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Does local economic freedom matter for the cost of corporate borrowing from the banking sector? Evidence from the US states

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Abstract

Using data on large loans to US firms, we show that higher economic freedom in borrowers' headquarters states reduces the cost of bank credit. A one standard deviation increase in economic freedom lowers loan spreads by 12.38 basis points ($1.5 million interest savings for the average loan). We also provide evidence supporting the economic mechanism by which lenders view economic freedom as enhancing borrowers' ability to capitalize on investment and growth opportunities. The main drivers of this effect are freedom from government spending and taxation, while labor market freedom particularly benefits smaller firms and those in high economic growth potential states. Furthermore, higher economic freedom is linked to longer loan maturities, reduced fees, and looser general covenants.

JEL CLASSIFICATION
G21, L11

1 | INTRODUCTION

Economic freedom denotes the degree of market orientation of an economy's institutions and policies (Dau and Cuervo-Cazurra, 2014; Angulo-Guerrero et al., 2017). Economies with high levels of economic freedom exhibit fewer market-distorting government interventions, while in those with low levels of economic freedom, more

distortionary government interventions are apparent. To the best of our knowledge, no previous studies thoroughly examine the link between economic freedom and the cost of bank loans. Therefore, this study investigates if banks appreciate economic freedom by charging lower loan prices to firms in more economically free jurisdictions. Having an insight into this relationship sheds some light on how market-distorting government interventions could affect the cost of corporate financing from the banking sector. Investigating this potential effect is important because bank credit is the most important source of external finance for US corporations (Bharath et al., 2008; Hasan et al., 2014; Ullah and Wei, 2017).

A broad literature provides evidence that jurisdictions with high economic freedom exhibit more growth, enjoy higher productivity, and have better economic outcomes (e.g., Dawson, 1998; Garrett and Rhine, 2010; Bergh and Bjørnskov, 2021). A major driver of the positive relationship between economic freedom and outcomes is the reduction of institutional uncertainties stemming from government intervention (Bennett, 2021). Such uncertainties can distort business decisions by increasing business costs, including administrative, financial, and labor costs (Bylund and McCaffrey, 2017; Boudreaux and Nikolaev, 2019). Economic freedom, by minimizing government interference, allows firms the flexibility to allocate resources more efficiently and capitalize on investment and growth opportunities. Supporting this argument, Chen et al. (2015) find that economic freedom fosters better management of investment options, while Angulo-Guerrero et al. (2017) show that it facilitates entrepreneurs' ability to respond to business opportunities. Based on these insights, we hypothesize that banks perceive economic freedom in borrowers' headquarters states as enabling borrowing firms to pursue investment and growth opportunities more effectively, thereby rendering them more profitable.[1] Consequently, we posit that economic freedom in borrowers' headquarters states exhibits a negative association with the cost of bank loans (hypothesis ***H1***).

To examine the effects of economic freedom on the cost of bank loans, we employ the US's local (state-level) economic freedom index from 1991 to 2022. We source this index from the *Fraser Institute*. Using the single-country context of the US offers two key advantages for testing our hypothesis. First, it mitigates the risk of confounding factors influencing the results. For example, the effect of economic freedom on outcomes in a cross-country setting could depend on national culture (Williamson and Mathers, 2011). Additionally, as a highly developed economy with strong policy and regulatory enforcement, the US provides moderate homogeneity across states regarding factors such as national culture and regulatory oversight. Second, US states exhibit substantial heterogeneity in economic freedom (Stansel and Tuszynski, 2017). This heterogeneity significantly influences local outcomes such as entrepreneurship, employment growth, and economic dynamism (Garrett and Rhine, 2010; Barnatchez and Lester, 2017; Bennett, 2021). Table 1 highlights the sample mean and standard deviation of economic freedom by state, underscoring this heterogeneity.

We supplement the economic freedom index with detailed loan information from the Refinitiv-Dealscan database, which provides comprehensive coverage of large loans issued to large US firms.[2] While most loans in this database are syndicated loans, it also includes large sole-lender loans.[3] We source information on loan prices, other loan characteristics, and the identity of the borrowing firms. Then, we use the Compustat database to match the loan data and the identity of the borrowing firms with firm-level control variables and their headquarters state. Following the extant literature, we exclude from our sample loans granted to financial (SIC between 6000–6999) and utility firms (SIC 4900–4949). The final sample comprises around 31,653 loan facilities granted to 3,707 unique borrowing firms in the 50 US states from 1991–2022.

[1]The choice of associating the headquarters state of a borrowing firm with economic freedom (a location characteristic) follows the extant literature (see, e.g., Smith, 2016; Hasan et al., 2021). Hasan et al. (2021) highlight that the institutional environment of the headquarters state significantly influences a firm's daily business operations, as the headquarters serve as the firm's "*nerve center*." Moreover, US firms tend to display substantial operational activity in their headquarters state (Garcia and Norli, 2012), emphasizing the importance of local economic and institutional factors for corporate outcomes.

[2]The focus on the large loans to US to large US firms reflects the data availability on loan prices and other loan contract information (e.g., loan size, maturity, collateral, and covenants). To the best of our knowledge, the Refinitiv-Dealscan database is the most comprehensive public source of such information.

[3]6,598 of the loans in the sample are granted by sole lenders (i.e., around 20% of the sample).

TABLE 1 Economic freedom across the US states.

State	Mean	SD	State	Mean	SD
Alaska	4.09	0.51	Montana	4.91	0.17
Alabama	6.14	0.41	North Carolina	6.49	0.38
Arkansas	6.19	0.1	North Dakota	6.56	0.46
Arizona	6.53	0.42	Nebraska	6.7	0.21
California	4.69	0.3	New Hampshire	7.68	0.37
Colorado	6.91	0.44	New Jersey	5.81	0.45
Connecticut	6.28	0.09	New Mexico	5	0.28
Delaware	5.87	0.64	Nevada	6.78	0.58
Florida	7.35	0.37	New York	3.98	0.4
Georgia	6.83	0.35	Ohio	4.95	0.45
Hawaii	5	0.48	Oklahoma	6.41	0.52
Iowa	5.78	0.5	Oregon	4.85	0.26
Idaho	6.28	0.59	Pennsylvania	6.08	0.39
Illinois	5.96	0.36	Rhode Island	4.88	0.45
Indiana	6.6	0.37	South Carolina	5.81	0.46
Kansas	6.52	0.3	South Dakota	7.28	0.39
Kentucky	5.5	0.37	Tennessee	7.22	0.32
Louisiana	5.84	0.27	Texas	7.19	0.39
Massachusetts	6.38	0.43	Utah	6.16	0.4
Maryland	6.72	0.38	Virginia	7.36	0.24
Maine	5.15	0.24	Vermont	5.13	0.32
Michigan	5.43	0.53	Washington	5.39	0.45
Minnesota	5.25	0.44	Wisconsin	5.53	0.56
Mississippi	5.98	0	West Virginia	4.91	0.42
Missouri	6.61	0.86	Wyoming	5.94	0
Total			United States	6.03	1.1

Note: The table depicts the sample mean and standard deviation of economic freedom by US state over the 1991–20122 period. The source is the Fraser Institute. The economic freedom index has a 0–10 scale with higher values denoting more economic freedom.

The baseline results support ***H1***, showing a significant negative relationship between economic freedom and loan costs. Economically, a one-point (around one standard deviation) increase in economic freedom (e.g., the sample mean difference between New York and Ohio) reduces loan spreads by 12.38 basis points, equating to substantial savings for borrowers (around $1.5 million for the average loan, which is $325.71 million and has 3.72 years maturity). To provide evidence of a causal effect, we use instrumental variable estimations. We perform estimations using two different instruments for economic freedom. The second instrument is the average economic freedom in neighboring states. We discuss the rationale for these two instruments in section 3.2 of the manuscript.

The results from the instrumental variable estimations corroborate, in support of hypothesis ***H1***, the baseline model results about a negative and significant association between economic freedom and loan prices. Additionally, we perform a relocation test, similar to Hasan et al. (2017), to further strengthen the causal interpretation. This test uses firms' headquarters relocations to states with differing levels of economic freedom and examines the associated changes in loan spreads.

Then, we perform an analysis to provide evidence regarding the economic mechanism (channel) that drives these results. Specifically, we interact economic freedom with two proxies for investment and growth opportunities: a firm-level measure, the market-to-book assets ratio (*MTB*), and a local measure, the state-level *Leading Index* of the *Federal Reserve Bank of Philadelphia* (Adam and Goyal, 2008; Drobetz et al., 2018). The results support the rationale of our main hypothesis ***H1***. The significant negative interactions confirm that economic freedom amplifies its impact on loan spreads in the presence of higher investment and growth opportunities. Local economic freedom fosters an environment where banks view borrowers as better able to allocate resources efficiently and capitalize on profit opportunities (Chen et al., 2015), thereby reducing loan spreads.

We also test an alternative mechanism (channel), focusing on the role of the banking sector. Several studies show that local economic freedom could improve the efficiency of the banking sector (e.g., Gropper et al., 2015; Asteriou et al., 2021). Therefore, we examine whether the local banking sector drives the relationship between local economic freedom and loan spreads. We interact local economic freedom with an indicator for intra-state lead lenders and do not find this interaction significant. Further, we add state-level measures of banking concentration and lending as control variables, and the negative and significant association between economic freedom and loan spread persists. These results suggest that local banking sector conditions do not drive the results.

To provide more comprehensive evidence about the relationship between local economic freedom and the cost of bank loans, we extend our analyses on the index's components: government spending freedom, taxation freedom, and labor market freedom. In terms of government spending, a smaller government can foster a more favorable environment for local businesses by reducing crowding-out effects, where excessive government spending depresses private sector investment and growth (Kim and Nguyen, 2020; Ngo and Stanfield, 2022). By minimizing such crowding-out effects, government spending freedom enables firms to allocate resources more efficiently, pursue growth, and seize investment opportunities. Empirical evidence supports this, showing that increased government spending constrains firm activities, reducing investment, employment growth, and sales growth (e.g., Hao and Lu, 2018; Kim and Nguyen, 2020; Kong, 2020). By alleviating these constraints, government spending freedom enhances firms' ability to capitalize on investment and growth opportunities, which banks could view favorably, reducing the cost of bank loans (hypothesis ***H2***).

Taxation is critical in corporate decision-making (Doidge and Dyck, 2015). High taxes hinder investment and performance (Djankov et al., 2010; Bryant-Kutcher et al., 2012), while low taxes encourage investment (Dobbins and Jacob, 2016; Auerbach, 2018) and productivity (Fang et al., 2022). Recent US studies demonstrate the beneficial effects of reduced taxation, such as those observed following the *Tax Cuts and Jobs Act (TCJA)* of 2017, which enabled firms to redirect tax savings toward investment (Green and Kerr, 2022; Crawford and Markarian, 2024; Gallemore et al., 2025). Consequently, low taxation could increase the competitiveness of local firms by enabling them to pursue growth-oriented strategies and capitalize on investment opportunities (Donohoe et al., 2022). Thus, we expect banks to appreciate freedom from taxation and reward local borrowing firms with lower loan prices (hypothesis ***H3***).

Stringent labor regulations hinder firms' ability to adjust labor resources efficiently, reducing productivity and investment by increasing hiring and dismissal costs and preventing the replacement of inefficient staff (Blanchard and Portugal, 2001; Besley and Burgess, 2004; Autor et al., 2007; Bassanini et al., 2009). By limiting flexibility in labor adjustments, stringent labor regulations constrain firms' growth potential, investment efficiency, and overall performance (Almeida and Carneiro, 2009; Atanassov and Kim, 2009; Dessaint et al., 2017; Bai et al., 2020). In contrast, labor market freedom fosters efficient labor allocation, enhancing firms' ability to respond effectively to investment and growth opportunities. Thus, labor market freedom could be associated with lower loan spreads (hypothesis ***H4***).

The component analysis reveals that freedom from government spending and taxation strongly drives the observed reductions in loan spreads, aligning with hypotheses ***H2*** and ***H3***. Notably, we also find significant evidence of the economic mechanism of exploiting investment and growth opportunities across all three components, including labor freedom. This suggests that banks view labor freedom as particularly valuable in the presence of high investment and growth opportunities, recognizing its beneficial effects on borrowers' capacity to adjust resources efficiently.

Further tests show that the negative association between economic freedom and loan spreads becomes more apparent for smaller firms. Smaller firms are more likely to have a more significant operational presence in their headquarters state than larger firms (Garcia and Norli, 2012). These results are significant for the overall index and all its components, underscoring that the negative association between economic freedom and the cost of bank loans becomes more prominent for firms that are more likely to have a high concentration of their operations around their headquarters.

Our main findings survive additional robustness tests. We perform estimations using an alternative index of economic freedom across the US states that the *CATO Institute* produces. We also carry out tests that use additional state-level variables, such as local corruption and the political ideology of the state government. In additional analyses, we explore the effects of economic freedom on non-price loan terms. Higher economic freedom reduces the number of general covenants associated with a loan facility. We also show that economic freedom reduces loan fees (specifically the commitment and facility fees) and lengthens loan maturity. These findings suggest that economic freedom also loosens the non-price loan contracting terms.

This study contributes to the literature in three ways. Several studies examine the effects of economic freedom on economic outcomes both at the macroeconomic and at the firm level (e.g., Chen et al., 2015; Herrera-Echeverri et al., 2014; Hoover et al., 2015; Kuckertz et al., 2016; Graafland and Noorderhaven, 2020; Bennett, 2021; Bergh and Bjørnskov, 2021; Lee et al., 2022). However, research about the impact of economic freedom on financial contracts is scarce. We provide the first study that comprehensively investigates the effects of economic freedom on loan pricing. We show that economic freedom significantly reduces the cost of corporate financing from the banking sector.

We also contribute to the literature that examines the effects of state-level locational characteristics on the cost of bank loans of US corporations. Several studies examine the effects of local characteristics such as corruption, social capital, religiosity, and climate change (Hasan et al., 2017; He and Hu, 2016; Hossain et al., 2020; Javadi and Masum, 2021) on the cost of bank credit. Our findings add to this stream of studies.

Finally, few studies investigate the effects of economic freedom on bank outcomes such as performance, profitability, and stability (e.g., Gropper et al., 2015; Asteriou et al., 2021). However, no study investigates if banks appreciate economic freedom around borrowers' headquarters and reward them with lower loan prices. We show that banks appreciate the potential benefits of economic freedom, which is evident in their loan pricing.

2 | DATA AND METHODS

2.1 | Measuring economic freedom

We measure economic freedom using the *Fraser Institute*'s Economic Freedom of North America (EFNA) index, which assesses the degree of market-oriented policies across US states. The EFNA index captures government spending, taxation, and labor market freedom. Government spending freedom measures the size of government relative to the economy, where higher values indicate smaller government sectors. Taxation freedom evaluates the tax burden on businesses and individuals, with higher values representing lower taxes. Labor market freedom assesses the flexibility of labor regulations, such as wage setting and unionization, where higher scores denote fewer restrictions. The EFNA index aggregates these components into a composite score ranging from 0 to 10, with

higher scores reflecting greater economic freedom. The index spans 1991 to 2022, providing comprehensive and consistent coverage across all 50 US states. The finance and economics literature has extensively used this economic freedom measure (see, e.g., Chen et al., 2015; Chortareas et al., 2016; Bergh and Bjørnskov., 2021). Further details on the index and its components are available in Stansel et al. (2020) and Gwartney et al. (2020) and in Appendix A.

In robustness tests, we also employ the economic freedom index that the *CATO Institute* provides as an alternative measure of economic freedom in the US states. This alternative index comprises three main dimensions: Fiscal Policy, regulatory policy, and personal freedom. We use the composite economic freedom index of the *CATO Institute*, which comprises just fiscal and regulatory policy freedoms. However, our results are robust to including personal freedom in the models. By incorporating personal freedom, we ensure that our results are not driven by freedoms unrelated to economic policies, such as individual liberties, thereby strengthening the interpretation that economic freedom drives the observed effects.

2.2 | Sample

Our baseline sample includes information on economic freedom in the 50 US states, loans to US firms, involved banks, and borrowing firms from 1991 to 2022.[4] We obtain loan facilities from the Refintiv-DealScan database. This database provides detailed information on various loan characteristics such as price, maturity, types, size, collateral, and covenants. The unit of the analysis is the loan facility. This is different from a loan package in that firms are able to obtain multiple loan facilities in the same loan package with different terms (such as price, starting dates, maturity, loan types, and amount) across these facilities. Ignoring the differences between loan facilities, even though they are in the same loan package, could bias our estimates. Thus, we follow previous studies (e.g., Hasan et al., 2014, 2017; Deli et al., 2019) and treat each loan facility as a unique observation.

As the Refinitiv-DealScan database contains information on the names of borrowers, we use the Compustat-DealScan linking table (Chava and Roberts, 2008) to match loan facilities with borrowers' information in the Standard & Poor's Compustat database (Compustat). The database provides comprehensive information about borrowers' financial and accounting characteristics, such as size, profitability, and liquidity. As a final step, based on the locations of borrowing firms' headquarters, we also control for some state-level factors that could impact loan prices. The above procedures result in a final sample of 31,653 loans to around 3,707 unique borrowing firms. Table A1 of the appendix provides definitions and sources of variables used in our analysis.

2.3 | Empirical Model

To explore the impact of economic freedom on the cost of bank loans, we employ the following model:

$$Spread_t = f(Eco\_Freedom_{t-1},\ Loan\_Characteristics_t,\ Firm\_Attributes_{t-1}, Ststate\_Attributes_{t-1},\ Fixed\_Effects), \quad (1)$$

where $Spread_t$ or the "all-in-spread-drawn," defined as the sum of the spread over LIBOR plus the facility fee in year *t*. $Eco\_Freedom_{t-1}$ is the vector of the level of economic freedom in 50 US States and its components at year *t-1*, $Loan\_Characteristics_t$ represents the vector of loan-level control variables at year *t*, $Firm\_Attributes_{t-1}$ implies the set of control variables for borrowing firms' characteristics at year *t-1*, and $State\_Attributes_{t-1}$ denotes the state-level controls. The year *t-1* indicates the year immediately before year t when a borrowing firm obtains a loan

[4]The sample stops in 2022 because the latest version of the subnational economic freedom index of the *Fraser Institute* (i.e., the 2023 version) provides data up to 2021 and the economic freedom variable is lagged in the models. This information reflects the latest available as of December 2024.

facility. Using a lagged one period (year) for firm-level and state-level control variables is useful in mitigating simultaneity problems and lowering the possibility of endogeneity problems caused by reverse causality. *Fixed_Effects* represents a set of fixed effects included in the regression model. Standard errors are clustered by state and year because our main variables of interest – economic freedom and its components – vary between years and states.

In Equation (1), in addition to economic freedom, we use a range of control variables at loan, firm, and state levels to account for their potential effects on loan prices and to isolate the specific impact of economic freedom on the cost of bank loans. Following other studies (e.g., Francis et al., 2012; Hasan et al., 2017; Deli et al., 2019; Delis et al., 2020), we include contemporaneous loan-level factors to control for loan size, loan maturity, the number of lenders, and whether a given loan facility requires collateral, covenant, and performance pricing provisions.

We also include borrowing firms' characteristics variables in year *t-1* to control for several firm characteristics. We use the natural log of total assets to control for firm size and the modified Altman z-score and the earnings volatility measure to account for firms' risk profile. We use the cash holdings to total assets ratio to control for firm liquidity. We additionally control for firm tangibility by using the property, plant, and equipment (PPE) to total assets ratio. To account for firms' growth and investment dynamics, we use two variables. The annual percentage change (growth) in sales and assets (Cooper et al., 2008; Rabinovich, 2023). Finally, we also control for the competitive threats in the product market that firms face by employing the product market fluidity measure of Hoberg et al. (2014). The product market fluidity variable is a text-based metric used widely in the empirical literature as a firm-level competition proxy (e.g., Loncan, 2023; Kini et al., 2024). Using a competition proxy is important in our study because local economic freedom could spur competition, and local (state-level) product market competition can influence loan pricing (Hasan et al., 2021). However, US firms also compete at the national (federal) level with significant implications for their cost of bank loans (Valta, 2012). As a firm-specific variable, the product market fluidity measure of Hoberg et al. (2014) captures competitive threats in the product market at the local (state) and national (federal) levels.

Moreover, we account for state demographic and economic variables that are standard in the literature: unemployment rate, income level, education, social capital, and population (see, e.g., Hasan et al., 2017). We also include state political leaning variables (Republican vs. Democrat), as right-leaning governments are generally more likely to promote economic freedom than left-leaning ones (Castro and Martins, 2021). Besides, political partisanship in the US is an important driver of corporate decisions, especially in recent years, with significant effects on the cost of bank loans (Di Giuli and Kostovetsky, 2014; Fos et al.,2022; Dagostino et al., 2023; Sikes and Zhong, 2024).

Hence, we use three additional state-level control variables following Pe'Er and Gottschalg (2011). We employ a *Red State* indicator variable that takes the value of one if Republicans won the presidential election immediately preceding the loan in the borrowers' state and a value of zero otherwise. We also use a *Turned Blue* indicator variable that takes the value of one if Democrats won the most recent presidential election before the loan in the borrowers' state and Republicans had won the election before that; otherwise, it is assigned a zero value. Similarly, the indicator variable *Turned Red* is assigned a value of one if Republicans won the most recent presidential election before the loan in the borrowers' state, following a prior Democratic victory in the earlier election; otherwise, it is assigned a zero value. We source data from Dave Leip's Atlas of US Presidential Elections to construct these political leaning variables, available at https://uselectionatlas.org/.

The analysis includes a comprehensive set of fixed effects to control for various factors: the state of the borrowing firm, the year the loan facility was obtained, the lead lender (i.e., the bank that sets the loan price, loan terms and conducts the screening and monitoring), the borrowers' credit rating and industry, and the type of loan facility. These fixed effects ensure that the model accounts for time-invariant unobservable characteristics that could influence loan spreads.

Table 2 provides the overall descriptive statistics for the variables used in our baseline empirical model.

Table 3 compares firm-level variables between firms headquartered in states with low and high local economic freedom. Consistent with prior studies (e.g., Smith, 2016), we classify firms as being headquartered in high (low)

TABLE 2 Descriptive statistics for the variables used in the baseline model.

Variable	N	Mean	SD	p25	p50	p75
Loan spread	31,653	237.013	149.830	125	205	300
Economic freedom	31,653	6.032	1.095	5.174	6.224	6.916
Firm_Size	31,653	6.808	1.926	5.467	6.716	8.078
Leverage	31,653	32.200	22.536	15.994	30.026	44.668
Tangibility	31,653	74.107	26.151	59.737	82.680	95.910
Cash_holdings	31,653	9.269	11.807	1.475	4.613	12.334
ROA	31,653	6.771	9.879	3.417	7.463	11.664
Sales_Growth	31,653	17.354	43.486	−1.172	7.879	22.274
Asset_Growth	31,653	1.736	25.468	−9.000	−0.853	7.553
Earnings_Volatility	31,653	1.146	3.012	0.075	0.224	0.722
Z-score	31,653	1.749	1.433	0.990	1.785	2.581
Fluidity	31,653	6.205	3.120	3.887	5.630	7.904
Loan_Maturity (months)	31,653	44.652	22.372	26	48	60
Loan_Maturity (natural logarithm)	31,653	3.602	0.731	3.258	3.871	4.094
Loan size (millions)	31,653	325.707	859.508	30	100	300
Loan_Size (natural logarithm)	31,653	4.727	1.740	3.555	4.828	5.991
Dummy_Collateral	31,653	0.624	0.484	0	1	1
Number_Lenders (natural logarithm)	31,653	1.500	1.027	0.693	1.609	2.303
Number_Lenders	31,653	7.311	7.862	2	5	10
Dummy_Covenant	31,653	0.678	0.467	0	1	1
Dummy_Pricing	31,653	0.259	0.438	0	0	1
Ln_Income	31,653	10.488	0.307	10.278	10.468	10.696
Unemployment	31,653	5.521	1.955	4.425	5.275	6.408
Education	31,653	27.141	5.145	23.389	26.711	30.233
Ln_Population	31,653	15.505	2.153	15.465	16.065	16.758
Social_Capital	31,653	−0.199	0.583	−0.512	−0.356	0.174
Red_State	31,653	0.420	0.494	0	0	1
Turned_Blue	31,653	0.083	0.276	0	0	0
Turned_Red	31,653	0.086	0.280	0	0	0

Notes: The table reports the summary statistics for variables used in the full baseline model (Model 4 of Table 4). The sample covers the 1991 to 2022 period. The full definitions of the variables are in Table A1 of the Appendix.

economic freedom states if their state's economic freedom index falls within the top (bottom) quartile for all states each year.

The information in Table 3 indicates significant differences in firm-specific variables between high and low-economic freedom states. Firms headquartered in high economic freedom states demonstrate stronger

TABLE 3 Characteristics of firms headquartered in low and high economic freedom states.

Firm−level variables	Low Economic Freedom states	High Economic Freedom States	t−stat dif. in means
Firm_Size	6.53	6.94	−14.36***
Leverage	26.51	31.12	−13.15***
Tangibility	23.63	35.61	−33.8***
Cash_holdings	11.83	7.16	26.51***
ROA	5.98	6.41	−2.71***
Sales_Growth	15.69	22.75	−10.29***
Asset_Growth	1.61	2.28	−1.67*
Earnings_Volatility	89.41	140.79	−11.06***
Z-score	1.64	1.54	4.08***
Fluidity	6.21	6.7	−10.28***

Notes: This table reports average values in low vs high economic freedom states. Firms are coded as having headquarters in high (low) economic freedom states if the value of economic freedom in their state lies in the top (bottom) quartile of economic freedom for all states each year. The final column contains the t-statistic from the difference of means test. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

profitability (ROA), are larger, and exhibit higher growth dynamics. Specifically, they achieve significantly higher sales growth (22.75% vs. 15.69%) and asset growth (2.28% vs. 1.61%), highlighting their greater capacity to expand revenue streams and invest in assets. On the other hand, firms in low economic freedom states face less competitive pressure, as indicated by significantly lower fluidity scores. These firms prioritize stability, as indicated by their higher z-score and lower earnings volatility. Furthermore, firms in low economic freedom states hold more cash (11.83% vs. 7.16%) and rely on lower leverage (26.51% vs. 31.12%), which signals more conservative financial policies.

Overall, the comparative descriptive statistics in Table 3 suggest that firms headquartered in high economic freedom states operate in more dynamic and competitive markets, enabling them to capitalize on growth opportunities through superior sales and asset expansion. However, these opportunities come with higher competitive pressures and more risk. In contrast, firms in low economic freedom states tend to be more conservative, emphasizing stability over growth. While such firms face less competitive threats, their lower profitability and growth and higher cash holdings suggest a more limited ability to exploit investment opportunities fully.

3 | EMPIRICAL FINDINGS

3.1 | Baseline results

Table 4 reports the baseline results when we estimate Equation (1) using an OLS model with standard errors adjusted for heteroskedasticity. Following Smith (2016), we cluster standard errors by state and year. In this way, we ensure robustness to unspecified time and state correlations in the standard errors. Our models show good fits, as around 71% of the variation in loan prices can be explained by our observed explanatory variables. We start with a simple regression model that includes only economic freedom and loan spread (Model 1). The result shows that economic freedom is associated with lower costs of bank loans. This remains consistent when we control for loan

TABLE 4 Economic freedom and loan spreads: Baseline models.

Variables	(1)	(2)	(3)	(4)
$Economic\_Freedom_{t-1}$	−14.352***	−14.490***	−15.015***	−12.383**
	(5.379)	(5.068)	(4.960)	(5.154)
$Firm\_Size_{t-1}$			−8.355***	−8.395***
			(1.444)	(1.443)
$Leverage_{t-1}$			0.450***	0.452***
			(0.083)	(0.082)
$Tangibility_{t-1}$			−0.189**	−0.187**
			(0.091)	(0.090)
$Cash\_holdings_{t-1}$			−0.305**	−0.316**
			(0.125)	(0.125)
ROA_{t-1}			−1.589***	−1.594***
			(0.174)	(0.173)
$Sales\_Growth_{t-1}$			−0.010	−0.014
			(0.042)	(0.041)
$Asset\_Growth_{t-1}$			0.000	−0.002
			(0.052)	(0.051)
$Earnings\_Volatility_{t-1}$			1.601***	1.627***
			(0.550)	(0.554)
$Z\text{-}score_{t-1}$			−1.474	−1.459
			(1.649)	(1.618)
$Fluidity_{t-1}$			0.943	1.040*
			(0.587)	(0.587)
$Loan\_Maturity_t$		−17.593***	−15.166***	−15.135***
		(2.347)	(2.259)	(2.264)
$Ln\_Loan\_Size_t$		−20.003***	−16.413***	−16.326***
		(1.035)	(1.218)	(1.218)
$Dummy\_Collateral_t$		48.813***	40.465***	40.495***
		(2.959)	(2.948)	(2.934)
$Number\_Lenders_t$		2.493	3.395**	3.493**
		(1.653)	(1.657)	(1.651)
$Dummy\_Covenant_t$		−9.023**	−10.026***	−10.117***
		(3.559)	(3.430)	(3.414)
$Dummy\_Pricing_t$		−17.938***	−15.039***	−14.980***
		(2.302)	(2.255)	(2.246)

TABLE 4 (Continued)

Variables	(1)	(2)	(3)	(4)
Ln_Income_{t-1}				47.853
				(53.455)
$Unemployment_{t-1}$				5.398***
				(2.042)
$Education_{t-1}$				−7.959***
				(2.804)
$Ln\_Population_{t-1}$				−28.823
				(29.798)
$Social\_Capital_{t-1}$				−12.824*
				(6.980)
Red_State_{t-1}				4.603
				(6.003)
$Turned\_Blue_{t-1}$				9.838*
				(5.650)
$Turned\_Red_{t-1}$				−9.465
				(6.116)
Constant	327.476***	461.188***	509.586***	618.689
	(32.510)	(33.076)	(33.722)	(681.271)
Observations	31,653	31,653	31,653	31,653
R-squared	0.671	0.699	0.709	0.709
Loan Type FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Notes: The table shows the impact of economic freedom on loan spreads over the period 1991–2022. Model (1) includes only economic freedom. Model (2) adds loan-level control variables. Model (3) adds additional controls for firm characteristics. Model (4) is the baseline of Equation (1), which includes economic freedom and loan-level, firm-level, and state-level control variables. The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

characteristics in Model 2, loan and borrower characteristics in Model 3, and state characteristics in Model 4. Across all models, the coefficients of economic freedom do not change much, indicating that our main findings are less sensitive to the inclusions of different sets of control variables. Overall, this finding is consistent with our hypothesis ***H1***, which posits that banks charge lower loan prices to firms located in jurisdictions with higher economic freedom.

This result is also economically significant. An increase by one point (i.e., by around one standard deviation) in the economic freedom index lowers the average loan spread by around 12.38 basis points, *ceteris paribus*. Given that the average loan size of our sample is $325.71 million and the average duration of a loan facility is 3.72 years (44.65 months), the interest savings are equivalent to approximately $1.5 million (1.5 = 0.001238 × 325.71 × 3.72).

Regarding control variables, large borrowers, and those with lower levels of leverage and less risk in terms of earnings volatility and higher levels of profitability, tangibility, and cash-holding incur a lower cost of bank loans, which is in line with well-established empirical findings provided by the literature (see, e.g., Hasan et al., 2014, 2017). Competitive threats in the product market (*Fluidity*) also positively and significantly affect loan prices (Valta, 2012; Hasan et al., 2021).

As expected, banks tend to charge lower interest rates on loans that include covenants, lack collateral, have performance pricing provisions, and are larger or longer in maturity. These findings align with the results reported in the extant literature (e.g., Hasan et al., 2017). Additionally, state-level factors such as unemployment, education, social capital, and local political orientation are significantly associated with loan prices. This underscores the importance of controlling for state-level variables to mitigate omitted variable bias. Notably, we find a negative and significant relationship between social capital (*Social Capital*) and loan prices, consistent with the findings of Hasan et al. (2017). Furthermore, we document evidence that borrowers headquartered in states transitioning from Republican to Democrat in US presidential elections (*Turned Blue*) experience increased loan prices. This result may suggest that lenders perceive a shift in a state's political ideology from red to blue as a precursor to changes in the state's institutional context, potentially making it less favorable to corporations (Pe'Er and Gottschalg, 2011; Shin and Webber, 2014).

3.2 | Addressing endogeneity

3.2.1 | Instrumental Variables Estimations

We have estimated Equation (1) assuming that economic freedom is exogenous to the cost of bank loans. Although, to the best of our knowledge, there is no other research documenting a significant effect of the cost of bank loans on economic freedom, there might be some concerns over reverse causality issues. For example, a high cost of borrowing for a state's firms may lead to decreased economic performance that state legislators could attempt to remedy with economic freedom reforms. In our baseline estimations, we try to mitigate, to an extent, this concern by using lagged economic freedom and other explanatory variables. This section attempts to mitigate the endogeneity concern by employing a two-stage least squares instrumental variable (2SLS) approach.

We employ two types of instruments of economic freedom for this test. The first is a state's economic inequality. In terms of the inclusion restriction, the extant literature suggests that economic inequality displays a correlation with economic freedom in both the international context (e.g., Carter, 2007; Bennett and Nikolaev, 2017; Islam, 2018) and the US regional (state) context (e.g., Ashby and Sobel, 2008; Apergis et al., 2014). The empirical evidence regarding the sign of the relationship between economic inequality and economic freedom is mixed. Some studies find this relationship to be positive. In contrast, other studies show a negative correlation. Theoretically, these mixed results can be explained by economic freedom widening income-earning opportunities, thus decreasing inequality, while concurrently, it could decrease income redistribution and thus increase inequality (Ashby and Sobel, 2008). Therefore, we refrain from predicting the sign of the correlation between our economic inequality measures and economic freedom. However, we expect this correlation to be significant.

Regarding the *exclusion restriction*, we highlight that economic inequality within a state may be linked to social capital and the prevalence of employment in large firms. Empirical research demonstrates that economic inequality erodes social capital (Paarlberg et al., 2018; Fehr et al., 2020). This erosion arises from diminished social cohesion and reduced investment in civic engagement in the face of heightened inequality (Putnam, 2000; Paarlberg

et al., 2018). Given that social capital significantly influences the cost of bank loans (Hasan et al., 2017), we include local social capital in our models to address concerns about a potential violation of the *exclusion restriction*.

Additionally, local economic inequality is closely tied to the share of employment in large firms. Cobb and Stevens (2017) show that large US firms reduce state-level inequality through wage compression, offering higher premiums to low- and middle-wage workers to minimize income disparities and harmful social comparisons that could reduce staff morale. However, the recent decline in these premiums for lower-wage workers has weakened this equalizing effect, exacerbating local inequality (Cobb and Lin, 2017). The loan dataset in our analysis (Refinitiv-Dealscan) uses loans granted to large US firms. Therefore, if the cost of bank loans to large firms relates to staff recruitment decisions, this could also affect income inequality. To mitigate, to an extent, this potential violation of the exclusion restriction, we control for firm-level employment growth in the instrumental variable models.

We use three indices of economic inequality. The first is the *Theil index*, an entropy measure with higher values denoting more inequality. The second is the *Atkinson index*, for which, similarly to the Theil index, higher values represent more inequality. The third is the percentage share of each state's population that falls within the top 1% of the state's income distribution (*Top 1%)*. We source data on these three inequality measures from Professor Mark Frank's website.[5] We use the lagged values of these three indices with respect to the economic freedom measure.

For our second type of instrument, we use the lagged, with respect to the economic freedom measure, average change of economic freedom in neighboring states (*NSFree*).[6] The *NSFree* variable could satisfy the *inclusion restriction* as an instrument for economic freedom. Economic policies in one state tend to be affected by neighboring states' economic policies (Berggren and Nilsson, 2016). Berggren and Nilsson (2016) argue that local policymakers adopt policies that have had some success in neighboring states that display a high level of similarity with their home state. Therefore, the potential for such policies to succeed in the policymakers' home states is higher. We expect a significant and positive correlation between the *NSFree* variable and economic freedom in the first stage of the instrumental variable estimations.

Regarding the exclusion restriction, existing literature highlights a significant relationship between political ideology and economic freedom (Castro and Martins, 2021). Additionally, political ideology in the US often clusters geographically (Kinsella et al., 2015). This suggests that economic freedom in neighboring states could potentially influence the cost of bank loans due to similarities in political ideology between the state where a firm is headquartered and its neighbors. To address this potential violation of the *exclusion restriction*, we incorporate three state-level political variables: *Red State*, *Turned Red*, and *Turned Blue*. These variables help account for the prevailing political ideology within a state (*Red State*) and capture shifts in local political ideology (*Turned Red* and *Turned Blue*), mitigating the concern.

The estimations from these instrumental variable tests are in Table 5. In the first stage, economic freedom is instrumented by the *NSFree* variable with either the *Theil*, *Atkinson*, or *Top 1%* indices using an OLS regression (see Models 1, 3, and 5 of Table 5).[7] The instruments exhibit a highly significant relationship with economic freedom. In the second stage, Equation (1) is estimated using the predicted values of economic freedom obtained from the first stages. Despite using different instrument combinations, predicted economic freedom enters negatively and significantly in the second stage of Models 2, 4, and 6 of Table 5. Moreover, the Hansen *J* test about overidentification is insignificant. Overall, the instrumental variable estimations corroborate our baseline finding that economic freedom is associated with decreased loan prices (***H1***). Furthermore, the results of control variables are also consistent with those reported in the baseline model, yielding very similar parameter estimates and significance levels.

[5]https://www.shsu.edu/eco_mwf/inequality.html.

[6]Neighbouring states are those that are geographically connected to a given state. For example, Nevada has five neighbouring states: Oregon, Idaho, Utah, Arizona, and California.

[7]In these models, we lose a few observations as some states (e.g., Alaska and Hawaii) are geographically isolated without neighboring states.

TABLE 5 Economic freedom and loan spreads: Instrumental variables estimations.

Variables	(1) 1st stage	(2) 2nd stage	(3) 1st stage	(4) 2nd stage	(5) 1st stage	(6) 2nd stage
$Prd\_Economic\_Freedom_{t-1}$		−13.637**		−13.668**		−14.029**
		(6.945)		(6.941)		(6.962)
$NSFree_{t-2}$	0.643***		0.641***		0.655***	
	(0.028)		(0.028)		(0.028)	
$Theil_{t-2}$	0.417***					
	(0.134)					
$Atkinson_{t-2}$			0.768***			
			(0.243)			
$Top\ 1\%_{t-2}$					0.011**	
					(0.005)	
$Firm\_Size_{t-1}$	−0.000	−8.017***	0.000	−8.017***	0.000	−8.017***
	(0.002)	(1.499)	(0.002)	(1.499)	(0.002)	(1.499)
$Leverage_{t-1}$	0.000	0.448***	0.000*	0.448***	0.000*	0.448***
	(0.000)	(0.080)	(0.000)	(0.080)	(0.000)	(0.080)
$Tangibility_{t-1}$	−0.000	−0.153*	−0.000	−0.153*	−0.000	−0.153*
	(0.000)	(0.092)	(0.000)	(0.092)	(0.000)	(0.092)
$Cash\_holdings_{t-1}$	0.000	−0.327**	0.000	−0.327**	0.000	−0.327**
	(0.000)	(0.133)	(0.000)	(0.133)	(0.000)	(0.133)
ROA_{t-1}	−0.001**	−1.558***	−0.001**	−1.558***	−0.000**	−1.558***
	(0.000)	(0.173)	(0.000)	(0.173)	(0.000)	(0.173)
$Sales\_Growth_{t-1}$	−0.000	−0.026	−0.000	−0.026	−0.000	−0.026
	(0.000)	(0.039)	(0.000)	(0.039)	(0.000)	(0.039)
$Asset\_Growth_{t-1}$	0.000	0.009	0.000	0.009	0.000	0.009
	(0.000)	(0.054)	(0.000)	(0.054)	(0.000)	(0.054)
$Earnings\_Volatility_{t-1}$	−0.000	1.842***	−0.000	1.842***	−0.000	1.842***
	(0.001)	(0.561)	(0.001)	(0.561)	(0.001)	(0.561)
$Z\text{-}score_{t-1}$	0.004**	−1.395	0.004**	−1.395	0.004**	−1.393
	(0.002)	(1.601)	(0.002)	(1.601)	(0.002)	(1.602)
$Fluidity_{t-1}$	−0.000	1.043*	−0.000	1.043*	−0.000	1.043*
	(0.001)	(0.585)	(0.001)	(0.585)	(0.001)	(0.585)
$Firm\_employment\ gr_{t-1}$	0.000	−0.023	0.000	−0.023	0.000	−0.023
	(0.000)	(0.044)	(0.000)	(0.044)	(0.000)	(0.044)
$Loan\_Maturity_t$	−0.000	−15.001***	−0.000	−15.000***	0.000	−14.998***
	(0.002)	(2.274)	(0.002)	(2.274)	(0.002)	(2.274)

TABLE 5 (Continued)

Variables	(1) 1st stage	(2) 2nd stage	(3) 1st stage	(4) 2nd stage	(5) 1st stage	(6) 2nd stage
$Ln\_Loan\_Size_t$	0.001	−16.268***	0.001	−16.268***	0.000	−16.268***
	(0.001)	(1.243)	(0.001)	(1.243)	(0.001)	(1.242)
$Dummy\_Collateral_t$	−0.001	40.594***	−0.001	40.595***	−0.001	40.598***
	(0.004)	(2.907)	(0.004)	(2.907)	(0.004)	(2.907)
$Number\_Lenders_t$	−0.002	3.583**	−0.002	3.583**	−0.002	3.583**
	(0.002)	(1.664)	(0.002)	(1.664)	(0.002)	(1.665)
$Dummy\_Covenant_t$	0.002	−10.423***	0.002	−10.423***	0.002	−10.421***
	(0.004)	(3.475)	(0.004)	(3.475)	(0.004)	(3.475)
$Dummy\_Pricing_t$	0.001	−14.516***	0.001	−14.517***	0.001	−14.518***
	(0.003)	(2.252)	(0.003)	(2.252)	(0.003)	(2.252)
Ln_Income_{t-1}	1.666***	62.515	1.655***	62.608	1.758***	63.718
	(0.260)	(57.287)	(0.258)	(57.313)	(0.247)	(57.092)
$Unemployment_{t-1}$	−0.008	6.062***	−0.009	6.060***	−0.010	6.042***
	(0.011)	(2.101)	(0.011)	(2.102)	(0.011)	(2.100)
$Education_{t-1}$	0.010	−6.619**	0.005	−6.620**	0.010	−6.626**
	(0.012)	(2.904)	(0.012)	(2.904)	(0.012)	(2.905)
$Ln\_Population_{t-1}$	0.168	−18.137	0.177*	−18.128	0.161	−18.025
	(0.103)	(30.120)	(0.102)	(30.123)	(0.103)	(30.141)
$Social\_Capital_{t-1}$	0.030	−13.275*	0.030	−13.271*	0.031	−13.226*
	(0.037)	(7.160)	(0.037)	(7.164)	(0.037)	(7.165)
Red_State_{t-1}	−0.011	7.240	−0.015	7.240	−0.014	7.244
	(0.026)	(6.124)	(0.026)	(6.124)	(0.026)	(6.124)
$Turned\_Blue_{t-1}$	−0.011	11.008*	−0.012	11.009*	−0.013	11.019*
	(0.023)	(6.040)	(0.023)	(6.040)	(0.023)	(6.037)
$Turned\_Red_{t-1}$	−0.012	−11.988*	−0.010	−11.988*	−0.013	−11.988*
	(0.023)	(6.379)	(0.023)	(6.379)	(0.024)	(6.379)
Constant	−18.103***		−17.086***		−19.283***	
	(3.132)		(3.163)		(3.010)	
Observations	31,143	31,143	31,143	31,143	31,143	31,143
R−squared	0.611	0.115	0.611	0.115	0.610	0.115
UIT p−value	–	0.000	–	0.000	–	0.000
WIT	–	284.45	–	284.22	–	280.39
With critical values	–	19.93	–	19.93	–	19.93
Hansen J−test (p-value)	–	0.855	–	0.904	–	0.252

(Continues)

TABLE 5 (Continued)

Variables	(1) 1st stage	(2) 2nd stage	(3) 1st stage	(4) 2nd stage	(5) 1st stage	(6) 2nd stage
Loan Type FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the impact of economic freedom on loan spreads using a two−stage least square (2SLS) model over the period 1991–2022. Indices of state economic inequality (*Theil/Atkinson/Top 1%*) and economic freedom in neighboring states (*NSFree*) are employed as instrumental variables for economic freedom. The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. UIT is the under-identification LM test by Kleibergen and Paap, WIT is the Wald F-statistic of the weak identification test, which must be higher than its critical value to reject the null Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

3.2.2 | Headquarter relocations test

We next examine cases where firms relocate their headquarters to states with varying levels of economic freedom, employing a difference-in-differences approach.[8] Out-of-state relocations represent corporate headquarters moves that alter the economic freedom environment faced by the borrowing firm. These relocation events thus offer an alternative empirical context to investigate further the impact of local economic conditions on loan spreads. If economic freedom is associated with reduced borrowing costs (***H1***), we anticipate a decline in loan spreads following a firm's move to a state with higher economic freedom.

To test this conjecture, we analyze loan spreads four years before and after the relocation. We source headquarters relocation data from Gao et al. (2021), available at https://mingze-gao.com/posts/firm-historical-headquarter-state-from-10k/. The relocation data are available up to 2018. Consistent with Hasan et al. (2017), we exclude the year of relocation and firms with multiple relocation events to mitigate potential confounding effects. Additionally, we limit the sample to firms that secured at least one loan facility in both the pre-and post-relocation periods and have two years of data available for each period. After applying these criteria, we identify 113 borrower headquarters relocation events, of which 73 involve moving to states with higher economic freedom. The final dataset comprises 1,321 loan observations spanning 1991–2018, with 550 observations corresponding to the pre-relocation period and 771 to the post-relocation period.

We create an indicator variable, $Increasing\ Relocation_{i,t}$, which is set to one if a firm moves to a state with higher economic freedom than the original state and zero otherwise. Additionally, we create another indicator variable, $PostReloc_{i,t}$, which is set to one for the years following the relocation and zero otherwise. The primary variable of interest is the interaction term $Increasing\ Relocation_{i,t} \times PostReloc_{i,t,}$. We depict the findings of this exercise in Panel A of Table 6. In Model 1, we show that the interaction term $Increasing\ Relocation_{i,t} \times PostReloc_{i,t,}$ is negative and significant at the 5% level, suggesting that firms relocating to states with higher economic freedom experience significantly lower loan spreads when compared to loans granted to firms relocating to states with lower economic freedom.

[8]We thank an anonymous Reviewer for suggesting this test.

TABLE 6 Evidence from a Quasi Experiment: Firms with Economic Freedom Changing Headquarters.

Panel A: Regression results based on a difference-in-differences design		
Variables	**(1)**	**(2)**
Increasing Relocation$_t$	65.271	110.574
	(79.797)	(85.180)
PostReloc$_t$	−6.532	1.368
	(16.344)	(14.667)
Increasing Relocation$_t$· *PostReloc*$_t$	−45.036**	−51.072**
	(21.370)	(20.723)
Constant	−1,998.148	−1,482.247
	(5,742.031)	(5,499.091)
Observations	1,321	1,321
R-squared	0.867	0.880
Control Variables	Yes	Yes
Loan Type FE	Yes	Yes
Industry FE	Yes	Yes
Rating FE	Yes	Yes
Lead Lender FE	Yes	Yes
State FE	Yes	Yes
Year FE	Yes	Yes

Panel B: Mean comparison of firm characteristics in the Year Immediately Prior to the Relocation Event			
Variables	**Economic Freedom Increasing relocations**	**Economic Freedom Decreasing relocations**	**t-statistic difference in means**
Firm_size	6.92	5.95	8.38***
Leverage	26.74	22.14	3.05***
Tangibility	33.8	20.86	7.08***
Cash_holdings	9.28	5.21	5.05***
ROA	5.39	9.01	−5.34***
Sales_growth	16.22	21.11	−1.49
Asset_growth	1.58	−0.74	1.33
Earnings_Volatility	0.94	0.38	4.16***
Z-score	1.64	2.13	−4.13***
Fluidity	7.29	6.22	3.81***

Panel C: Mean comparison of firm characteristics in the Year immediately Prior to the Relocation Event after Entropy Balancing		
Variables	**Economic Freedom Increasing relocations**	**Economic Freedom Decreasing relocations**
Firm_size	6.92	6.92
Leverage	26.74	26.74

(Continues)

TABLE 6 (Continued)

Panel C: Mean comparison of firm characteristics in the Year immediately Prior to the Relocation Event after Entropy Balancing		
Variables	**Economic Freedom Increasing relocations**	**Economic Freedom Decreasing relocations**
Tangibility	33.8	33.8
Cash_holdings	9.282	9.281
ROA	5.39	5.392
Sales_growth	16.22	16.22
Asset_growth	1.578	1.577
Earnings_Volatility	0.9415	0.9413
Z-score	1.635	1.635
Fluidity	7.294	7.294

Notes: Panel A of Table 6 reports the findings of a difference-in-differences analysis based on the quasi-experiment. The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. We employ all the control variables of the baseline estimation. *Increasing Relocation* equals 1 if a firm relocates its headquarters to a state with higher level of economic freedom, while it equals 0 if a firm relocates to a state with a lower level of economic freedom. *PostReloc* is a dummy which is equal to 1 if the observation is following a relocation event, while it equals 0 if the observation is prior to the relocation event. Panel B reports descriptive statistics of the difference in the pre-relocation mean values of firm-level characteristics across the two respective samples, namely, firms with economic freedom-increasing relocations and firms with economic freedom-decreasing relocations. Panel C reports the means of the borrowing firms' characteristics in the pre-relocation period after applying entropy balancing. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. Data on corporate headquarters relocations are available up to 2018, and the source is Gao et al. (2021) and the website: https://mingze-gao.com/posts/firm-historical-headquarter-state-from-10k/. The full definitions of the variables are in Table A1 of the Appendix.

However, Panel B of Table 6 reveals that certain variables for borrowing firms differ significantly in the year immediately preceding the relocation event between the two groups: firms relocating to states with higher economic freedom and those relocating to states with lower economic freedom. This discrepancy may challenge a key assumption of the difference-in-differences analysis, which requires the two groups being compared to have similar characteristics. To address this issue, we employ the entropy balancing method (Hainmueller, 2012). Entropy balancing is a re-weighting method that assigns weights to the control group to ensure covariate balance by aligning key distributional moments (mean, variance, and skewness) between the groups.[9] Specifically, we apply entropy balancing to the pre-relocation characteristics of firms that eventually relocate to lower economic freedom states, generating weights that minimize differences in covariate distributions. These weights make the two groups comparable and are incorporated into the difference-in-difference model to adjust for significant pre-relocation differences in firm characteristics. Panel C of Table 6 depicts the near identical means of the characteristics of the two groups of firms in the pre-relocation period after applying the entropy balancing method. In Model 2 of Table 6,

[9]Prior research (Hainmueller, 2012; Glendening et al., 2019; Boland and Godsell, 2020) highlights that entropy balancing displays several advantages in comparison to propensity score matching: (i) Entropy balancing aligns the treatment and control groups across multiple statistical moments, including mean, variance, and skewness, resulting in a more precise match than propensity score matching; (ii) Unlike propensity score matching, which frequently excludes unmatched observations, entropy balancing retains the entire sample, maximizing the data available for analysis; and iii) Entropy balancing reduces model dependency by directly adjusting covariates, thereby ensuring that any observed effects are less influenced by the specific assumptions of the matching model.

we continue to find a negative and significant coefficient on the *Increasing Relocation*$_{i,t}$ × *PostReloc*$_{i,t}$, interaction after adjusting the borrowing firms' characteristics in the pre-relocation period with entropy balancing.

Overall, the findings from the headquarters relocation tests provide further empirical support to hypothesis ***H1*** regarding the negative effect of local economic freedom on the cost of bank loans.

3.3 | Economic freedom components and the cost of bank loans

To gain further insight into the impact of economic freedom on banks' loan pricing, we decompose economic freedom into its components: freedom from government spending, taxation freedom, and labor freedom. Table 7 reports the impact of these components on loan prices. In Model 1, freedom from government spending exhibits a negative and significant at the 5% level with loan spreads. This result supports hypothesis ***H2***, indicating that freedom from government spending creates a more favorable environment for firms by reducing crowding-out effects (Kim and Nguyen, 2020). Reduced government intervention likely allows firms to manage resources more efficiently and pursue growth-oriented strategies, which could make them more attractive to lenders. This finding is consistent with the idea that lower crowding-out effects enhance firms' ability to operate effectively, contributing to reduced loan costs (Hao and Lu, 2018; Kim and Nguyen, 2020; Kong, 2020).

Similarly, in Model 2 of Table 7, taxation freedom displays a negative and significant relationship with loan prices at the 5% level. This finding supports hypothesis ***H3***, suggesting that firms in states with higher taxation freedom benefit from reduced borrowing costs. Lower taxation allows firms to retain more resources, enabling them to pursue growth-oriented strategies and capitalize on investment opportunities (Donohoe et al., 2022; Green and Kerr, 2022). Banks likely recognize the positive effects of lower taxation on firms' competitiveness and performance, as evidenced by prior studies linking lower tax burdens to enhanced investment and productivity (Djankov et al., 2010; Auerbach, 2018; Crawford and Markarian, 2024; Gallemore et al., 2025). Nevertheless, in Model 3 of Table 7, we do not find support for hypothesis ***H4***, as the relationship between freedom in the labor market and loan prices is not significant.

3.4 | Economic mechanism: The role of investment and growth opportunities

This study proposes that the effect of local economic freedom on the cost of bank loans derives from the investment and growth opportunities channel. Previous research shows that economic freedom enhances firms' ability to capitalize on investment and growth opportunities because firms can more easily adjust their strategy and operations to exploit such opportunities in more economically free environments (Chen et al., 2015). We argue that lenders value the enabling environment provided by economic freedom around borrowers' headquarters, as it allows borrowers to leverage the opportunities available to them effectively. This, in turn, fosters greater lender confidence in the borrowers' potential for sustainable performance and growth. The descriptive statistics evidence in our sample in Table 3 also supports this conjecture as firms in high economic freedom areas tend to exhibit higher sales and asset growth and display higher profitability. This denotes a stronger capacity to exploit investment and growth opportunities. To test for evidence consistent this channel, we include interaction terms in our analysis to determine whether investment and growth opportunities amplify the negative association between local economic freedom and loan spreads.

First, we use a firm-specific measure of investment and growth opportunities, the market-to-book assets ratio (*MTB ratio*). We measure the *MTB ratio* as the market value of the assets divided by the book value of assets (Billet et al., 2007). Previous research shows that the *MTB* ratio has the highest information content regarding firm-specific investment opportunities (Adam and Goyal, 2008) and is commonly used as a firm-specific investment opportunity proxy in several studies (e.g., Balachandran and Duong, 2019; Heitzman

TABLE 7 Economic freedom and loan spreads: Economic freedom components.

Variables	(1)	(2)	(3)
$Gov\_Spending\_Freedom_{t-1}$	−5.965**		
	(2.739)		
$Taxation\_Freedom_{t-1}$		−11.761**	
		(4.970)	
$Labor\_Freedom_{t-1}$			1.172
			(4.057)
$Firm\_Size_{t-1}$	−8.184***	−8.235***	−8.195***
	(1.455)	(1.456)	(1.456)
$Leverage_{t-1}$	0.441***	0.438***	0.439***
	(0.082)	(0.082)	(0.083)
$Tangibility_{t-1}$	−0.188**	−0.191**	−0.191**
	(0.090)	(0.090)	(0.090)
$Cash\_holdings_{t-1}$	−0.338***	−0.338***	−0.335***
	(0.125)	(0.125)	(0.125)
ROA_{t-1}	−1.599***	−1.601***	−1.598***
	(0.173)	(0.173)	(0.174)
$Sales\_Growth_{t-1}$	−0.016	−0.015	−0.016
	(0.041)	(0.041)	(0.041)
$Asset\_Growth_{t-1}$	0.003	0.001	0.002
	(0.051)	(0.051)	(0.051)
$Earnings\_Volatility_{t-1}$	1.795***	1.745***	1.793***
	(0.564)	(0.563)	(0.565)
$Z\text{-}score_{t-1}$	−1.536	−1.453	−1.536
	(1.622)	(1.619)	(1.621)
$Fluidity_{t-1}$	0.995*	1.031*	1.004*
	(0.586)	(0.586)	(0.586)
$Loan\_Maturity_t$	−15.129***	−15.156***	−15.225***
	(2.271)	(2.268)	(2.275)
$Ln\_Loan\_Size_t$	−16.313***	−16.291***	−16.310***
	(1.226)	(1.227)	(1.228)
$Dummy\_Collateral_t$	40.843***	40.683***	40.707***
	(2.924)	(2.928)	(2.927)
$Number\_Lenders_t$	3.454**	3.386**	3.448**
	(1.654)	(1.652)	(1.656)

TABLE 7 (Continued)

Variables	(1)	(2)	(3)
$Dummy\_Covenant_t$	−10.692***	−10.757***	−10.802***
	(3.429)	(3.428)	(3.435)
$Dummy\_Pricing_t$	−15.013***	−15.046***	−14.940***
	(2.239)	(2.238)	(2.234)
Ln_Income_{t-1}	34.532	18.466	4.368
	(54.751)	(54.228)	(54.765)
$Unemployment_{t-1}$	4.603**	5.718***	5.720***
	(2.111)	(2.020)	(2.018)
$Education_{t-1}$	−6.706**	−8.551***	−7.348**
	(2.883)	(2.861)	(2.856)
$Ln\_Population_{t-1}$	−29.350	−24.826	−31.239
	(29.851)	(30.117)	(29.748)
$Social\_Capital_{t-1}$	−12.756*	−11.632	−13.705*
	(7.011)	(7.187)	(6.989)
Red_State_{t-1}	2.345	3.975	3.884
	(6.100)	(6.035)	(6.334)
$Turned\_Blue_{t-1}$	8.500	9.311	9.207
	(5.733)	(5.663)	(5.997)
$Turned\_Red_{t-1}$	−8.855	−9.674	−9.343
	(6.122)	(6.063)	(6.115)
Constant	706.017	874.547	1,016.215
	(694.273)	(683.590)	(674.651)
Observations	31,653	31,653	31,653
R−squared	0.704	0.704	0.704
Loan Type FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Notes: The table shows the effects of economic freedom's components (government spending freedom, taxation freedom, and labor freedom) on loan spreads over the period 1991–2022. The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

and Huang, 2019; Jin et al., 2024).[10] We depict the findings of this exercise in Panel A of Table 8. In Model 1, we show that the association between economic freedom and loan spreads continues to be significant at the 5% level when we control for the market-to-book ratio (*MTB*). The coefficient of *MTB* is negative and significant at the 1% level, denoting that lenders favor borrowers with higher investment and growth opportunities. In Model 2, we interact *MTB* with the economic freedom index. This interaction is negative and significant at the 1% level. In the same Model, the individual effects of economic freedom and *MTB* are insignificant. This provides evidence consistent with the investment and growth opportunity channel. Investment and growth opportunities amplify the negative relationship between economic freedom and loan spread. Banks appear to recognize that firms with greater investment and growth opportunities are better positioned to capitalize on them when headquartered in locations with higher economic freedom, as hypothesis ***H1*** posits.[11]

The remaining models in Panel A of Table 8 provide additional insights into the components of the economic freedom index. We find that the interactions between the *MTB* ratio and freedom from government spending and freedom from taxation are negative and significant, at least at the 5% level (Models 3 and 4). In Model 5, the interaction between labor freedom and the *MTB* ratio is also negative and significant, though at the 10% level. The last result suggests that lenders not only view freedom from taxation and government spending as enablers of borrowers' ability to capitalize on their investment and growth opportunities but also recognize freedom from labor regulation as playing a similar role. This finding is consistent with research demonstrating the beneficial effects less stringent labor regulation exerts on firms' flexibility to adjust labor resources to invest and grow (Almeida and Carneiro, 2009; Bai et al., 2020).

Next, we provide additional evidence consistent with the investment and growth opportunities channel by using a proxy for location-specific expected future investment and growth opportunities, as Drobetz et al. (2018) suggest. Specifically, we source the *Leading Index* for each US state from the *Federal Reserve Bank of Philadelphia*. This index predicts the six-month growth rate of a state's coincident index, an official measure of local economic conditions.[12] As a forward-looking measure of local economic growth potential, the *Leading Index* effectively proxies for location-specific expected future investment and growth opportunities. Similarly, Drobetz et al. (2018) use leading indicators of local economic activity as proxies for the external, location-specific investment and growth opportunities available to firms. The estimations in Panel B of Table 8 show that the interactions between the *Leading Index* and economic freedom and its components are negative and significant. These findings provide further evidence consistent with investment and growth opportunities facilitating the negative relationship between local economic freedom and loan spreads.

Overall, the analyses presented in Table 8 underscore that lenders perceive local economic freedom as a critical factor enabling borrowers to capitalize on firm-level and local investment and growth opportunities. Consequently, lenders reward such borrowing firms with reduced loan spreads.

[10]Using the market-to-book equity ratio as an alternative measure of firm-specific investment and growth opportunities produces similar results. These estimations are available upon request.

[11]The sample mean for the *MTB* ratio is 1.76, which is comparable to the 1.81 in the study of Billett et al. (2007). Interestingly, firms in states with lower economic freedom exhibit higher average *MTB* ratios, suggesting that market valuations anticipate untapped investment and growth potential. Specifically, the mean *MTB* ratio for firms in low economic freedom states (bottom quartile) is 1.89, compared to 1.65 for firms in high economic freedom states (top quartile), a difference that is statistically significant at the 1% level (t = 13.99). Subsample regressions reveal that the *MTB* ratio does not significantly impact loan spreads in low economic freedom states but shows a negative and significant association with loan spreads in high economic freedom states. The difference in coefficients is statistically significant at the 1% level (t = 3.66). These findings highlight that the *MTB* ratio reduces loan spreads only in the presence of high economic freedom, underscoring the importance of its interaction with economic freedom and providing further evidence for the proposed economic mechanism. The results of the subsample tests are available upon request.

[12]The state-level *Leading Index* of the *Federal Reserve Bank of Philadelphia* was discontinued in 2020, with the latest available full year of the index being 2019. Consequently, the analysis presented in Panel B of Table 8 extends up to 2020, resulting in a reduction of observations. As an alternative measure of local investment and growth opportunities, we use each state's percentage change in GDP (GDP growth), sourced from the US *Bureau of Economic Analysis* (BEA), which is available up to the end of the sample period (i.e., 2022). The results from this alternative measure are consistent with those in Panel B of Table 8 and are available upon request. We choose to present the results using the *Leading Index* in Panel B of Table 8 due to its forward-looking nature.

TABLE 8 Economic freedom and loan spreads: The role of investment and growth opportunities.

Panel A: Market–to–Book Assets (MTB) ratio					
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Economic_Freedom$_{t-1}$	−11.455**	−7.287			
	(5.217)	(5.488)			
MTB ratio$_{t-1}$	−6.881***	6.464	2.941	3.048	1.606
	(1.183)	(5.011)	(3.760)	(5.083)	(5.233)
Economic_Freedom$_{t-1}$* MTB ratio*$_{t-1}$		−2.274***			
		(0.858)			
Gov_Spending_Freedom$_{t-1}$			−2.794		
			(2.916)		
Gov_Spending_Freedom$_{t-1}$* MTB ratio*$_{t-1}$			−1.523***		
			(0.565)		
Taxation_Freedom$_{t-1}$				−7.980	
				(5.378)	
Taxation_Freedom$_{t-1}$* MTB ratio*$_{t-1}$				−1.863**	
				(0.932)	
Labor_Freedom$_{t-1}$					4.610
					(4.481)
Labor_Freedom$_{t-1}$* MTB ratio*$_{t-1}$					−1.559*
					(0.944)
Constant	594.079	621.597	709.474	858.095	1,015.119
	(680.565)	(680.352)	(691.809)	(682.175)	(673.407)
Observations	31,576	31,576	31,576	31,576	31,576
R-squared	0.710	0.710	0.705	0.705	0.705
Panel B: Leading Index					
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Economic_Freedom$_{t-1}$	−12.879**	−6.588			
	(5.200)	(5.438)			
Leading_Index$_{t-1}$	2.479	27.839***	17.332***	26.949***	25.937***
	(2.698)	(8.109)	(5.826)	(9.475)	(8.125)
Economic_Freedom$_{t-1}$* Leading_Index*$_{t-1}$		−4.474***			
		(1.377)			
Gov_Spending_Freedom$_{t-1}$			−2.672		
			(2.801)		
Gov_Spending_Freedom$_{t-1}$* Leading_Index*$_{t-1}$			−2.507***		
			(0.862)		

(Continues)

TABLE 8 (Continued)

Panel B: Leading Index					
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Taxation_Freedom$_{t-1}$				−6.561	
				(5.560)	
Taxation_Freedom$_{t-1}$ **Leading_Index*$_{t-1}$				−4.421***	
				(1.669)	
Labor_Freedom$_{t-1}$					6.085
					(4.639)
Labor_Freedom$_{t-1}$* *Leading_Index*$_{t-1}$					−4.509***
					(1.485)
Constant	565.738	590.716	823.655	845.782	756.087
	(702.886)	(694.646)	(691.980)	(682.469)	(685.164)
Observations	30,252	30,252	30,252	30,252	30,252
R−squared	0.699	0.699	0.699	0.699	0.699
Panels A & B					
Control Variables	Yes	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the mediating role, as an economic mechanism, of investment and growth opportunities in the relationship between economic freedom and loan spreads over the period 1991–2022. Panel A uses the market-to-book assets ratio (*MTB* ratio) as a proxy for firm-specific investment and growth opportunities. Panel B uses the *Leading Index* of each state that we source from the *Federal Reserve Bank of Philadelphia*. The *Leading index* for each state predicts the six-month growth rate of the state's coincident index, which is an official measure of local economic conditions. Note that the latest year available for the state-level *Leading Index* is 2019. The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

4 | FURTHER ANALYSES AND ROBUSTNESS TESTS

4.1 | Alternative economic mechanism: Local economic freedom and the local banking sector

An alternative economic mechanism that could explain the relationship between local economic freedom and loan spreads is the potential impact of the former on local (intra-state) lenders. Our baseline findings in Table 4 demonstrate a significant negative relationship between local economic freedom and loan spreads. The analysis in

Table 8 further suggests that lenders perceive local economic freedom as a factor that could enable borrowing firms to capitalize on their investment and growth opportunities, resulting in loans with reduced spreads. However, the mechanisms linking local economic freedom with the cost of bank loans may not operate solely through enhancing borrowing firms' ability to exploit investment and growth opportunities. Alternative economic mechanisms, such as the efficiency of the local banking sector, could also play a role in this relationship.

The economic freedom index also influences the operational environment of local banks headquartered in a state. Furthermore, loan spreads are shaped not only by borrower-specific factors but also by lender behavior and conditions within the banking industry. Therefore, the characteristics of the local banking sector could play an important role in facilitating the relationship between economic freedom and the cost of bank loans.

Gropper et al. (2015) show that local economic freedom in the US improves the performance of local banks. Additional studies in the US and international contexts suggest that economic freedom enhances banking sector efficiency (Mamatzakis et al., 2013; Chortareas et al., 2016; Asteriou et al., 2021). These studies indicate that economic freedom may reduce regulatory barriers, improve competition among banks, or enable more efficient resource allocation, thereby boosting the operational performance of local lenders. This, in turn, raises the possibility that improved efficiency of local lenders in more economically free states translates into lower loan spreads for borrowing firms. Thus, the local banking sector represents an alternative channel worth exploring.

We create an indicator variable, *Intra-state Lender* to test for evidence consistent with this channel. This variable equals one if the lead lender, the bank responsible for setting loan terms and conducting screening and monitoring, is headquartered in the same state as the borrowing firm and zero otherwise. We use information from Compustat Bank for the lender information. As these data are available only from 1993 onwards, the sample loses some observations from the beginning of the sample in 1991. Around 14% of the sample's loans are granted by an intrastate lender. The results of this analysis are in Model 1 of Table 9. The interaction between local economic freedom and the *Intra-state Lender* indicator is negative but not statistically significant. However, the individual effect of economic freedom on loan spreads remains negative and significant.

In Model 2 of Table 9, we extend the analysis by introducing state-level controls relevant to the local banking sector. These controls include the concentration of the local banking industry, captured through the state HHI index (*State HHI Banks*) based on the assets of local commercial banks. We also include measures of the aggressiveness of local lenders' policies, using state-level annual loan growth calculated from the sum of net loans of local commercial banks (*State Loan Growth*). Additionally, we account for the risk-taking behavior of the local banking sector using the sum of loan reserves as a ratio of the sum of total loans of local commercial banks (*State Loan Reserves*). The results of Model 2 in Table 9 continue to show that the interaction between *Intra-state Lender* and economic freedom is not significant. However, the negative association between economic freedom and loan spreads remains significant at the 5% level, even after controlling for the characteristics of the local banking industry. Interestingly, local bank industry concentration (*State HHI Banks*) displays a positive and significant relationship with loan spreads. Aggressive lending policies of the local banking sector (*State Loan Growth*) show a negative and significant association with loan spreads. These findings align with research showing that local banking industry concentration increases loan prices while aggressive loan growth reduces them (Foos et al., 2010; Mi and Han, 2020).

Overall, the findings from the tests in Table 9 do not find supporting empirical evidence that the local banking sector facilitates the relationship between economic freedom and the cost of bank loans for local borrowing firms. However, these results offer additional insights into the role of local banking industry characteristics in shaping loan prices.

4.2 | Cross-sectional tests based on firm size

Banks might favor local economic freedom more when borrowing firms concentrate their operations in their headquarters state. Previous research shows that most of the operations of the average US firm in Compustat are in its home state (Garcia and Norli, 2012). Furthermore, the concentration of firms' operations in their home state

TABLE 9 Economic freedom and loan spreads: The role of the local banking sector.

Variables	(1)	(2)
$Economic\_Freedom_{t-1}$	−12.816**	−13.314**
	(5.567)	(5.265)
$Intra-state\_Lender_t$	−17.189	−13.414
	(31.022)	(30.916)
$Economic\_Freedom_{t-1}$* $Intra-state\_Lender_t$	2.391	1.570
	(5.579)	(5.560)
$State\_HHI\_Banks_{t-1}$		21.128***
		(7.713)
$State\_Loan\_Growth_{t-1}$		−73.589**
		(29.698)
$State\_Loan\_Reserves_{t-1}$		−5.861
		(3.862)
Constant	870.991	922.682
	(712.221)	(711.192)
Observations	29,184	29,184
R-squared	0.709	0.712
Control Variables	Yes	Yes
Loan Type FE	Yes	Yes
Industry FE	Yes	Yes
Rating FE	Yes	Yes
Lead Lender FE	Yes	Yes
State FE	Yes	Yes
Year FE	Yes	Yes

Notes: The table shows the role of the local banking sector in the relationship between economic freedom on loan spreads over the periods 1994–2022. Models 1 and 2 are constrained in terms of the period because of data availability from Compustat Bank. Model 1 includes the *Intra-state Lender* dummy variable, which equals one if the lead lender of a loan facility is a bank headquartered in the same state as the borrowing firm and zero otherwise. Model 2 includes state-level controls relevant to the banking sector. These variables include the concentration of the local banking sector (*State HHI Banks)*, the aggressiveness of local lenders' policies (*State Loan Growth)*, and the risk-taking behavior of the local banking sector (*State Loan Reserves*). The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

highly correlates with their size (Garcia and Norli, 2012). To this end, we expect the negative association of local economic freedom to be more evident for smaller firms, who are more likely to concentrate their operations around their headquarters.

In Model 1 of Table 10, we find that the interaction term between firm size and economic freedom is negative and significant at the 1% level. In the same Model, the individual effect of economic freedom on loan spreads is also

TABLE 10 Economic freedom and loan spreads: The conditioning effect of firm size.

Variables	(1)	(2)	(3)	(4)	(5)
Economic_Freedom$_{t-1}$	−25.525***	−25.528**			
	(7.331)	(11.227)			
HQST Majority$_{t-1}$		20.338			
		(14.515)			
Economic_Freedom$_{t-1}$* HQST Majority*$_{t-1}$		−4.300*			
		(2.487)			
Firm_Size$_{t-1}$	−20.189***	−8.112***	−15.426***	−21.951***	−17.550***
	(4.171)	(2.777)	(3.200)	(4.261)	(4.127)
Economic_Freedom$_{t-1}$* Firm_Size*$_{t-1}$	1.970***				
	(0.688)				
Gov_Spending_Freedom$_{t-1}$			−12.696***		
			(3.914)		
Gov_Spending_Freedom$_{t-1}$* Firm_Size*$_{t-1}$			1.072**		
			(0.442)		
Taxation_Freedom$_{t-1}$				−29.267***	
				(7.632)	
Taxation_Freedom$_{t-1}$ * *Firm_Size*$_{t-1}$				2.466***	
				(0.757)	
Labor_Freedom$_{t-1}$					−9.868
					(6.861)
Labor_Freedom$_{t-1}$* *Firm_Size*$_{t-1}$					1.657**
					(0.724)
Constant	832.340	−1,154.001	925.419	1,009.923	1,175.572*
	(691.752)	(2,192.125)	(709.076)	(689.844)	(680.736)
Observations	31,653	10,234	31,653	31,653	31,653
R−squared	0.710	0.713	0.704	0.705	0.704
Control Variables	Yes	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the conditioning effect of firm size on the relationship between economic freedom on loan spreads over the period 1991–2022. The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. The dummy *HQST Majority* takes the value of one for firms that concentrate the majority (above 50%) of their operations in their headquarters state and zero otherwise based on data from Garcia and Norli (2012). Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

negative and significant. This finding implies that the negative association of local economic freedom with the cost of bank loans is more evident for smaller firms that are more likely to concentrate their operations around their headquarters. To further enhance this interpretation, we use data on the geographic dispersion of US firms from Garcia and Norli (2012). We construct a dummy (*HQST Majority*) that takes the value of one for firms that concentrate the majority (above 50%) of their operations in their headquarters state and zero otherwise. We lose around 65% of the sample observations as Garcia and Norli (2012) cover a limited period (1994–2008). In Model 2 of Table 10, we find that the interaction between economic freedom and the *HQST Majority* variable is negative and significant at the 10% level, denoting that economic freedom is more likely to reduce the cost of bank loans for firms with the majority of their operations in their home state.

In Models 3, 4, and 5 of Table 10, we find results consistent with Model 1 regarding the interactions between firm size and components of economic freedom (freedom from government spending, freedom from taxation, and labor freedom). Notably, in Model 5, the interaction between firm size and labor freedom is positive and significant at the 5% level. This suggests that lenders view labor freedom as enabling smaller firms, which tend to concentrate operations in their headquarters state, to adjust labor resources efficiently and seize investment and growth opportunities. In contrast, larger firms, more likely to exhibit geographically dispersed operations, benefit less from local labor freedom.

4.3 | Effects of economic freedom on non-price loan terms

In Table 11, we further extend our analysis by exploring the association of economic freedom with other loan characteristics, in particular, loan size, maturity, covenants, their intensity, and loan fees. We start by examining how economic freedom affects loan size and maturity, and the results show that economic freedom is significantly associated with longer loan maturity (see Model 1 of Table 11).

We also replace the dependent variable with dummy variables for loan covenants (*Dummy_Covenant*) and collateral requirements (*Dummy_Collateral*) to capture how economic freedom affects the stringency of loan terms when firms obtain loan facilities. The results of probit estimations in Models 3 and 4 of Table 11 indicate that economic freedom does not seem to affect the presence of collateral and covenant requirements in a loan facility. Then, we carry out Poisson estimations using as dependent variables the intensity of loan covenants (numbers of general covenants and financial covenants); Model 5 of Table 11 shows that economic freedom displays a significantly negative association with the number of general covenants associated with a loan facility. These tests reveal that firms headquartered in states with higher economic freedom incur less stringent non-price loan terms.

Further, following Delis et al. (2020, 2022), we use an alternative loan price measure, the *"all-in-spread undrawn."* This is defined as the sum of facility and commitment fees. Hence, it is a proxy for the fees incorporated in loan facilities, another component of the total cost of bank loans (Berg et al., 2016). The commitment fee is crucial for a bank to maintain a credit line and ensure its availability, as it offsets the opportunity cost associated with this commitment (Delis et al., 2022). Note that the number of observations drops substantially because the availability of this variable is limited in the Refinitiv-Dealscan database. Nevertheless, this proxy of loan fees has the most comprehensive coverage to perform meaningful analysis with an adequate number of observations. Model 7 of Table 11 shows how economic freedom significantly influences loan fees (*Loan_fees*) or all-in-spread undrawn. The coefficient of economic freedom enters negatively, indicating that economic freedom reduces not only the price of a loan facility but also its associated fees. This is consistent with our finding that economic freedom helps reduce the cost of corporate borrowing from the banking sector. Finally, in Model 8 of Table 11, we replicate the baseline model controlling for *Loan Fees*. The association of economic freedom with loan spreads remains negative and significant at the 5% level even after controlling for *Loan Fees*.

TABLE 11 Economic freedom and other loan contract terms.

Variables	(1) Loan_Maturity	(2) Ln_Loan_Size	(3) Dummy_Covenant	(4) Dummy_Collateral	(5) General Covenants	(6) Financial Covenants	(7) Loan_Fees	(8) Loan_Spread
$Economic\_Freedom_{t-1}$	0.051*	−0.036	0.001	−0.005	−0.054**	0.041	−2.582***	−11.082**
	(0.027)	(0.035)	(0.054)	(0.054)	(0.026)	(0.028)	(0.961)	(4.655)
$Loan\_Fees_t$								2.734***
								(0.103)
Constant	4.811	−17.247***	−4.069	−6.679	−12.379***	2.321	−96.364	−0.285
	(3.612)	(5.196)	(6.540)	(6.531)	(3.825)	(4.500)	(109.592)	(566.879)
Observations	31,653	31,653	31,653	31,653	31,653	31,653	15,213	15,213
R-sq/Pseudo	0.658	0.850	0.312	0.352	0.494	0.317	0.778	0.817
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the impact of economic freedom on other loan contract terms, including loan maturity, loan size, covenant requirement, collateral requirement, number of general covenants, number of financial covenants, loan fees, and Loan spread (controlling for loan fees) over the period 1991–2022. Models 3 and 4 are Probit models. Models 5 and 6 are Poisson models. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

4.4 | Alternative measure of economic freedom

To check for the robustness of the main findings, we employ an alternative measure of economic freedom in 50 US states (*CATO_Eco_Freedom*) that we source from the *CATO Institute*. This index has a 0–100 range and comprises two components: fiscal freedom, which relates to state-level taxation (*CATO_Fiscal_Freedom*), and regulatory freedom, which refers to freedom from local regulatory constraints (*CATO_Reg_Freedom*). Therefore, this alternative index is similar to the economic freedom index of the *Fraser Institute* that we use in the main empirical analysis.

Model 1 of Table 12 confirms the negative and significant association of economic freedom with loan prices, indicating that firms obtain cheaper loans in states with higher levels of economic freedom. Note that the number of observations in the model drops because this alternative economic freedom index is available only from 2000.

TABLE 12 Economic freedom and loan spreads: Alternative measure of economic freedom.

Variables	(1)	(2)	(3)	(4)	(5)
$CATO\_Eco\_Freedom_{t-1}$	−64.062**	−59.986**	−40.053	−89.855***	−65.701**
	(30.161)	(30.011)	(31.882)	(31.083)	(33.078)
$MTB\ ratio_{t-1}$		−7.435***	−8.442***		
		(1.543)	(1.658)		
$CATO\_Eco\_Freedom_{t-1}$* $MTB\ ratio_{t-1}$			−10.673***		
			(4.006)		
$Leading\_Index_{t-1}$				4.275	2.502
				(2.892)	(2.899)
$CATO\_Eco\_Freedom_{t-1}$* $Leading\_Index_{t-1}$					−17.785***
					(5.238)
Constant	814.018	854.554	939.968	817.101	990.117
	(920.534)	(914.633)	(914.434)	(936.605)	(939.252)
Observations	23,280	23,231	23,311	21,879	21,879
R-squared	0.720	0.720	0.721	0.707	0.707
Control Variables	Yes	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the impact of economic freedom on loan spreads using alternative measures of economic freedom and its components obtained from *CATO Institute* over the period 2000–2022. The alternative index is available since 2000. In Models 3 and 5 we also interact the two proxies of investment and growth opportunities (*MTB* ratio and *Leading Index*) with the alternative measure of economic freedom to test the economic mechanism. The *Leading Index* is available up to 2019. The dependent variable is *Loan spread*, which is the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

Then, we provide robustness tests regarding the economic mechanism. In Model 2 of Table 12, we control for the proxy of firm-level investment and growth opportunities, the market-to-book asset ratio (*MTB*). The coefficient of the alternative economic freedom index remains negative and significant. We extend this analysis in Models 4 and 5 of Table 12 using the proxy for local investment and growth opportunities: the state-level *Leading Index* from the *Federal Reserve Bank of Philadelphia*. The results remain consistent, with significant negative interactions between *CATO_Eco_Freedom* and the *Leading Index*.

In untabulated findings, available upon request, we further confirm these findings by decomposing this alternative economic freedom index to its fiscal freedom (*CATO_Fiscal_Freedom*) and regulatory freedom (*CATO_Reg_Freedom*) components.

Overall, the alternative economic freedom measure results align with our baseline findings. They provide further evidence that economic freedom reduces loan spreads. These results also support the economic mechanism that banks perceive economic freedom as a critical factor for borrowing firms to capitalize on investment and growth opportunities.

4.5 | Additional state-level controls

Next, we control for additional state-level variables. We use corruption-related conviction data from the *US Department of Justice (DOJ)* and create a proxy for state-level public corruption. This variable is the number of convictions of local public officials for corruption-related crimes normalized by a state's population. Previous studies show that corruption around a borrower's state could negatively affect bank credit access and increase loan prices (Hossain et al., 2020; Bermpei et al., 2021). In Model 1 of Table 13, the association between economic freedom and loan spreads remains negative and significant when we control for state corruption. State corruption is positively associated with loan spreads, consistent with prior studies that link corruption to more expensive bank credit.

In Model 2 of Table 13, we control for the state government ideology with data we source from the website of Professor Richard Fording (https://rcfording.wordpress.com/state-ideology-data/). Note that these data are available up to 2017. The association of economic freedom with loan spreads remains negative and significant at the 1% level. This finding further supports that our findings are not driven by local political ideology.

In Model 3 of Table 13, we control for the personal freedom index, which measures state policies about personal choices, such as tobacco use and gun rights, of the *CATO Institute*. By controlling for personal freedom, we ensure that our findings are driven by economic policies rather than unrelated state-level policies concerning individual liberties. The personal freedom index does not appear to influence loan spreads significantly, further validating the role of economic freedom. Finally, in Model 4 of Table 13, we use the principal component of the *Fraser* and *CATO* indices as an alternative economic freedom proxy. The principal component's coefficient is negative and significant.

Overall, these robustness tests provide further support for our main findings. Controlling for state corruption, government ideology, and personal freedoms ensures that the negative association between economic freedom and loan spreads is not driven by confounding state-level factors. Furthermore, the significant negative coefficient of the principal component of the *Fraser* and *CATO* indices reinforces the consistency of our results across alternative measures of economic freedom.

5 | CONCLUSION

We fill a gap in the literature by providing a comprehensive analysis of the relationship between local economic freedom in the US and the cost of bank loans. We find robust evidence that more economic freedom in borrowing firms' headquarters states is associated with lower loan spreads. Our analysis also provides evidence of the

TABLE 13 Economic freedom and loan spreads: Additional state-level controls.

Variables	(1)	(2)	(3)	(4)
Economic_Freedom$_{t-1}$	−13.394***	−16.026***		
	(5.152)	(5.786)		
Corruption convictions$_{t-1}$	17.154**			
	(8.433)			
Government ideology$_{t-1}$		−6.934		
		(4.608)		
CATO Economic_Freedom$_{t-1}$			−70.361**	
			(30.247)	
CATO Personal_Freedom$_{t-1}$			−75.048	
			(49.017)	
PC Fraser and CATO$_{t-1}$				−13.024**
				(6.217)
Constant	198.350	607.556	1,031.193	641.456
	(562.235)	(802.343)	(931.368)	(931.644)
Observations	31,653	25,984	23,280	23,280
R-squared	0.699	0.671	0.720	0.720
Control Variables	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Lead Lender FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Notes: The table shows the impact of economic freedom on loan spreads. In Model 1 we control for state-level corruption as measures by yearly corruption-related convictions normalized by a state's population using data from the *Department of Justice (DOJ)*. In Model 2 we control for the state government's ideology. We source government ideology data from https://rcfording.wordpress.com/state-ideology-data/. In Model 3 we control for *Personal Freedom* for each state and year using data from the *CATO Institute*. In Model 4 we use the principal component of the *Fraser* and *CATO* indices of economic freedom as an additional local economic freedom proxy. Note that data for Model 2 are available for the 1991-2017 period, and data for Models 3-4 are available for the 2000-2022 period. Robust standard errors clustered by state and year are in parentheses. ***, **, and * indicate significant levels of 10, 5, and 1 percent, respectively. The full definitions of the variables are in Table A1 of the Appendix.

economic mechanism (channel) through which economic freedom decreases loan spreads. We find empirical support for the conjecture that banks perceive that local economic freedom enhances borrowing firms' ability to take advantage of firm-specific and local investment and growth opportunities.

Looking at the components of economic freedom, we find that freedom from government spending and taxation freedom assists in reducing the cost of bank loans. We also show that labor market freedom reduces bank loan costs for comparatively smaller firms. We also examine how economic freedom affects non-price loan terms to

provide a more comprehensive view of the relationship between economic freedom and loan contracting. Higher economic freedom lengthens loan maturity and reduces general covenants and loan fees.

In terms of policy, we suggest that local governments consider that policies that increase (decrease) economic freedom could decrease (increase) the cost of bank credit for local firms. Our findings also highlight that these effects could be particularly evident for smaller firms, likely to have a strong operational presence in their home state. Therefore, policymakers should note that economic freedom could affect the cost of bank credit for firms that are particularly important to the local economy. Our findings also indicate that lower economic freedom could inhibit, from a bank credit standpoint, a state's firms from exploiting investment and growth opportunities.

We refrain from suggesting that policymakers should increase local economic freedom because government policies that affect economic freedom can have multiple purposes, such as reducing inequality and others. However, we recommend that policymakers consider the inverse relationship between local economic freedom and the cost of bank credit for local firms when formulating policies likely to affect economic freedom.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare that are relevant to the content of this article.

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APPENDIX

TABLE A1 Definition and sources of main variables.

Variable	Definitions	Sources
Fraser Economic Freedom index		
$Economic\_Freedom_{t-1}$	Economic freedom index in the year t − 1 measures the extent to which private property is protected and voluntary transactions are promoted. The index ranges between 0 and 10 with higher values indicating greater levels of economic freedom.	Fraser Institute
$Gov\_Spending\_Freedom_{t-1}$	Government spending freedom index in the year t − 1 measures the size of government consumption, investment, transfers and subsidies, and insurance and retirement payments. The index ranges between 0 and 10 with higher values indicating greater levels of government spending freedom.	Fraser Institute
$Taxation\_Freedom_{t-1}$	Taxation freedom index in year t − 1 measures the degree of the tax burden. The index ranges between 0 and 10 with higher values indicating greater levels of taxes freedom.	Fraser Institute
$Labor\_Freedom_{t-1}$	Labor market freedom index in year t − 1 measures the extent to which governments set minimum wage, acquire employment, and force workers to join unions. The index ranges between 0 and 10 with higher values indicating greater levels of labor market freedom.	Fraser Institute
Loan-level variables		
$Loan\_Spread_t$	Loan spread is defined as the "all-in-spread drawn" or the amount that borrowers pay in basis points over LIBOR plus the annual fee to obtain a loan facility in year t.	Thomson Reuters LPC DealScan database
$Ln\_Loan\_Size_t$	Natural logarithm of the total amount of loan facility (in $millions) obtained by a firm in year t	DealScan
$Loan\_Maturity_t$	Number of months to maturity of a loan facility obtained by a firm in year t	DealScan
$Dummy\_Collateral_t$	Equals 1 if a loan facility obtained by a firm in year t requires collateral, and 0 otherwise.	DealScan
$Dummy\_Covenant_t$	Equals 1 if a loan facility obtained by a firm in year t requires at least one covenant, and 0 otherwise.	DealScan
$Financial\_Covenant_t$	The number of financial covenants associated with the loan in year t	DealScan
$General\_Covenant_t$	The number of general covenants associated with the loan in year t	DealScan

(Continues)

TABLE A1 (Continued)

Variable	Definitions	Sources
Dummy_Pricing$_t$	Equals to 1 if a loan facility has performance pricing provisions in year *t*, and 0 otherwise.	DealScan
Number_Lenders$_t$	The number of lenders who participate in a loan	DealScan
Loan_fees$_t$	Loan fees are defined as the "all-in-spread undrawn", which is the sum of facility and commitment fees in year t.	DealScan
State-level variables		
Unemployment$_{t-1}$	Unemployment rate in a US State in year t − 1	Bureau of Labor Statistics (BLS)
Ln_Income$_{t-1}$	Natural logarithm of income per capita (in $million) in a US State in year t − 1.	Bureau of Economic Analysis (BEA)
Education$_{t-1}$	The share of people 25 years old and above with at least 1 year of college education in a state in year t − 1.	US Census, Current Population Survey
Ln_Population$_{t-1}$	Natural logarithm of the population size of a US State in year t − 1.	Bureau of Economic Analysis (BEA)
Leading Index$_{t-1}$	A prediction about the six-month forward growth rate of a state's coincident index, an official measure of local economic conditions. The leading index is available on a monthly basis up to December 2019. We use the annual average to transform it into a yearly variable.	Federal Reserve Bank of Philadelphia
Social Capital$_{t-1}$	A measure of local social capital from the Northeast Regional Center for Rural Development (NERCRD). The original measure is at the county level. We transform it to the state level by computing the county population-weighted average for each state. The data are available for the following years: 1990, 1997, 2005, 2009, and 2014. We use the latest year of the series until a new data point becomes available (e.g., for 2011 we use the 2009 values).	Northeast Regional Center for Rural Development (NERCRD), Rupasingha et al. (2006)
Red State$_{t-1}$	Indicator variable that takes the value of one if Republicans won the presidential election immediately preceding the loan in the borrowers' state and a value of zero otherwise.	Dave Leip's Atlas of US Presidential Elections
Turned Red$_{t-1}$	Indicator variable that takes a value of one if Republicans won the most recent presidential election before the loan in the borrowers' state, following a prior Democratic victory in the earlier election; otherwise, it is assigned a zero value.	Dave Leip's Atlas of US Presidential Elections
Turned Blue$_{t-1}$	Indicator variable that takes the value of one if Democrats won the most recent presidential election before the loan in the borrowers' state and Republicans had won the election before that; otherwise, it is assigned a zero value.	Dave Leip's Atlas of US Presidential Elections

TABLE A1 (Continued)

Variable	Definitions	Sources
State HHI Banks$_{t-1}$	The concentration of the local banking industry, captured through the state HHI index based on the assets of local commercial banks.	Compustat Bank
State Loan Growth$_{t-1}$	The loan growth % of the local commercial banking sector	Compustat Bank
State Loan Reserves$_{t-1}$	The sum of loan reserves as a ratio of the sum of total loans of local commercial banks	Compustat Bank
Firm-level variables		
Firm_Size$_{t-1}$	Natural logarithm of total assets of the firm at the beginning of year t − 1.	Compustat
ROA$_{t-1}$	The ratio of net income to total assets in year t − 1.	Compustat
Cash holdings$_{t-1}$	The ratio of cash holdings to total assets in year t − 1.	Compustat
Leverage$_{t-1}$	The ratio of long-term debt to total assets in year t − 1.	Compustat
Tangibility$_{t-1}$	The ratio of net property, plant, and equipment to total assets in year t − 1.	Compustat
Fluidity$_{t-1}$	Overlap between firm's and industry's product vocabulary in year t − 1. Higher values denote more product market competition	Hoberg et al. (2014)
Z-score$_{t-1}$	modified Altman's (1968) Z-score in year t − 1. Z-score is computed as (1.2 Working Capital + 1.4 Retained Earnings + 3.3 EBIT + 0.999 Sales)/Total assets.	Compustat
Earnings_Volatility$_{t-1}$	The standard deviation of earnings from year t − 3 to year t − 1.	Compustat
Asset_Growtht-1	Annual growth rate of a firm's assets in year t − 1.	
Sales_Growth$_{t-1}$	Annual growth rate of a firm's sales in year t − 1.	Compustat
Employment_Growth$_{t-1}$	Annual growth rate of a firm's employees in year t − 1.	Compustat
Market-to-Book (MTB) asset ratio$_{t-1}$	The ratio of the market value of a firm's assets to the book value of assets in year *t-1*. (AT + CSHO*PRCC_F-CEQ)/AT	Compustat
Instrumental variables		
NSFree$_{t-2}$	The average value of economic freedom in neighbouring states in year t − 2.	Fraser Institute
Theil$_{t-2}$	The Theil index in each state in year t − 2. The Theil index is a statistic used to measure economic inequality. The Theil index measures an entropic "distance" the population is away	Website of Prof Mark Frank

(Continues)

TABLE A1 (Continued)

Variable	Definitions	Sources
	from the "ideal" egalitarian state of everyone having the same income. The numerical result is in terms of negative entropy so that a higher number indicates more order that is further away from the "ideal" of maximum disorder. Formulating the index to represent negative entropy instead of entropy allows it to be a measure of inequality rather than equality.	
$Atkin_{t-2}$	The Atkinson index in each state in year t – 2. This index is welfare-based measure of inequality. It presents the percentage of total income that a given society would have to forego in order to have more equal shares of income between its citizens.	Website of Prof Mark Frank
$Top1\%_{t-2}$	The ratio of a state's population that falls within the top 1% of the income distribution of that state in t – 2.	Website of Prof Mark Frank
Alternative economic freedom indices		
$CATO\_Econ\_Freedom_{t-1}$	CATO economic freedom index in year t – 1 measures overall economic freedom based on three dimensions: Fiscal freedom and regulatory freedom.	CATO Institute
$PC\ Fraser\ and\ CATO_{t-1}$	The principal component of the Fraser and CATO indices of economic freedom in year t-1.	Fraser and CATO Institute