Does Borrowing-Cost Dispersion Matter? Evidence on Credit and Real Outcomes from Turkish Firms *

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April 2026

Abstract

We study whether dispersion in borrowing costs across a firm's lenders has effects beyond the average borrowing rate. Using matched administrative data from Türkiye, we construct firm-level measures of average borrowing costs and dispersion across lenders. Instrumenting both with the corresponding mean and dispersion of bank credit-supply shocks, we find that higher dispersion reduces credit growth, utilization, loan maturity, employment, hirings, value added, sales, and profit margin, while increasing credit concentration. We also find that these effects are larger for high-leverage firms, consistent with a financing-frictions channel. The results suggest that fragmented lender pricing is a distinct financial friction rather than noise around the average borrowing rate.

Keywords: Borrowing-cost dispersion, cross-lender pricing, bank credit supply shocks, financial frictions, credit allocation, firm performance
JEL Codes: G21, G32, D22, J23.

*The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the research staff or the Central Bank of the Republic of Turkiye.

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1 Introduction

Empirical work in banking and corporate finance typically summarizes a firm's financing conditions using an average borrowing rate. Yet many firms borrow from several banks at the same time, and the rates they pay can differ substantially across lenders within the same year. As a result, two firms with the same average borrowing rate may still face very different financing environments. In this paper, we ask whether within-firm dispersion in borrowing costs has independent effects on firm outcomes beyond the average borrowing rate.

We study this question using matched administrative data from Türkiye covering 2010–2024. The data combine firm balance sheets, employer-employee records, and firm-bank credit relationships, allowing us to construct firm-level measures of the loan-share-weighted average borrowing rate and the cross-lender dispersion of interest rates. We then examine whether higher borrowing-cost dispersion causes weaker financial and real outcomes, conditional on the firm's average borrowing rate. To address endogeneity, we exploit variation in bank credit-supply shocks across a firm's lenders. Specifically, following Amiti and Weinstein (2018), we instrument both the mean and the dispersion of borrowing costs using the corresponding mean and dispersion of lender-level credit-supply shocks.

We find that borrowing-cost dispersion across lenders affects firm outcomes beyond the average borrowing rate. Higher dispersion reduces credit growth, credit utilization, and loan maturity, while increasing credit concentration. These financial effects are accompanied by lower employment, hirings, sales, value added, and profit margin. The average borrowing rate remains quantitatively more important, but dispersion still has separate effects on both financing and real outcomes. The effects are stronger for high-leverage firms, suggesting that fragmented lender pricing is more costly when balance-sheet capacity is limited.

Our paper relates to several strands of the literature. First, the bank-lending literature shows that lender-specific credit-supply shocks affect firm borrowing and real outcomes, and provides the matched bank-firm framework we use for identification (Khwaja and Mian, 2008; Jiménez et al., 2012; Chodorow-Reich, 2014; Amiti and Weinstein, 2018; Degryse et al., 2019). Second, recent work documents substantial heterogeneity in borrowing costs across loans and lenders, even among observationally similar credit contracts. Amiti et al. (2026) show significant variation in interest rates across similar bank loans and interpret it through search frictions and incomplete comparison shopping, while Faria-e Castro et al. (2024) document that borrowing costs can also vary substantially within firm across debt instruments. Third, the broader literature on financial frictions and misallocation emphasizes that dispersion in

financing conditions can be economically meaningful (Gilchrist et al., 2013; Cavalcanti et al., 2021). Our contribution is to show that firm financing conditions depend not only on the average borrowing cost, but also on how borrowing costs are distributed across lenders.

The paper is organized as follows. Section 2 describes the data and empirical strategy. Section 3 presents the main results, and Section 4 concludes.

2 Data

Our analysis combines three matched administrative datasets covering Turkish non-financial firms over 2010–2024. First, our firm-level financial data come from the Revenue Administration, which provides the Central Bank of the Republic of Türkiye (CBRT) with annual balance sheet and income statement records for private non-financial firms reporting under the balance sheet accounting system. These statements are prepared under Türkiye's Tax Procedure Law. Incorporated firms, subject to the corporate tax regime, are required to file financial statements regardless of size, whereas unincorporated businesses reporting under the personal income tax regime are included only if they exceed the statutory reporting thresholds.[1]

Second, we merge these data with annual firm-level employment records from the Social Security Institution (SSI), which allows us to measure firm size and labor outcomes consistently across firms and years. To improve data quality, we exclude firm-year observations with clearly inconsistent values, including negative employment, negative total assets, or negative net sales.

Third, our credit variables are constructed from the Credit Registry of the Turkish Banking Association, which records firm-bank-level lending relationships on an annual basis. The registry contains detailed information on granted and utilized loan amounts, interest rates, maturity, and currency denomination for each firm-bank pair. We focus on cash loans and winsorize credit amounts at the 1% level within each year and NACE Rev-2 two-digit sector to limit the influence of extreme observations.

[1] As of 2023, firms in Türkiye are required to keep accounts under the balance sheet method if they satisfy at least one of the following conditions: annual purchases above 890,000 TL (approximately $35,000), annual sales above 1,270,000 TL, annual gross business income above 440,000 TL, or a combined threshold in which five times business income plus annual sales exceeds 890,000 TL.

2.1 Measuring borrowing-cost dispersion

Many firms in our data borrow simultaneously from more than one bank. For these firms, the cost of external finance is not summarized fully by a single average rate, since different lenders may charge the same borrower substantially different interest rates in the same year. We therefore define firm-level rate dispersion as the loan-share-weighted cross-bank standard deviation of interest rates. For each firm f in year t, we compute

$$\sigma_{ft} = \left(\sum_{b} \omega_{b,f,t-1} (r_{bft} - \bar{r}_{ft})^2 \right)^{1/2}, \tag{1}$$

where

$$\omega_{b,f,t-1} = \frac{L_{b,f,t-1}}{\sum_{b'} L_{b',f,t-1}}$$

denotes bank b's lagged share in the firm's total borrowing and

$$\bar{r}_{ft} = \sum_{b} \omega_{b,f,t-1} r_{bft}$$

is the loan-weighted average interest rate paid by the firm. Using lagged credit shares mitigates simultaneity concerns that would arise if current loan amounts mechanically responded to current pricing differences.

The dispersion measure captures the extent to which a firm's borrowing conditions are fragmented across lenders. A high value of σ_{ft} indicates that the firm borrows at markedly different rates from different banks, whereas a low value implies a more uniform set of financing conditions across relationships.

2.2 Baseline specification

We estimate the effect of borrowing-cost dispersion on firm outcomes as below:

$$Y_{ft} = \beta_1 \ln \sigma_{ft} + \beta_2 \ln \bar{r}_{ft} + \Gamma X_{f,t-1} + \alpha_f + \delta_{s,t} + \phi_{p,t} + \varepsilon_{ft}, \tag{2}$$

where Y_{ft} is a firm outcome, $\ln \sigma_{ft}$ is log borrowing-cost dispersion, and $\ln \bar{r}_{ft}$ is the log average borrowing rate. Including both variables allows us to separate the effect of the level of borrowing costs from the effect of their dispersion across lenders. The vector $X_{f,t-1}$ includes lagged firm controls, and we include firm, sector-year, and province-year fixed effects.

We consider real outcomes–sales, purchases, employment, hirings, value added, and profit

margin–and financial outcomes–total credit, utilization, the number of bank relationships, and average maturity. We also examine the Herfindahl-Hirschman Index of credit concentration,

$$\text{HHI}_{ft} = \sum_b \omega_{bft}^2, \tag{3}$$

where higher values indicate that borrowing is concentrated among fewer banks, and reallocation efficiency,

$$\text{ReallocEff}_{ft} = -\sum_b \Delta\omega_{bft}\,(r_{bft} - \bar{r}_{ft}), \tag{4}$$

where $\Delta\omega_{bft}$ is the change in bank b's share in firm f's total borrowing. By construction, higher values of ReallocEff_{ft} indicate that the firm shifted borrowing toward relatively cheaper lenders.

2.3 Identification and instrumental variables

Borrowing-cost dispersion may be endogenous if weaker or riskier firms both face more dispersed loan pricing and experience worse outcomes. To address this concern, we instrument σ_{ft} with the loan-share-weighted standard deviation of bank credit-supply shocks across the firm's lenders. Using bank-level supply shocks estimated following Amiti and Weinstein (2018), we construct

$$Z_{ft}^{\sigma} = \left(\sum_b \omega_{b,f,t-1} \left(\hat{\eta}_{bt} - \bar{\eta}_{ft} \right)^2 \right)^{1/2}, \tag{5}$$

where $\hat{\eta}_{bt}$ is the estimated bank-level supply shock and

$$\bar{\eta}_{ft} = \sum_b \omega_{b,f,t-1} \hat{\eta}_{bt}$$

is the loan-share-weighted mean supply shock faced by firm f. Intuitively, firms connected to banks that experience more heterogeneous supply shocks should face more heterogeneous borrowing conditions across lenders.

Because the level of the firm's average borrowing cost is also endogenous, we instrument $\ln \bar{r}_{ft}$ using the loan-share-weighted mean of the same bank supply shocks:

$$Z_{ft}^{\mu} = \sum_b \omega_{b,f,t-1} \hat{\eta}_{bt}. \tag{6}$$

Using the dispersion and mean of lender-side supply shocks as instruments for the corresponding moments of firm borrowing costs, we isolate variation in financing conditions that is driven by bank-side credit supply rather than borrower-side demand. The identifying assumption is that, conditional on firm fixed effects, sector-year fixed effects, province-year fixed or effects, and lagged firm controls, cross-bank heterogeneity in bank supply shocks affects firm outcomes only through borrowing costs.

When demand and supply shocks are uncorrelated, demand-driven variation in credit acts like classical measurement error in observed credit quantities (Paravisini et al., 2014). As a result, OLS suffers attenuation bias, with the coefficient biased toward zero. Comparing OLS and IV estimates therefore helps quantify the relative roles of credit demand and supply: the larger the share of credit variation driven by demand, the stronger the attenuation in OLS. This pattern is evident in Tables A1 and A2.

3 Results

Table 1 and Table 2 report the baseline 2SLS results. The first-stage statistics are strong throughout, with Kleibergen–Paap F-statistics of 73.4 for $\ln \sigma_{ft}$ and 89.1 for $\ln \bar{r}_{ft}$ in the full sample, and similarly high values in the leverage subsamples. This indicates that the lender-side instruments provide strong variation for both the dispersion and the level of borrowing costs.

Real Effects Table 1 shows that greater within-firm dispersion in borrowing costs reduces firm performance, even after controlling for the average borrowing rate. In the full sample, a 1% increase in interest rate dispersion lowers sales by 0.164%, purchases by 0.188%, employment by 0.097%, hirings by 0.129%, and value added by 0.171%. Profit margin also declines by 0.024 points. The estimated effects are larger for purchases, value added, and sales than for employment and hirings, consistent with stronger adjustment along relatively flexible operating margins than along labor margins. By comparison, the average borrowing rate has larger effects in absolute value across all outcomes; for instance, a 1% increase lowers sales by 0.381% and value added by 0.326%, so the level of financing costs remains the dominant margin, but dispersion has an independent and economically meaningful effect.

The heterogeneity by leverage points in the same direction. The real effects of dispersion are roughly three times larger for high-leverage firms than for low-leverage firms across all outcomes, consistent with the view that firms with weaker balance sheets have less capacity to

absorb fragmented financing conditions (Amiti and Weinstein, 2018; Chodorow-Reich, 2014). The same pattern holds for the average borrowing rate, suggesting that financial fragility amplifies both dimensions of borrowing costs. Overall, this heterogeneity is consistent with a financing-frictions channel through which uneven pricing across lenders is more costly for firms with limited balance-sheet capacity.

Financial Effects Table 2 shows that borrowing-cost dispersion also affects firms' financing behavior. A 1% increase in dispersion lowers credit growth by 0.176%, the credit utilization rate by 0.112 points, the number of bank relationships by 0.163%, and average maturity by 0.131%. At the same time, it increases the Herfindahl-Hirschman Index of credit concentration by 0.052 and reallocation efficiency by 0.287. These estimates indicate that when borrowing rates become more dispersed across lenders, firms borrow less overall, rely on fewer banks, shorten maturity, and reallocate borrowing toward relatively cheaper lenders. The corresponding effects of the average borrowing rate are larger in absolute value, but the qualitative pattern is similar. Firms appear to respond not only to the level of borrowing costs, but also to the extent of cross-lender price dispersion.

The leverage heterogeneity in Table 2 points in the same direction as the real-effects results. The financial effects of dispersion are systematically larger for high-leverage firms than for low-leverage firms. Highly leveraged firms experience larger declines in credit growth, utilization, the number of bank relationships, and maturity, together with larger increases in concentration and reallocation. This pattern is consistent with the view that firms with weaker balance sheets are less able to absorb lender-specific pricing differences and therefore adjust more sharply when financing conditions become fragmented (Khwaja and Mian, 2008; Amiti and Weinstein, 2018).

The real and financial estimates jointly indicate that within-firm dispersion in borrowing costs captures an additional dimension of financial tightness beyond the average borrowing rate. Greater dispersion leads firms to borrow less, concentrate borrowing across fewer lenders, shorten maturity, and reduce real activity. Moreover, the larger effects among high-leverage firms suggest that fragmented lender pricing is particularly costly when firms have limited balance-sheet capacity.

Table 1: Real Effects of Interest Rate Dispersion — 2SLS Estimates

	(1) Sales	(2) Purchases	(3) Employment	(4) Hirings	(5) Value Added	(6) Profit Margin
Panel A: All Firms						
$\ln \sigma_{ft}$	-0.164^{***}	-0.188^{***}	-0.097^{***}	-0.129^{***}	-0.171^{***}	-0.024^{***}
	(0.021)	(0.019)	(0.016)	(0.018)	(0.017)	(0.004)
$\ln \bar{r}_{ft}$	-0.381^{***}	-0.344^{***}	-0.264^{***}	-0.302^{***}	-0.326^{***}	-0.067^{***}
	(0.048)	(0.043)	(0.035)	(0.041)	(0.038)	(0.009)
F-test (First Stage, $\ln \sigma_{ft}$)	73.42	73.42	73.42	73.42	73.42	73.42
F-test (First Stage, $\ln \bar{r}_{ft}$)	89.11	89.11	89.11	89.11	89.11	89.11
R-squared	0.36	0.22	0.24	0.18	0.20	0.19
Observations	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102
Panel B: High Leverage						
$\ln \sigma_{ft}$	-0.224^{***}	-0.261^{***}	-0.132^{***}	-0.171^{***}	-0.233^{***}	-0.032^{***}
	(0.027)	(0.025)	(0.021)	(0.024)	(0.023)	(0.005)
$\ln \bar{r}_{ft}$	-0.506^{***}	-0.458^{***}	-0.352^{***}	-0.403^{***}	-0.429^{***}	-0.087^{***}
	(0.065)	(0.058)	(0.047)	(0.055)	(0.051)	(0.012)
F-test (First Stage, $\ln \sigma_{ft}$)	61.88	61.88	61.88	61.88	61.88	61.88
F-test (First Stage, $\ln \bar{r}_{ft}$)	75.33	75.33	75.33	75.33	75.33	75.33
R-squared	0.30	0.19	0.22	0.17	0.19	0.18
Observations	359,440	359,440	359,440	359,440	359,440	359,440
Panel C: Low Leverage						
$\ln \sigma_{ft}$	-0.071^{**}	-0.089^{***}	-0.041^{*}	-0.055^{**}	-0.077^{***}	-0.010^{*}
	(0.029)	(0.027)	(0.022)	(0.025)	(0.024)	(0.006)
$\ln \bar{r}_{ft}$	-0.176^{***}	-0.161^{***}	-0.118^{***}	-0.138^{***}	-0.149^{***}	-0.031^{***}
	(0.063)	(0.058)	(0.047)	(0.054)	(0.052)	(0.012)
F-test (First Stage, $\ln \sigma_{ft}$)	69.74	69.74	69.74	69.74	69.74	69.74
F-test (First Stage, $\ln \bar{r}_{ft}$)	82.09	82.09	82.09	82.09	82.09	82.09
R-squared	0.31	0.20	0.23	0.18	0.20	0.22
Observations	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662
Firm FE	✓	✓	✓	✓	✓	✓
Sector×Year FE	✓	✓	✓	✓	✓	✓
Province×Year FE	✓	✓	✓	✓	✓	✓
Firm Controls	✓	✓	✓	✓	✓	✓

Notes: This table reports 2SLS estimates of Equation 2. The dependent variables are log sales, log purchases, log employment, log hirings, log value added, and profit margin. $\ln \sigma_{ft}$ denotes the log loan-share-weighted dispersion of borrowing rates across lenders, and $\ln \bar{r}_{ft}$ denotes the log loan-share-weighted average borrowing rate. Both variables are instrumented with loan-share-weighted Amiti–Weinstein bank supply shocks: the dispersion of shocks for $\ln \sigma_{ft}$ and the mean of shocks for $\ln \bar{r}_{ft}$. Panel B includes firms in the top quartile of the sector-year leverage distribution; Panel C includes firms below the top quartile. Standard errors are clustered at the firm level. First-stage F-statistics report Kleibergen–Paap Wald statistics. Sample period: 2010–2024. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table 2: Financial Effects of Interest Rate Dispersion — 2SLS Estimates

	(1) Credit Growth	(2) Credit Utilization Rate	(3) Number of Banks	(4) Average Maturity	(5) HHI	(6) Reallocation Efficiency
Panel A: All Firms						
$\ln \sigma_{ft}$	-0.176^{***}	-0.112^{***}	-0.163^{***}	-0.131^{***}	0.052^{***}	0.287^{***}
	(0.023)	(0.010)	(0.014)	(0.017)	(0.004)	(0.025)
$\ln \bar{r}_{ft}$	-0.401^{***}	-0.176^{***}	-0.231^{***}	-0.298^{***}	0.058^{***}	0.436^{***}
	(0.051)	(0.022)	(0.030)	(0.039)	(0.008)	(0.057)
F-test (First Stage, $\ln \sigma_{ft}$)	73.42	73.42	73.42	73.42	73.42	73.42
F-test (First Stage, $\ln \bar{r}_{ft}$)	89.11	89.11	89.11	89.11	89.11	89.11
R-squared	0.75	0.57	0.79	0.72	0.65	0.40
Observations	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102
Panel B: High Leverage						
$\ln \sigma_{ft}$	-0.241^{***}	-0.156^{***}	-0.219^{***}	-0.173^{***}	0.071^{***}	0.364^{***}
	(0.030)	(0.014)	(0.018)	(0.023)	(0.005)	(0.033)
$\ln \bar{r}_{ft}$	-0.536^{***}	-0.257^{***}	-0.317^{***}	-0.396^{***}	0.082^{***}	0.573^{***}
	(0.069)	(0.033)	(0.041)	(0.052)	(0.011)	(0.075)
F-test (First Stage, $\ln \sigma_{ft}$)	61.88	61.88	61.88	61.88	61.88	61.88
F-test (First Stage, $\ln \bar{r}_{ft}$)	75.33	75.33	75.33	75.33	75.33	75.33
R-squared	0.74	0.56	0.78	0.71	0.64	0.39
Observations	359,440	359,440	359,440	359,440	359,440	359,440
Panel C: Low Leverage						
$\ln \sigma_{ft}$	-0.081^{**}	-0.051^{***}	-0.072^{***}	-0.058^{**}	0.022^{***}	0.141^{***}
	(0.032)	(0.014)	(0.019)	(0.024)	(0.005)	(0.034)
$\ln \bar{r}_{ft}$	-0.188^{***}	-0.083^{***}	-0.101^{***}	-0.138^{***}	0.028^{***}	0.191^{**}
	(0.072)	(0.032)	(0.042)	(0.054)	(0.011)	(0.076)
F-test (First Stage, $\ln \sigma_{ft}$)	69.74	69.74	69.74	69.74	69.74	69.74
F-test (First Stage, $\ln \bar{r}_{ft}$)	82.09	82.09	82.09	82.09	82.09	82.09
R-squared	0.76	0.58	0.80	0.73	0.66	0.41
Observations	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662
Firm FE	✓	✓	✓	✓	✓	✓
Sector×Year FE	✓	✓	✓	✓	✓	✓
Province×Year FE	✓	✓	✓	✓	✓	✓
Firm Controls	✓	✓	✓	✓	✓	✓

Notes: This table reports 2SLS estimates of Equation 2. The dependent variables are credit growth, utilization, the number of active banking relationships, average maturity, credit concentration (HHI), and reallocation efficiency. $\ln \sigma_{ft}$ denotes the log loan-share-weighted dispersion of borrowing rates across lenders, and $\ln \bar{r}_{ft}$ denotes the log loan-share-weighted average borrowing rate. Both variables are instrumented with loan-share-weighted Amiti–Weinstein bank supply shocks: the dispersion of shocks for $\ln \sigma_{ft}$ and the mean of shocks for $\ln \bar{r}_{ft}$. Panel B includes firms in the top quartile of the sector-year leverage distribution; Panel C includes firms below the top quartile. Standard errors are clustered at the firm level. First-stage F-statistics report Kleibergen–Paap Wald statistics. Sample period: 2010–2024. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

4 Conclusion

Using matched Turkish administrative data and an IV strategy based on cross-lender supply shocks, we show that greater within-firm borrowing-cost dispersion weakens both financing and real activity. Firms borrow less, shorten maturity, concentrate borrowing across fewer banks, and reduce employment and sales. The results suggest that fragmented credit pricing is a distinct financial friction, and that focusing only on average borrowing costs misses part of the financing environment firms actually face.

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Appendix - OLS Results

Table A1: Real Effects of Interest Rate Dispersion — OLS Estimates

	(1) Sales	(2) Purchases	(3) Employment	(4) Hirings	(5) Value Added	(6) Profit Margin
Panel A: All Firms						
$\ln \sigma_{ft}$	-0.036^{***}	-0.044^{***}	-0.021^{***}	-0.031^{***}	-0.039^{***}	-0.006^{***}
	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.001)
$\ln \bar{r}_{ft}$	-0.089^{***}	-0.081^{***}	-0.063^{***}	-0.074^{***}	-0.086^{***}	-0.018^{***}
	(0.008)	(0.008)	(0.007)	(0.008)	(0.008)	(0.002)
R-squared	0.84	0.83	0.86	0.81	0.83	0.72
Observations	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102
Panel B: High Leverage						
$\ln \sigma_{ft}$	-0.058^{***}	-0.071^{***}	-0.036^{***}	-0.049^{***}	-0.061^{***}	-0.010^{***}
	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)	(0.001)
$\ln \bar{r}_{ft}$	-0.141^{***}	-0.129^{***}	-0.103^{***}	-0.118^{***}	-0.134^{***}	-0.028^{***}
	(0.012)	(0.011)	(0.010)	(0.012)	(0.011)	(0.003)
R-squared	0.83	0.82	0.85	0.80	0.82	0.71
Observations	359,440	359,440	359,440	359,440	359,440	359,440
Panel C: Low Leverage						
$\ln \sigma_{ft}$	-0.015^{***}	-0.020^{***}	-0.009^{**}	-0.012^{**}	-0.017^{***}	-0.003^{***}
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.001)
$\ln \bar{r}_{ft}$	-0.041^{***}	-0.036^{***}	-0.026^{***}	-0.030^{***}	-0.035^{***}	-0.008^{***}
	(0.011)	(0.010)	(0.009)	(0.010)	(0.010)	(0.002)
R^2	0.84	0.83	0.86	0.81	0.83	0.73
Observations	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662
Firm FE	✓	✓	✓	✓	✓	✓
Sector×Year FE	✓	✓	✓	✓	✓	✓
Province×Year FE	✓	✓	✓	✓	✓	✓
Firm Controls	✓	✓	✓	✓	✓	✓

Notes: This table reports OLS estimates from Equation 2. The dependent variables are log sales, log purchases, log employment, log hirings, log value added, and profit margin in levels. $\ln \sigma_{ft}$ is the log of the loan-share-weighted standard deviation of interest rates across a firm's lenders, and $\ln \bar{r}_{ft}$ is the log of the loan-share-weighted average borrowing rate. Panel B restricts the sample to firms in the top quartile of the sector-year leverage distribution, while Panel C restricts the sample to firms below that cutoff. Standard errors are clustered at the firm level. Sample period: 2010–2024. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.1$.

Table A2: Financial Effects of Interest Rate Dispersion — OLS Estimates

	(1) Credit Growth	(2) Credit Utilization Rate	(3) Number of Banks	(4) Average Maturity	(5) HHI	(6) Reallocation Efficiency
Panel A: All Firms						
$\ln \sigma_{ft}$	-0.039^{***}	-0.028^{***}	-0.041^{***}	-0.036^{***}	0.015^{***}	0.049^{***}
	(0.005)	(0.002)	(0.003)	(0.004)	(0.001)	(0.003)
$\ln \bar{r}_{ft}$	-0.109^{***}	-0.044^{***}	-0.061^{***}	-0.079^{***}	0.018^{***}	0.063^{***}
	(0.011)	(0.005)	(0.007)	(0.009)	(0.002)	(0.007)
R-squared	0.78	0.61	0.82	0.75	0.69	0.44
Observations	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102	1,467,102
Panel B: High Leverage						
$\ln \sigma_{ft}$	-0.073^{***}	-0.041^{***}	-0.061^{***}	-0.054^{***}	0.022^{***}	0.074^{***}
	(0.007)	(0.003)	(0.004)	(0.005)	(0.001)	(0.004)
$\ln \bar{r}_{ft}$	-0.166^{***}	-0.068^{***}	-0.097^{***}	-0.124^{***}	0.028^{***}	0.101^{***}
	(0.015)	(0.007)	(0.010)	(0.012)	(0.003)	(0.010)
R-squared	0.77	0.60	0.81	0.74	0.68	0.43
Observations	359,440	359,440	359,440	359,440	359,440	359,440
Panel C: Low Leverage						
$\ln \sigma_{ft}$	-0.019^{***}	-0.011^{***}	-0.017^{***}	-0.013^{***}	0.006^{***}	0.019^{***}
	(0.007)	(0.003)	(0.004)	(0.005)	(0.001)	(0.004)
$\ln \bar{r}_{ft}$	-0.049^{***}	-0.019^{***}	-0.026^{***}	-0.034^{***}	0.008^{***}	0.025^{***}
	(0.015)	(0.006)	(0.009)	(0.011)	(0.002)	(0.009)
R-squared	0.79	0.62	0.83	0.76	0.70	0.45
Observations	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662	1,107,662
Firm FE	✓	✓	✓	✓	✓	✓
Sector×Year FE	✓	✓	✓	✓	✓	✓
Province×Year FE	✓	✓	✓	✓	✓	✓
Firm Controls	✓	✓	✓	✓	✓	✓

Notes: This table reports OLS estimates from Equation 2. The dependent variables are log credit growth, the credit utilization rate, the log number of active banking relationships, the log average loan maturity, the Herfindahl-Hirschman Index (HHI) of credit concentration, and reallocation efficiency. $\ln \sigma_{ft}$ is the log of the loan-share-weighted standard deviation of interest rates across a firm's lenders, and $\ln \bar{r}_{ft}$ is the log of the loan-share-weighted average borrowing rate. Panel B restricts the sample to firms in the top quartile of the sector-year leverage distribution, while Panel C restricts the sample to firms below that cutoff. Standard errors are clustered at the firm level. Sample period: 2010–2024. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.1$.