |

Table 6: Time pattern of relationship lending around distress: excluding technical default sample

This table reports the time pattern of relationship lending around the distress. We exclude those sample that are experiencing technical default and distress at the same time or overlap within the (-2,+2) window. The sample period is from 1996 to 2011. FEE is defined as the All-in-drawn spread from the LPC DealScan database. COLLATERAL is a dichotomous variable that takes a value of 1 if the loan is classified as "secured" in the database and 0 otherwise. Relloan is a dichotomous variable that takes a value of 1 if the lead bank in the given loan facility had a prior lending relationship with the borrowing firm based on loans taken by the firm in the five years prior to the current loan. Distress is a dummy variable that equals 1 if the loan is issued during the year the firm is in distress. T-1 (T-2) is an indicator variable for 1 (2) year(s) before the distress. T+1 (T+2) is an indicator variable for 1 (2) year(s) after distress. The models are estimated using Panel OLS for Fee and using the logistic model for Collateral. All firm characteristics as those in Table 3 in the paper are included in the empirical estimation but not reported to conserve space. All regressions use fixed effects for firms, ratings, loan type, loan distribution method and year. See Appendix C for a detailed definition of all variables used in this table. Numbers in parentheses are standard errors clustered at the firm level (***) significant at the 1% level, ** significant at the 5% level, * significant at the 10% level).

| | FEE | COLLATERAL |
|---|--------------------|---------------------|
| RELLOAN | -8.15*** (2.22) | -0.22*** (0.066) |
| DISTRESS×RELLOAN | 7.20 (13.9) | 0.033 (0.27) |
| DISTRESS | 74.3*** (12.6) | 0.58** (0.23) |
| T+1 | 16.8 (20.0) | 0.58 (0.60) |
| T+2 | 56.1*** (17.9) | -0.28 (0.68) |
| T-1 | 32.7* (18.5) | 0.058 (0.36) |
| T-2 | 15.9 (15.3) | -0.16 (0.36) |
| T+1×RELLOAN | 26.6 (23.4) | -0.13 (0.66) |
| T+2×RELLOAN | -1.84 (23.8) | 1.23 (0.78) |
| T-1×RELLOAN | -17.8 (21.5) | 0.53 (0.46) |
| T-2×RELLOAN | -1.61 (19.9) | -0.14 (0.46) |
| N | 20445 | 11287 |
| adj. R^2 | 0.32 | |
| Pseudo R^2 | | 0.22 |
| F-test (Chi-square test) for net effect | | |
| Relationship in T-2 | 0.24 | 0.60 |
| Relationship in T-1 | 1.48 | 0.48 |
| Relationship in distress | 0.0048 | 0.50 |
| Relationship in T+1 | 0.63 | 0.28 |
| Relationship in T+2 | 0.18 | 1.70 |

Table 7: Relationship lending during distress: firm-year fixed effect model

This table reports multivariate regression results of the impact of lending relationships on fees and collateral, controlling for firm-year fixed effect. The sample period is from 1986 to 2011. FEE is defined as the All-in-drawn spread from the LPC DealScan database. COLLATERAL is a dichotomous variable that takes a value of 1 if the loan is classified as "secured" in the database and 0 otherwise. RELLOAN is a dichotomous variable that takes a value of 1 if the lead bank in the given loan facility had a prior lending relationship with the borrowing firm based on loans taken by the firm in the five years prior to the current loan. Distress is a dummy variable that equals 1 if the loan is issued during the year the firm is in distress. The models are estimated using Panel OLS for FEE and using the logistic model for COLLATERAL. All regressions use fixed effects for firm-year, ratings, loan type, loan distribution method. See Appendix C for a detailed definition of all variables used in this table. Numbers in parentheses are standard errors clustered at the firm level (***) significant at the 1% level, ** significant at the 5% level, * significant at the 10% level).

| | FEE | FEE | COLLATERAL | COLLATERAL |
|--|--------------------|--------------------|--------------------|--------------------|
| RELLOAN | -14.2*** (4.82) | -14.5** (6.26) | -0.023 (0.14) | -0.029 (0.17) |
| DISTRESS×RELLOAN | -21.8 (24.1) | -29.6 (29.2) | 1.05* (0.55) | 1.49** (0.61) |
| COLLATERAL | 1.77 (6.50) | 0.72 (8.50) | | |
| LN(MATURITY) | -13.6*** (2.20) | -14.1*** (2.91) | 0.47*** (0.079) | 0.57*** (0.092) |
| COVENANT | 0.010 (0.79) | -0.36 (0.95) | 0.30*** (0.023) | 0.32*** (0.027) |
| LEVERAGE | 14.5 (46.8) | 31.4 (63.7) | 3.31** (1.47) | 0.66 (1.87) |
| MARKET_TO_BOOK | -4.73 (3.73) | -5.10 (4.58) | 0.27 (0.22) | -0.083 (0.26) |
| TANGIBILITY | -57.6 (74.4) | -31.3 (88.4) | -4.19** (2.13) | -4.01 (3.03) |
| PROFITABILITY | -3.45 (69.7) | -49.5 (108.7) | -6.11* (3.36) | -7.40 (4.51) |
| LN(TOTAL_ASSET) | -5.13 (12.4) | 0.97 (14.2) | -0.67 (0.45) | -1.38** (0.55) |
| CURRENT_RATIO | 0.82 (0.61) | 0.64 (0.66) | -0.092 (0.13) | -0.074 (0.17) |
| COVERAGE_RATIO | 2.26 (7.03) | 1.32 (7.91) | 0.60* (0.31) | 0.89** (0.42) |
| CONSTANT | 318.8*** (42.7) | 336.8*** (48.4) | | |
| Number of loans in a year > 2 | No | Yes | No | Yes |
| N | 27394 | 8470 | 2834 | 2170 |
| adj. R^2 | 0.084 | 0.094 | | |
| Pseudo R^2 | | | 0.24 | 0.27 |
| F-test (Chi-square test) for net effect of relationships in distress | 2.33 | 2.36 | 3.80* | 6.41** |

Table 8: Lender matching

This table reports the results of lender matching. The sample period is from 1986 to 2011. FEE is defined as the All-in-drawn spread from the LPC DealScan database. COLLATERAL is a dichotomous variable that takes a value of 1 if the loan is classified as "secured" in the database and 0 otherwise. The models are estimated using Panel OLS for Fee and using the logistic model for Collateral. All firm characteristics as those in Table 3 in the paper are included in the empirical estimation but not reported to conserve space. All regressions use fixed effects for firms, ratings, loan type, loan distribution method and year. See Appendix C in the paper for a detailed definition of all variables. Numbers in parentheses are standard errors corrected for heteroscedasticity and clustering at the firm level (**significant at the 1% level, **significant at the 5% level, *significant at the 10% level).

| Panel A: Lender Matching- Dependent Variable = $Fee_{Rel} - Fee_{NonRel}$ | | | |
|---|---------------------|-------------------|-------------------|
| | Non-distress sample | Distress sample | Full sample |
| DISTRESS | | | 90.7*** (8.05) |
| CONSTANT | -3.31* (1.70) | 76.2*** (11.3) | -3.73** (1.74) |
| N | 8329 | 391 | 8720 |
| adj. R^2 | 0.098 | 0.04 | 0.094 |
| F-test DISTRESS+CONSTANT=0 | | | 121.7*** |
| Panel B: Sign Test of Collateral Status Difference= $Collateral_{Rel} - Collateral_{Non-Rel}$ | | | |
| | | NORMAL | DISTRESS |
| | -1 | 1232 | 40 |
| Collateral status difference | 0 | 4845 | 105 |
| | 1 | 935 | 27 |
| Number of observations | | 7012 | 172 |
| Equality test of matched data | | -6.380*** | -1.58 |