

LOCAL PROTECTIONISM IN THE CHINESE CONSTRUCTION INDUSTRY: A DATA ANALYSIS OF CONSTRUCTION CONTRACTORS' CREDIT SCORES

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Abstract. The Chinese government has recently introduced a credit scoring system to gauge the trustworthiness of construction contractors and urged public project owners to consider these scores during the tendering phase. Meanwhile, however, local protectionism, often seen as preferential policies and practices benefiting local firms over outside competitors, is a major concern in the construction industries of developing countries, particularly in China. Little is known about the presence and extent of local protectionism within this credit-scoring process. To find out, this study analyzes the scores of 15,301 construction firms across five cities in China's Jiangsu Province. The findings reveal two key points: first, all five cities exhibit local protectionism, evidenced by significantly higher credit scores for local firms compared to non-local ones; and second, the size of a company has a significant moderating effect on this bias, with larger firms experiencing wider score disparities favoring local businesses. The study contributes to the knowledge of local protectionism and potential policy changes in the construction sector by providing empirical data analysis on China's emerging credit evaluation system.

Keywords: construction contractors, credit scores, local protectionism, moderating effect.

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1. Introduction

The construction industry is frequently the world's most corrupt (Monteiro et al., 2022; Chan & Owusu, 2017; Ambraseys & Bilham, 2011, Bowen et al., 2012), with construction project procurement being the most susceptible (Alshihri et al., 2022; Govender et al., 2025). Corruption in the tendering stage is especially rampant (Ameyaw et al., 2017; Zhang et al., 2016). For instance, China, a major player in global construction, faces escalating corruption issues (Zhou et al., 2022), with a recent report revealing that 1,578 cases of illegal tendering between 2018 and 2020 were being investigated in Jiangsu Province, of which 77.6% are related to the construction industry (Central Commission for Discipline Inspection, 2021).

To address these issues and promote ethical conduct among individuals, businesses, and government bodies, the Chinese State Council (2014) suggested launching a Social Credit System (SCS) project to enhance credit consciousness and integrity across society. The Ministry of Housing and Urban-Rural Development of China [MOHURD] (2017), the primary regulatory body for the

country's construction sector, has planned to implement a credit scoring system to evaluate the trustworthiness and regulatory compliance of construction contractors continuously. Furthermore, regulatory bodies have made it mandatory to include these credit scores in the existing multi-criteria evaluation process for public project tendering (China Construction News 2020, 2021a, 2021b, 2022).

Past studies have explored the status quo and effectiveness of the credit scoring mechanism in China's construction sector. These found that credit scores are beneficial for contractors seeking contracts for large and mega projects, significantly affecting their market competitiveness (Xiong et al., 2019; Wang et al., 2023, 2024c). However, despite years of development towards a credit scoring system based on cross-regional information sharing, a notable limitation of the current mechanism is the absence of a unified national system assigning a consistent credit score to every organization (Chorzempa et al., 2018; Jiang, 2020). This situation stems from China's normal approach of gradually introducing policies and con-

ducting detailed pilot studies before widespread policy implementation, aiming to minimize risk and encourage innovation (Liang et al., 2018; Xiong et al., 2019). Consequently, in recent years, various local governments have been employing similar, yet not identical, credit scoring systems at different intervals to regulate their regional construction contractors.

The variation in credit evaluation systems across different city construction markets can lead to local protectionism (Deng et al., 2013), which means preferential treatment for local contractors during credit assessments and the tendering process. This bias is a significant but often understudied risk factor in the construction industry (El-Sayegh, 2008), especially in China (Shen et al., 2001; Fang et al., 2004; Liu et al., 2013; Wang et al., 2020a). Local protectionism may manifest through non-transparent scoring criteria, regionally biased policies, or the subjective preferences of local authorities, thereby undermining fair market competition (Bauhr et al., 2020). Some studies have shown that local governments indirectly support local contractors by adjusting the weight of credit scoring indicators or prioritizing the historical performance of local firms (Wang et al., 2023). Such practices not only restrict market access for non-local contractors but may also increase the risk of corruption, as credit ratings can be used as a tool to mask biased decision-making (Dass et al., 2016). Meanwhile, proponents of regionally tailored credit evaluation systems argue that local standards can better reflect the unique needs of regional markets, such as local economic priorities or specific regulatory environments (Schwarz & Arminger, 2005). However, this view has been challenged, as regional disparities may lead to market fragmentation and hinder the development of a unified national market (Poncet, 2005). International research also indicates that similar issues of local protectionism exist in the construction sectors of other countries, particularly in developing economies, further highlighting the global challenge of using credit scoring systems to balance fairness with local specificity (Zhang, 2011).

This study advances literature by making a clear, two-fold contribution on novelty and relevance. First, it provides multi-city, large-sample evidence on whether municipal credit scoring systems themselves embed systematic advantages for locally registered contractors over non-local competitors. Prior work has primarily examined the effects of credit scores on competitiveness or focused on a single city or on construction supervision companies (Xiong et al., 2019; Wang et al., 2023). By directly testing locality effects within the scoring outcomes across five distinct municipal schemes, this study addresses whether the instrument designed to enhance transparency may, in practice, institutionalize regional bias. Second, it identifies the moderating role of firm size – an underexplored dimension with direct policy relevance for SMEs – thereby clarifying whether any locality advantage disproportionately accrues to larger firms, with implications for market concentration and entry barriers.

Accordingly, the analysis addresses two questions:

RQ1: Do local construction companies tend to receive higher credit scores compared to non-local ones?

Given that municipal governments in China possess substantial discretion in administering credit ratings, locally registered contractors may obtain more favorable evaluations due to local protectionism or closer relationships with local authorities. To examine this potential locality bias, this study compares the average credit scores of local and non-local firms across five sampled cities.

Hypothesis 1 (H1): The credit scores of locally registered firms are equal to those of non-local firms.

RQ2: Does the size of a company moderate the extent of local protectionism in credit evaluations?

Prior studies suggest that large contractors may receive preferential administrative evaluations due to their greater market visibility and closer relational networks with government authorities. To examine whether firm size amplifies or attenuates the locality advantage, this study introduces an interaction term between local registration status and firm size in the regression model and conducts group comparisons among small, medium, and large firms within each city.

Hypothesis 2 (H2): The interaction effect between firm size and local registration status on credit scores is equal to zero.

Using administrative credit records from five Jiangsu cities – Nanjing, Yangzhou, Suzhou, Taizhou, and Zhenjiang – selected for their full public disclosure of the link between contractor credit scores and bid results since 2018 (Jiangsu Provincial Department of Housing and Urban-Rural Development, 2018) the study conducts a comparative, city-by-city statistical assessment of scoring outcomes. The results are intended to inform ongoing Social Credit System implementation and procurement reforms by indicating where national standard-setting and oversight may be needed to safeguard competitive neutrality.

2. Literature review

2.1. Credit assessment

Numerous studies have delved into two main credit-related factors concerning construction companies. The first aspect focuses on financial stability. For instance, Acheamfour et al. (2020) reviewed the importance of credit scoring in the pre-qualification of contractors. Kong et al. (2008) developed a quantitative model to evaluate default risk and loan losses in infrastructure projects for assessing project finance credit risk. Tserng et al. (2011) used credit models to predict the likelihood of default by construction firms. Huang et al. (2014) looked at the credit quality of construction contractors as a measure of financial stability. Balogun et al. (2016) investigated the accessibility of credit for small and medium-sized enterprises in the South African construction industry. Wang et al. (2020b) introduced

a method to more effectively assess credit risk in public-private partnership (PPP) project finance. More recently, Liu et al. (2022b) evaluated the financial credit risk in the online supply chain of the construction industry.

The second credit category extends beyond financial stability to encompass a wider range of concepts. For example, Liu and Zhu (2006) viewed contractors' credit as an indicator of their capability and willingness to complete construction projects successfully. Song and Wang (2020) discussed the management and repair of credit for construction firms based on China's credit supervision system. Chen and Wang (2021) suggested a methodology for evaluating government credit risks in non-profit PPP projects. Among the most relevant studies, Xiong et al. (2019) analyzed the credit scores of 2,071 contractors alongside the procurement of 158 building projects in Beijing City, while Wang et al. (2023) examined the credit scores of 514 construction supervision companies (CSCs) and their related procurement outcomes in 5,582 public projects in Nanjing City. More recently, Wang et al. (2024c) assessed the credit scores of over 6,000 registered construction contractors and evaluated the impact of their credit scores on the bidding results of 15,094 public projects.

Assessing a company's creditworthiness is not exclusive to China's construction sector and varies across countries and industries. For instance, in the U.S., the Dun and Bradstreet (D&B) Paydex score evaluates a business's payment history. This score, ranging from 1 to 100, with higher scores reflecting better payment performance, is widely used by businesses and lenders to gauge a company's credit status (Kallberg & Udell, 2003). Specifically in the construction field, the U.K. has a construction credit reference agency, Top Service, which offers construction firms a dedicated credit rating system. This system evaluates companies based on financial health, payment records, and other relevant factors (Wang et al., 2023).

In this study, the credit scores of construction contractors are derived from two distinct methods, depending on the local construction market's regulatory body. For instance, contractors begin with a standard base score (70 in Nanjing City and 80 in Yangzhou City) in Nanjing City and Yangzhou City. Their final credit scores for the evaluation period are then determined by applying specific criteria for adding or subtracting points. On the other hand, in Suzhou City, Taizhou City, and Zhenjiang City, the initial base score for each contractor (out of 100) is calculated using four elements: basic credit score, performance score, award score, and site inspection score, with their weights varying for different cities. After this, scores are adjusted downward by applying criteria that deduct points based on each contractor's unique situation and performance. Unlike the other four cities, Yangzhou's credit scoring system does not cap at 100 points.

Tables 1 and 2 summarize the credit scoring rubric for construction contractors in each city. Specifically, the basic credit score mainly considers administrative licenses, assessing whether a contractor possesses all required con-

struction permits. The performance score measures the contractor's local market performance, combining tax contributions (reflecting the tax revenue contributed to the local government) and engineering performance (which includes the number and monetary size of engineering projects undertaken in the city). The award score evaluates the quantity and level of enterprise and project awards a contractor receives. Lastly, the site inspection score assesses the contractor's performance during regulatory authority inspections, focusing on market behavior, quality control, and safety management.

2.2. Local protectionism

Local protectionism is characterized by policies and practices favoring local businesses over their non-local competitors, a common occurrence in developing countries where rent-seeking behaviors are widespread and central government oversight is weak (Barwick et al., 2021). This phenomenon emerges from various factors, such as the desire to boost local economies, the career advancement of local cadres linked to local GDP growth, and the rent-seeking activities of these officials (Jin et al., 2005; Liu et al., 2022a; Chan & Shi, 2022). Local protectionism has been observed to inflate the market presence of local firms artificially (Liu et al., 2022a), impede national economic integration (Barwick et al., 2021), disrupt the formation of industrial clusters (Ketels & Protsiv, 2021), and lead to considerable welfare losses (Barwick et al., 2021).

Local protectionism is a significant risk factor in the construction industries of countries such as the UAE (El-Sayegh, 2008), Ghana (Peprah et al., 2016), and particularly China (Shen et al., 2001; Fang et al., 2004; Liu et al., 2013; Sun et al., 2014; Wang et al., 2020b). It is seen as the most notable social risk for international contractors in China, reflecting the significant challenges posed by Chinese local government regulations to international firms entering the Chinese construction market (Zhang, 2011). This barrier is not only for foreign contractors but also for domestic ones from other provinces or municipalities under central government control. These contractors often struggle to penetrate markets outside their regions or compete with local Chinese construction firms. While there may be no overt restrictions on nonlocal construction companies, local governments can subtly use policies, laws, and regulations to limit their access to local markets (Fang et al., 2004). Due to these regional differences, the nascent credit scoring mechanism could serve as a tool for local governments to enforce local protectionism.

Local protectionism leads to unfair competition in the construction market and has been identified as a crucial factor for the healthy and robust development of the industry (Wang et al., 2020b). However, there has been limited research on local protectionism within the construction credit scoring system. A notable study by Wang et al. (2023) examined the credit scores of Nanjing CSCs and their influence on the bidding process. This research found

indications of local protectionism, as CSCs in Nanjing had significantly higher credit scores compared to those outside Nanjing. However, this study focused on CSCs, not construction contractors.

Moreover, since Nanjing is the capital of Jiangsu Province, factors like superior economic development or greater market competence might explain these findings rather than local protectionism. Direct research on the relationship between credit evaluation and local protectionism remains limited, but existing literature provides preliminary evidence. Wei et al. (2025) find that local governments in China tend to favor local firms in public procurement through scoring mechanisms, suggesting that credit evaluation systems may be implicitly designed as tools of local protectionism. Lu and Wang (2023) further point out that local regulations, by emphasizing credit scoring criteria such as tax contributions, have increased market entry barriers for non-local construction contractors. Additionally, Engelmann et al. (2019) examined regional disparities in China's credit scoring system, showing that the autonomy of local regulatory authorities may lead to discriminatory ratings against non-local firms.

Moreover, the credit scoring systems across cities differ in scoring criteria, dimensions, and implementation methods. Combined with the lack of standardization and transparency, these institutional variations not only affect the absolute levels of scores but also shape the extent of local protectionism observed. For example, cities such as Yangzhou that assign heavy weights to local tax contributions and project awards are more likely to privilege large local firms, thereby amplifying protectionist outcomes. By contrast, cities such as Nanjing, where regulatory inspections and licensing compliance play a greater role, generate relatively smaller score gaps between local and non-local contractors. These systemic differences therefore help explain the heterogeneity in local protectionist tendencies across cities and highlight the institutional foundations of observed biases. Therefore, further research on the credit scores of construction contractors from other cities is necessary, which this study tries to complement. This leads to the first research question of this study: *Do local construction companies tend to receive higher credit scores compared to non-local ones?*

In the construction sector, small and medium-sized enterprises (SMEs) often face disadvantages when competing with larger firms for contracts, particularly in areas like risk management (Rostami et al., 2015), workplace health and safety (Furci & Sunindijo, 2020), and lean construction practices (Tezel et al., 2018). Liu et al. (2022c) find that SMEs, due to resource constraints, tend to score lower on localized evaluation criteria, and local governments may reinforce local protectionism by favoring large local firms through biased scoring standards. Therefore, in order to assess the existence and scope of local protectionism more accurately, it is important to take into consideration and manage the potential impact of company size on the results of credit evaluation.

Furthermore, given the wide moderating effect of company size on various aspects such as capital structure (Gunnardi et al., 2020), risk management maturity (Wood et al., 2018), knowledge management maturity (Hartono et al., 2019), and environmental performance (Fianko et al., 2021) in construction firms, it is also reasonable to examine its possible moderating effect on the local protectionism phenomenon in credit evaluations. This consideration leads to the study's second research question: *Does the size of a company moderate the extent of local protectionism in credit evaluations?* Per Chinese regulations (Ministry of Industry and Information Technology, 2011, 2021), construction companies are classified into different size categories based on annual turnover or total assets. However, such data is often not publicly accessible for non-listed companies. Consequently, this study uses the number of employees, a commonly accepted metric in the construction industry (e.g., Rostami et al., 2015; Tezel et al., 2018; Gamidullaeva et al., 2020; Windapo et al., 2020; Wang et al., 2023, 2024a, 2024b), as a measure of company size.

2.3. Research gap

The original intention of China's credit scoring system in the construction industry was to promote transparency and fair competition. However, in practice, it has been used by local governments to reinforce local protectionism. Previous studies have indeed found that differences in credit evaluation systems can lead to local protectionist behavior. Existing research, especially in the context of the growing number of city-level credit scoring mechanisms in China, reveals a lack of a unified national system, which makes it difficult to assign consistent credit scores across organizations. However, little is known about whether and how credit scoring practices contribute to local protectionism in the construction sector. To fill this research gap, this study adopts a data-driven approach to conduct a statistical analysis of five city-level samples. It identifies the existence and extent of local protectionism through credit scores and addresses two key questions: (1) Do local construction firms tend to receive higher credit scores than non-local firms? and (2) Does firm size moderate the degree of local protectionism in credit evaluations? The study also proposes policy recommendations and provides a comprehensive understanding and framework for examining local protectionism in the construction industry.

3. Research methods

To investigate the presence and extent of local protectionism in municipal credit scoring systems, this study draws on detailed administrative data capturing both credit evaluation outcomes and firm characteristics. Specifically, evidence was gathered on contractor credit scores over the past three years from the Housing and Urban-Rural Development Bureaus of five Jiangsu cities, including company names, registration locations, unique identifiers, and evaluation periods. Complementary corporate information, in-

cluding employee numbers and historical company names, was obtained from the TianYanCha database to allow accurate matching and classification by firm size and locality. These datasets were then consolidated, cleaned, and organized into city-specific databases, forming the empirical foundation for subsequent regression analyses designed to test the influence of local registration and firm size on credit scores. This structured dataset then enabled a city-by-city analysis using linear regression models incorporating both main and interaction effects, as detailed in Tables 1 and 2.

In examining local protectionism within the credit scoring system of China's construction industry, separate linear regression models are established for each city (Nanjing, Yangzhou, Suzhou, Taizhou, Zhenjiang), incorporating both main effects and interaction effects through the use of dummy variables. This approach effectively captures the differences in credit evaluation systems and manifestations of local protectionism across cities, avoiding the confounding effects of regional heterogeneity. By using dummy variables and interaction terms, the method directly quantifies the impact of local firm identity and its moderating effect with firm size, aligning well with the core research question. The simplicity and interpretability of linear regression make it well-suited for handling dummy variables, interaction effects, and controlling for confounding factors. Additionally, city-specific models offer insights into regional variations in local protectionism, providing valuable guidance for formulating targeted policy recommendations.

Figure 1 illustrates a flowchart outlining the research methods, comprising three stages: data collection, data processing for each city, and data analysis for each city. During data collection, six datasets were gathered from various sources, including the credit scores of construction companies from five different cities and their corresponding corporate information. In the data processing phase, these credit scores were consolidated with the corporate information, followed by further cleaning and organizing to create a unified dataset for each city. The final stage, data analysis, involved conducting regression analysis with dummy variables to address two research questions: 1. Do local construction companies tend to receive higher credit scores compared to non-local ones? 2. Does the size of a company moderate the extent of local protectionism in credit evaluations?

3.1. Data collection

For each city, credit score data from the past three years were obtained from the local Housing and Urban Rural Development Bureau to capture the latest credit evaluation situations. This data included the names, IDs, credit scores, and evaluation periods of construction companies involved in the credit evaluation process. Since a company may operate in multiple cities and, therefore, be part of several credit evaluations, duplicate entries were eliminated, resulting in a complete list of 15,301 unique companies. The corporate information for these companies, including employee numbers and registration locations, was then collected from the TianYanCha database.

Table 1. Credit scoring rubric for construction contractors in Nanjing City and Yangzhou City

Nanjing City (Nanjing Urban and Rural Construction Committee, 2022)	Base Score (70%)	Criteria for Subtracting Points: Administrative penalties, quality accidents, violation of safe operating procedures, etc.	Criteria for Adding Points: Government commendations, engineering quality awards, safe and civilized construction sites, etc.
Yangzhou City (Yangzhou Housing and Urban-Rural Development Bureau, 2015)	Base Score (80%)	Criteria for Subtracting Points: Disqualification, misconduct in tendering, quality or safety accidents, poor site management, etc.	Criteria for Adding Points: Enterprise award, project award

Table 2. Credit scoring rubric for construction contractors in Suzhou City, Taizhou City, and Zhenjiang City

Suzhou City (Suzhou Housing and Urban-Rural Development Bureau, 2020)	Basic Credit Score (20%) = administrative license (20%)	Performance Score (30%) = tax contribution (10%) + number of engineering projects (10%) + size of engineering projects (10%)	Award Score (10%) = enterprise award + project award	Site Inspection Score (40%) = comprehensive inspection score (20%) + daily inspection score (20%)	Criteria for Subtracting Points: Illegal acts determined by judicial authorities, administrative penalties, major quality defects and safety production violations, bid collusion and bid rigging in tendering, listed in the dishonesty blacklist, etc.
Taizhou City (Taizhou Housing and Urban-Rural Development Bureau, 2020)	Basic Credit Score (30%) = administrative license (28%) + party organization (2%)	Performance Score (20%) = number of engineering projects (4%) + size of engineering projects (8%) + tax contribution (8%)	Award Score (20%) = enterprise award + project award	Site Inspection Score (30%) : Construction market behavior, safety management, engineering quality control, etc.	
Zhenjiang City (Zhenjiang Housing and Urban-Rural Development Bureau, 2020)	Basic Credit Score (20%) = administrative license (20%)	Performance Score (15%) = number of engineering projects (5%) + size of engineering projects (5%) + tax contribution (5%)	Award Score (20%) = enterprise award + project award	Site Inspection Score (45%) : Construction market behavior, safety management, engineering quality control, etc.	

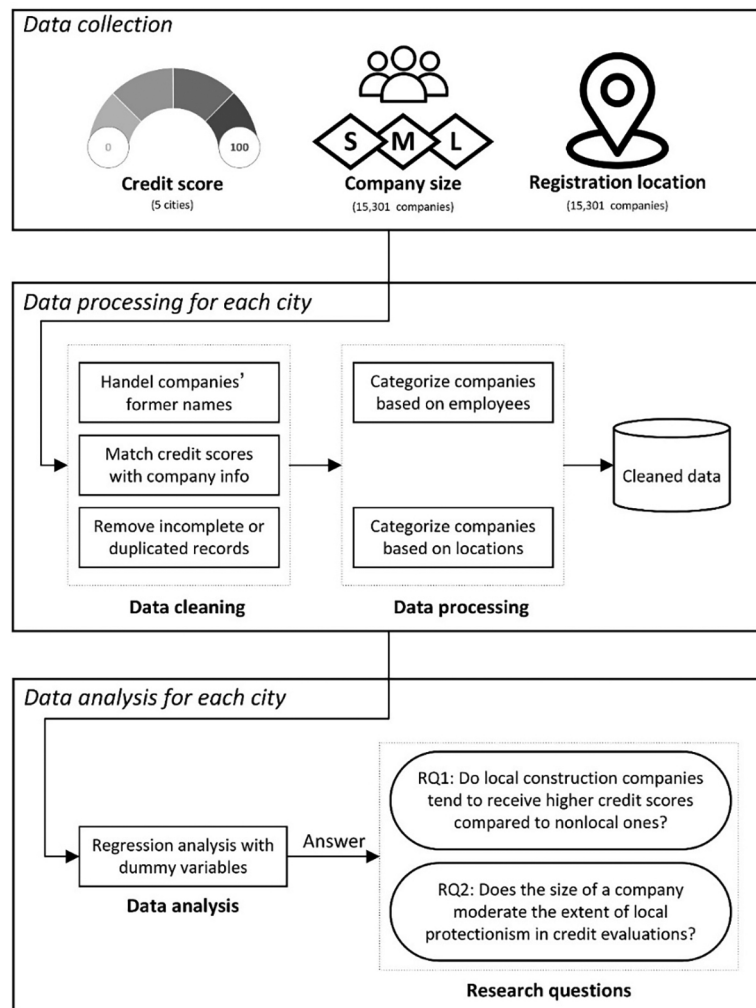


Figure 1. Flowchart of research methods

(www.tianyancha.com), a platform providing information on Chinese enterprises to represent their sizes and geographic locations. Lastly, to account for any changes in company names over time, it was essential to collect all former names of each company to facilitate the match between credit score and corporate information.

3.2. Data processing

In each city, the credit score data was combined with the company information, matching current and former company names. The present study employs the complete population dataset encompassing all relevant cities and firms within the defined research scope. By analyzing population data rather than a sample, this approach ensures full coverage of firm heterogeneity, eliminates sampling bias (Klingwort & Burger, 2023), and substantially enhances the robustness, reliability, and representativeness of the findings. Population-based analyses are particularly advantageous in this context because they directly reveal the true relationships and effect magnitudes that exist across the entire population of Chinese construction firms, rather

than providing statistical inferences that are subject to sampling error. This feature makes the results especially well-suited for examining systematic patterns in the interplay between firm characteristics and administrative credit-evaluation outcomes in China's construction sector. Data cleaning was next conducted by removing records with missing information, such as employee numbers or registration locations. This process resulted in five datasets containing 59,085, 975, 18,783, 15,614, and 15,828 entries for Nanjing City, Yangzhou City, Suzhou City, Taizhou City, and Zhenjiang City, respectively. Drawing from the classification criteria in prior research (e.g., Rostami et al., 2015; Tezel et al., 2018; Gamidullaeva et al., 2020; Windapo et al., 2020) and the categorization in TianYanCha, construction companies were categorized into three size groups: small (1–99 employees), medium (100–249 employees), and large (250 or more employees). For each city, construction companies were also categorized into two location groups: those registered within the city and those registered elsewhere. For example, in the case of Nanjing City, companies were categorized as either 'in_nanjing' (registered in Nanjing City) or 'outside_nanjing' (registered elsewhere).

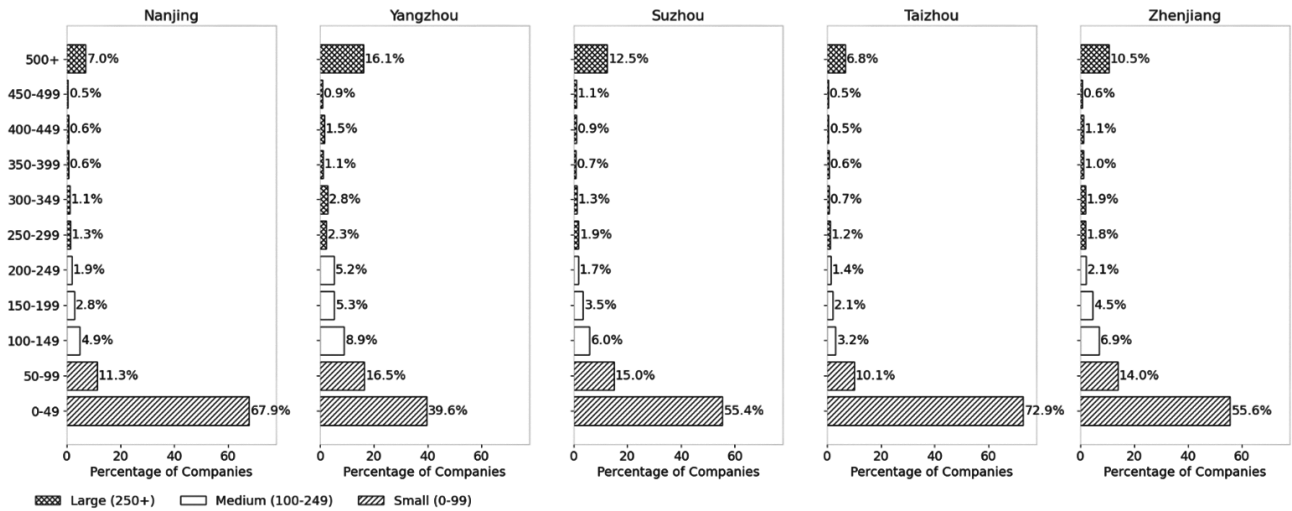


Figure 2. Company size demographic profile for each city

Figure 2 provides a demographic profile of the 15,301 unique construction contractors in the sample by displaying the distribution of firm size (measured by number of employees) across the five Jiangsu cities. Small enterprises (0–99 employees) overwhelmingly dominate the industry in every city, ranging from 56.1% in Yangzhou to 83.0% in Taizhou (Nanjing 79.2%, Suzhou 70.4%, Zhenjiang 69.6%). Medium-sized firms (100–249 employees) account for 6.7–19.4% of the sample, with Yangzhou again showing the highest share. Large firms (≥ 250 employees) remain a minority everywhere, yet exhibit the greatest inter-city variation, ranging from 10.3% in Taizhou to 24.7% in Yangzhou (Nanjing 11.1%, Suzhou 18.4%, Zhenjiang 16.9%). This profile confirms the characteristically fragmented and SME-dominated structure of China's construction sector while simultaneously revealing regional differences, with Yangzhou standing out for its higher proportion of large and medium-sized enterprises. These demographic variations provide essential context for interpreting the moderating role of firm size in the subsequent analyses and underscore why size must be explicitly modeled: even though large firms are relatively scarce overall, their greater presence in certain cities amplifies the policy relevance of the finding that local protectionism disproportionately benefits precisely this group.

3.3. Data analysis

Since the data on company size and registration location are categorical, two sets of dummy variables were created using dummy coding. This method employs only ones and zeros to indicate group membership (Remenyi et al., 2022; Ahmed et al., 2024; Grotenhuis & Thijs, 2015). Within the company size category, 'small' was chosen as the reference category for comparison. Similarly, companies registered 'outside_city' were used as the reference category for registration location. A separate linear regression model was constructed for each city, incorporating both main and interaction effects. For example, in the case of Nanjing City, the regression model was formulated based on Eqn (1) to

quantitatively assess how a company's registration location influences its credit scores and to examine the moderating effect of company size in this relationship.

$$\begin{aligned} \text{Score}_i = & a + b_1 * in_{nanjing_i} + b_2 * large_i + \\ & b_3 * medium_i + b_4 * in_{nanjing_i} * large_i + \\ & b_5 * in_{nanjing_i} * medium_i + u_i. \end{aligned} \quad (1)$$

Reference categories: *outside_nanjing_i* and *small_i*.

4. Results

4.1. Regression results

Table 3 presents the linear regression outcomes for Nanjing City, using small companies outside Nanjing as the reference for comparison. The constant term, a , reveals an average credit score of 70.332 for the reference group. The coefficient b_1 shows that small companies in Nanjing have an average credit score of 0.646 points, significantly higher ($p < 0.05$) than the reference group. The combination of b_1 and b_5 indicates that the average credit score of medium-sized companies in Nanjing is 4.654 points ($b_1 + b_5$), significantly higher ($p < 0.05$) than their counterparts outside Nanjing. Similarly, b_1 and b_4 suggest that large companies

Table 3. Results of regression analysis for Nanjing City

	Coefficients	Standard error	t-statistic	p-value
Main effects				
a (constant)	70.332	0.030	2346.158	0.000
$in_nanjing$ (b_1)	0.646	0.036	17.982	0.000
large (b_2)	2.504	0.056	44.672	0.000
medium (b_3)	0.465	0.064	7.294	0.000
Interaction effects				
$in_nanjing * large$ (b_4)	4.417	0.131	33.592	0.000
$in_nanjing * medium$ (b_5)	4.008	0.111	36.163	0.000

in Nanjing have an average credit score of 5.063 points ($b_1 + b_4$), significantly higher ($p < 0.05$) than large companies outside Nanjing. Although companies generally have higher credit scores when located in Nanjing City, this effect is more pronounced for medium and large companies, as shown by the larger and significant coefficients for b_4 and b_5 . The regression results for Nanjing City are depicted in Figure 3, which emphasizes the moderating effect of company size, as evidenced by the steeper slopes for the regression lines of medium and large companies.

Table 4 encapsulates the linear regression results for Yangzhou City. Here, the constant term, a , reveals that the reference group (small companies outside Yangzhou) has an average credit score of 74.922. The coefficient b_1 shows that small companies in Yangzhou have an average credit score of 10.858 points, significantly higher ($p < 0.05$) than the reference group. The sum of b_1 and b_5 suggests that the average credit score of medium-sized companies in Yangzhou is 37.956 points ($b_1 + b_5$), significantly higher ($p < 0.05$) than medium companies located outside Yangzhou. Moreover, b_1 combined with b_4 indicates that large companies in Yangzhou have an average credit score of 57.463 points ($b_1 + b_4$), significantly higher ($p < 0.05$) than large companies outside Yangzhou. The findings demonstrate that, while companies in Yangzhou City generally score higher in credit evaluations, this effect is more pronounced as company size increases from small to large, as reflected by the significant and increasing coefficients b_4 and b_5 . The regression results for Yangzhou City are illustrated in Figure 4, showcasing the moderating role of company size through the differing slopes of the regression lines for each company size category.

Table 5 presents the linear regression outcomes for Suzhou City. The constant term, a , shows that the reference group (small companies outside Suzhou) has an average credit score of 53.222. The coefficient b_1 reveals that small companies in Suzhou have an average credit score of 4.268 points, significantly higher ($p < 0.05$) than the reference group. The combined effect of b_1 and b_5 indicates that the average credit score of medium-sized companies in Suzhou is 15.078 points ($b_1 + b_5$), significantly higher ($p < 0.05$) than medium companies located outside Suzhou.

Table 4. Results of regression analysis for Yangzhou City

	Coefficients	Standard error	<i>t</i> -statistic	<i>p</i> -value
Main effects				
<i>a</i> (constant)	74.922	2.442	30.687	0.000
in_yangzhou (b_1)	10.858	2.804	3.872	0.000
large (b_2)	6.447	3.401	1.896	0.058
medium (b_3)	2.662	4.581	0.581	0.561
Interaction effects				
in_yangzhou * large (b_4)	46.605	4.623	10.081	0.000
in_yangzhou * medium (b_5)	27.098	5.354	5.062	0.000

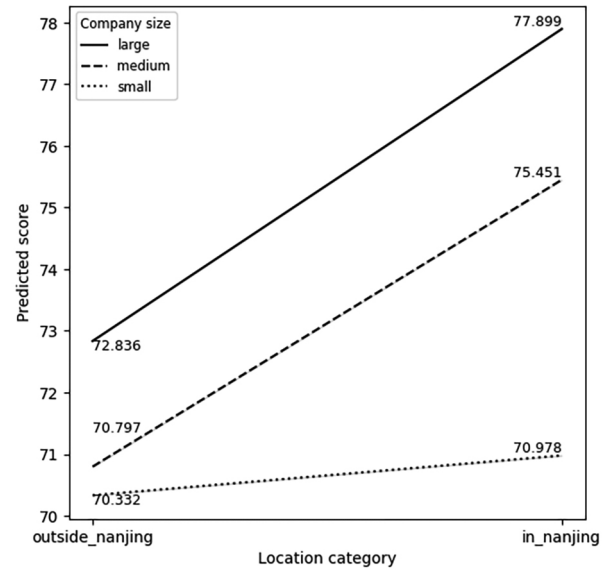


Figure 3. Visualization of the regression analysis results for Nanjing City

zhou. Similarly, b_1 and b_4 suggest that large companies in Suzhou have an average credit score of 14.314 points ($b_1 + b_4$), significantly higher ($p < 0.05$) than large companies outside Suzhou. The results indicate that, while all companies in Suzhou City generally receive higher credit scores, this effect is more pronounced for medium and large companies, as shown by the larger and significant coefficients for b_4 and b_5 . The regression results for Suzhou City are depicted in Figure 5, emphasizing the moderating effect of company size, as evidenced by the steeper regression lines for medium and large companies.

Table 6 outlines the linear regression findings for Taizhou City. The constant term, a , reveals that the average credit score of the reference group (small companies outside Taizhou) is 57.216. The coefficient b_1 shows that small companies in Taizhou have an average credit score of 2.821 points, significantly higher ($p < 0.05$) than the reference group. Additionally, the sum of b_1 and b_5 indicates that medium-sized companies in Taizhou have an average credit score of 16.585 points ($b_1 + b_5$), significantly higher ($p < 0.05$) than medium companies outside Taizhou.

Table 5. Results of regression analysis for Suzhou City

	Coefficients	Standard error	<i>t</i> -statistic	<i>p</i> -value
Main effects				
<i>a</i> (constant)	53.222	0.374	142.459	0.000
in_suzhou (b_1)	4.268	0.390	10.936	0.000
large (b_2)	4.816	0.442	10.888	0.000
medium (b_3)	−1.525	0.587	−2.597	0.009
Interaction effects				
in_suzhou * large (b_4)	10.046	0.662	15.165	0.000
in_suzhou * medium (b_5)	10.810	0.685	15.784	0.000

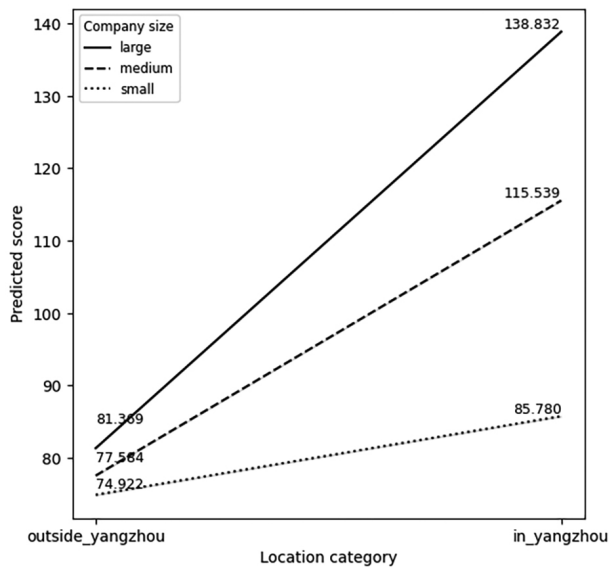


Figure 4. Visualization of the regression analysis results for Yangzhou City

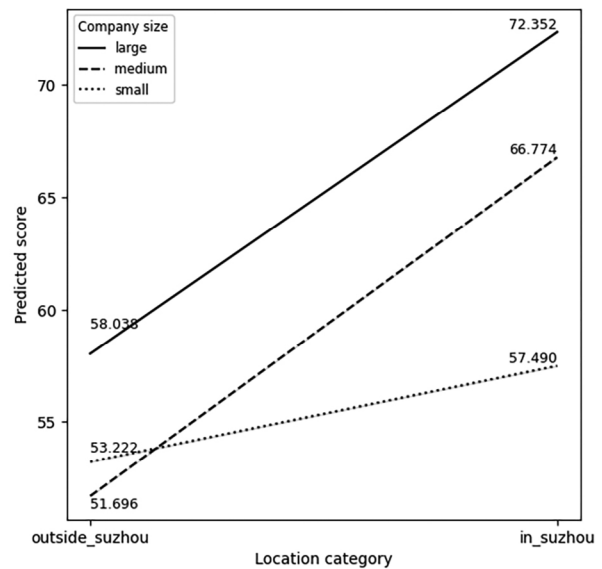


Figure 5. Visualization of the regression analysis results for Suzhou City

In the case of large companies, b_1 and b_4 combined suggest their average credit score in Taizhou is 24.372 points ($b_1 + b_4$), significantly higher ($p < 0.05$) than large companies outside Taizhou. The results show that companies located in Taizhou City generally receive higher credit scores, with this positive effect becoming more pronounced as company size increases, as indicated by the significant coefficients for b_4 and b_5 . The regression results for Taizhou City are displayed in Figure 6, emphasizing the moderating effect of company size through the distinct slopes of the regression lines for different company sizes.

Table 7 presents the linear regression results for Zhenjiang City. The constant term, a , shows that the reference group (small companies outside Zhenjiang) has an average credit score of 61.809. The coefficient b_1 reveals that small companies in Zhenjiang have an average credit score of 2.953 points, significantly higher ($p < 0.05$) than the reference group. The combination of b_1 and b_5 indicates that the average credit score for medium-sized companies in Zhenjiang is 13.762 points ($b_1 + b_5$), significantly higher

($p < 0.05$) than medium companies located outside Zhenjiang. Similarly, b_1 and b_4 suggest that large companies in Zhenjiang have an average credit score of 14.611 points ($b_1 + b_4$), significantly higher ($p < 0.05$) than large companies outside Zhenjiang. The analysis shows that, while all companies in Zhenjiang City generally receive higher credit scores, this advantage is more pronounced for medium and large companies, as evidenced by the larger and significant coefficients for b_4 and b_5 . The regression results for Zhenjiang City are depicted in Figure 7, emphasizing the moderating effect of company size, as indicated by the steeper slopes for the regression lines of medium and large companies.

The regression results reveal significant locality-based disparities in credit scores across all five sampled cities: locally registered firms consistently receive higher credit scores than non-local firms (coefficient b_1 statistically significant at $p < 0.05$ in each city), leading to rejection of the null hypothesis H1. When the interaction term between firm size and local registration status is introduced,

Table 6. Results of regression analysis for Taizhou City

	Coefficients	Standard error	t-statistic	p-value
Main effects				
a (constant)	57.216	0.087	656.051	0.000
in_taizhou (b_1)	2.821	0.107	26.413	0.000
large (b_2)	4.687	0.176	26.636	0.000
medium (b_3)	1.347	0.233	5.783	0.000
Interaction effects				
in_taizhou * large (b_4)	21.551	0.468	46.036	0.000
in_taizhou * medium (b_5)	13.764	0.391	35.202	0.000

Table 7. Results of regression analysis for Zhenjiang City

	Coefficients	Standard error	t-statistic	p-value
Main effects				
a (constant)	61.809	0.076	811.000	0.000
in_zhenjiang (b_1)	2.953	0.108	27.285	0.000
large (b_2)	1.168	0.135	8.633	0.000
medium (b_3)	0.341	0.149	2.288	0.022
Interaction effects				
in_zhenjiang * large (b_4)	11.658	0.579	20.145	0.000
in_zhenjiang * medium (b_5)	10.809	0.471	22.935	0.000

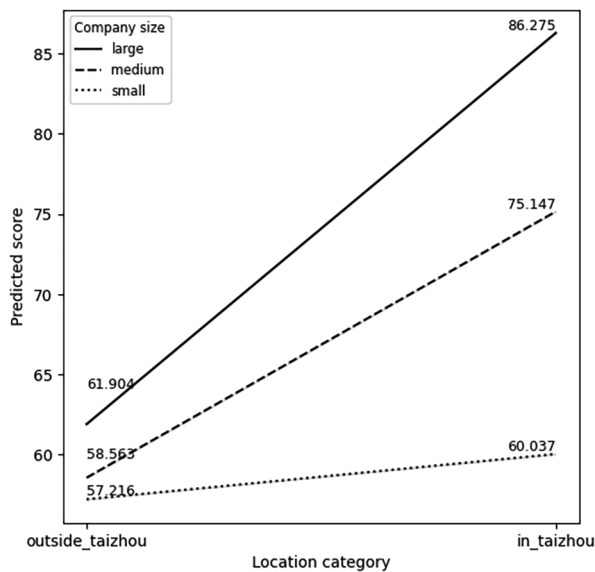


Figure 6. Visualization of the regression analysis results for Taizhou City

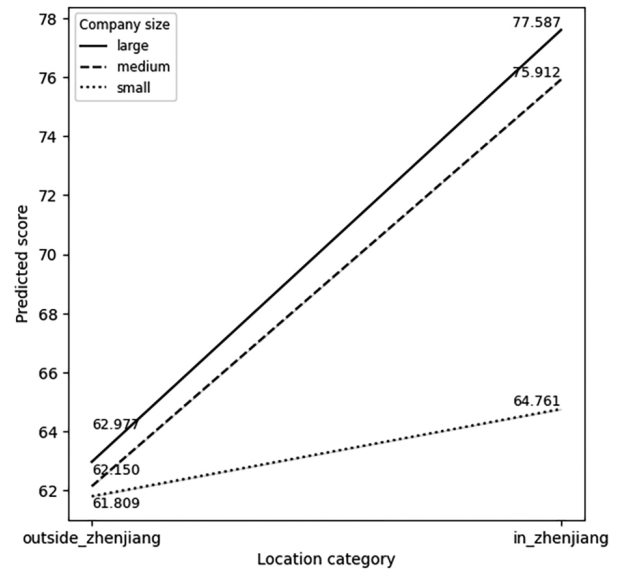


Figure 7. Visualization of the regression analysis results for Zhenjiang City

the interaction coefficients are positive and statistically significant ($p < 0.05$) in four of the five cities. Figures 3–7 illustrate markedly steeper positive slopes for medium- and large-sized firms compared with small firms, demonstrating that the locality advantage increases with firm size. Accordingly, the null hypothesis H2 is rejected.

To ensure the reliability of the regression estimates and the validity of statistical inference, several diagnostic and robustness checks were performed. Multicollinearity was assessed using variance inflation factors (VIFs). As reported in Table 8, VIF values for all core explanatory variables and the interaction term are well below 5 (and typically < 2) across all city-specific models, indicating no evidence of harmful multicollinearity (Park & Mun, 2024). Thus, the estimated coefficients are stable and efficiently estimated.

The heteroskedasticity test results indicate non-constant residual variance ($p < 0.01$). To address this issue and obtain valid standard errors, heteroskedasticity-consistent standard errors were computed using the HC3 estimator, which performs particularly well in finite samples and with influential observations (Long & Ervin, 2000). The HC3-robust results are presented in Tables 9–13. Importantly, the magnitude, sign, and statistical significance of the key coefficients (local registration and its interaction with firm size) remain virtually unchanged relative to conventional standard errors. Compared with the original White's (1980) HC0 estimator, HC3 provides more conservative and re-

liable inference in the presence of leverage points. The consistency of findings after applying HC3 confirms that heteroskedasticity does not materially affect the conclusions, thereby strengthening confidence in the robustness and reliability of the reported effects.

4.2. Summary of findings

Empirical results reveal a consistent and significant pattern across the five sample cities: local firms receive significantly higher credit scores than non-local firms, and the extent of local protectionism in credit evaluations is moderated by firm size. Specifically, medium and large enterprises benefit more substantially, as evidenced by the corresponding regression coefficients ($b_1 + b_5$ and $b_1 + b_4$), all of which are statistically significant ($p < 0.05$). Figures 3 to 7 visually demonstrate the moderating effect of firm size on local protectionism. In each city, the regression slopes for medium and large firms are noticeably steeper than those for small firms, indicating that the credit advantage increases with firm size. This pattern holds uniformly across all five cities. Moreover, the consistency of this trend across cities with varying levels of economic development – from the economically advanced Suzhou to the smaller Taizhou – enhances the generalizability of the findings. These results further validate the core hypothesis that local protectionism has a positive effect on firms' credit scores, with a more pronounced impact on larger enterprises.

Table 8. Multicollinearity diagnostic analysis

City	in_city (b_1)	large (b_2)	medium (b_3)	in_city * large (b_4)	in_city * medium (b_5)
Nanjing	1.44	1.45	1.63	1.24	1.53
Yangzhou	2.16	2.66	4.06	2.43	4.27
Suzhou	3.43	3.55	4.24	1.84	3.91
Taizhou	1.31	1.34	1.62	1.17	1.58
Zhenjiang	1.33	1.27	1.27	1.07	1.13

Table 9. Regression results for Nanjing City (HC3-robust standard errors)

	Coefficients	Standard error	t-statistic	p-value
Main effects				
<i>a</i> (constant)	70.332	0.012	5941.904	0.000
in_nanjing (<i>b</i> ₁)	0.646	0.020	32.749	0.000
large (<i>b</i> ₂)	2.504	0.081	30.831	0.000
medium (<i>b</i> ₃)	0.465	0.034	13.542	0.000
Interaction effects				
in_nanjing * large (<i>b</i> ₄)	4.417	0.375	11.774	0.000
in_nanjing * medium (<i>b</i> ₅)	4.008	0.216	18.540	0.000

Table 10. Regression results for Yangzhou City (HC3-robust standard errors)

	Coefficients	Standard error	t-statistic	p-value
Main effects				
<i>a</i> (constant)	74.922	0.486	154.230	0.000
in_yangzhou (<i>b</i> ₁)	10.858	0.835	13.005	0.000
large (<i>b</i> ₂)	6.447	0.942	6.841	0.000
medium (<i>b</i> ₃)	2.662	1.347	1.976	0.048
Interaction effects				
in_yangzhou * large (<i>b</i> ₄)	46.605	7.266	6.414	0.000
in_yangzhou * medium (<i>b</i> ₅)	27.098	3.349	8.091	0.000

Table 11. Regression results for Suzhou City (HC3-robust standard errors)

	Coefficients	Standard error	t-statistic	p-value
Main effects				
<i>a</i> (constant)	53.222	0.369	144.097	0.000
in_suzhou (<i>b</i> ₁)	4.268	0.383	11.131	0.000
large (<i>b</i> ₂)	4.816	0.450	10.692	0.000
medium (<i>b</i> ₃)	−1.525	0.676	−2.256	0.024
Interaction effects				
in_suzhou * large (<i>b</i> ₄)	10.046	0.738	13.604	0.000
in_suzhou * medium (<i>b</i> ₅)	10.810	0.803	13.455	0.000

Moreover, there are notable differences in the extent of local protectionism among the five sample cities. While the specific implementation details of the credit scoring systems may vary across these cities, this study adopts a consistent regression model structure in each city, using “small non-local firms” as the reference group. This approach enables a comparison of the relative scoring advantages gained by local firms of different sizes, thereby making the degree of local protectionism across cities

Table 12. Regression results for Taizhou City (HC3-robust standard errors)

	Coefficients	Standard error	t-statistic	p-value
Main effects				
<i>a</i> (constant)	57.216	0.023	2486.344	0.000
in_taizhou (<i>b</i> ₁)	2.821	0.069	40.875	0.000
large (<i>b</i> ₂)	4.687	0.202	23.290	0.000
medium (<i>b</i> ₃)	1.347	0.130	10.344	0.000
Interaction effects				
in_taizhou * large (<i>b</i> ₄)	21.551	1.084	19.866	0.000
in_taizhou * medium (<i>b</i> ₅)	13.764	0.742	18.556	0.000

Table 13. Regression results for Zhenjiang City (HC3-robust standard errors)

	Coefficients	Standard error	t-statistic	p-value
Main effects				
<i>a</i> (constant)	61.809	0.015	4151.227	0.000
in_zhenjiang (<i>b</i> ₁)	2.953	0.111	26.588	0.000
large (<i>b</i> ₂)	1.168	0.093	12.622	0.000
medium (<i>b</i> ₃)	0.341	0.056	6.147	0.000
Interaction effects				
in_zhenjiang * large (<i>b</i> ₄)	11.658	1.702	6.850	0.000
in_zhenjiang * medium (<i>b</i> ₅)	10.809	1.289	8.383	0.000

Table 14. Average additional credit scores for various types of local firms

City	Small firms	Medium firms	Large firms	Local protectionism strength
Yangzhou	+10.858	+37.956	+57.463	Extremely strong
Taizhou	+2.821	+16.585	+24.372	Moderately strong
Suzhou	+4.268	+15.078	+14.314	Moderate
Zhenjiang	+2.953	+13.762	+14.611	Moderate
Nanjing	+0.646	+4.654	+5.063	Weak

comparable. The analysis reveals significant heterogeneity in local protectionism among cities. The average additional credit scores granted to various types of local firms are presented in Table 14. As a provincial capital, Nanjing's credit scoring rules are subject to stricter audits and public scrutiny. At the same time, Nanjing has the lowest fiscal dependence on the construction industry (12%), and non-local firms account for as much as 60% of successful bids, indicating intense competition that further limits the scope for local protectionism (World Bank Group, 2021). This result reinforces the core argument that the intensity of local protectionism increases with fiscal dependence and political incentives (Han & Kung, 2015).

5. Discussion

This study collected background information on five sample cities in Jiangsu Province, forming the empirical foundation of the research. By analyzing the credit scoring standards in each region, it further illustrates the discretionary power local governments have in setting scoring rules, which creates the potential for local protectionism. By showcasing regional practices, the study highlights institutional issues reflected in credit scoring systems that may exist not only in China but also in other developing countries. This section discusses the preceding section's analytical results and offers suggestions for improving the current credit scoring system.

5.1. Analytical results

Despite variations in credit evaluation practices across cities, the regression analysis in this study consistently reveals the widespread presence of local protectionism in the credit evaluation process. Specifically, local construction firms receive significantly higher credit scores than their non-local counterparts, and the score differential between large local and large non-local firms is substantially greater than that between small local and small non-local firms. These findings provide strong support for the two core research questions proposed in this study. This pattern corroborates findings from Wang et al. (2023), who identified a pronounced bias in favor of Nanjing-based CSCs, with local CSCs receiving notably higher credit scores than those situated outside Nanjing. More broadly, this phenomenon aligns with the extensive body of research (Shen et al., 2001; Fang et al., 2004; Liu et al., 2013; Sun et al., 2014; Wang et al., 2020a) that documents the pervasive presence of local protectionism within China's construction sector, facilitated through administrative mechanisms such as taxation, licensing, and tendering barriers. However, the intention behind China's social credit system was not to foster administrative monopolies like local protectionism but rather to establish a system that accurately assesses corporate integrity, rewarding trustworthy companies and penalizing untrustworthy ones. Local protectionism undermines the fairness of the construction market and impedes national economic integration, making it challenging for nonlocal companies to gain market entry (Young, 2000; Wang et al., 2020a; Barwick et al., 2021).

The analysis also reveals that company size significantly moderates local protectionism in the credit evaluation. Specifically, larger companies receive preferential treatment in credit evaluations and are more 'protected' by local authorities. Notably, in Yangzhou City and Taizhou City, the discrepancy in credit scores between local and nonlocal companies widens with size, from small to large. While the credit score gaps for large companies in Nanjing City, Suzhou City, and Zhenjiang City are similar to those for medium companies, both are significantly wider than those for small companies in these cities. This finding is indirectly supported by a substantial body of existing lit-

erature that large companies have received comprehensive competitive advantages within the construction industry (Rostami et al., 2015; Yap & Lock, 2017; Dainty et al., 2017; Tezel et al., 2018; Lu et al., 2019; Furci & Sunindijo, 2020; Asamoah et al., 2022) such that even local large companies are better protected than their SME peers in the credit evaluation process.

This is primarily because large local enterprises typically make substantial contributions to local GDP, tax revenue, and employment. Motivated by performance evaluation pressures, local governments tend to implicitly favor these firms through credit scoring mechanisms. This "scale–contribution–protection" transmission mechanism forms the foundation of institutional bias (Lei, 2023). Moreover, large local enterprises are often regarded as "stabilizers" and "flagships" of the local economy. Their high credit scores not only serve as recognition of their economic contributions but are also used by local governments to signal a favorable business environment to the broader market, thereby attracting further investment (Fuchs & Gehring, 2017). In addition, large enterprises often maintain closer networks with local governments, financial institutions, and rating agencies, making it easier for them to gain credit score advantages through access to "soft information", such as social responsibility records or historical cooperation (Klusak et al., 2024). This "home-field advantage" results in systematically higher credit ratings. However, the original aim of the Chinese social credit system was not to give larger companies a competitive edge, potentially leading to a monopolistic market. The system aims to assess companies based on their honesty and integrity, allowing trustworthy companies of any size to be recognized in the market. Therefore, the credit scoring method should be adjusted so as not to disadvantage SMEs, especially considering their importance for economic vitality.

5.2. Suggestions for the credit scoring mechanism

The government introduced the credit scoring mechanism in China's construction sector to acknowledge and incentivize credible practitioners, not for local authorities to amplify local protectionism in the industry. Thus, it is advised that the scoring system should be impartial, not favoring local construction contractors. For instance, the current Suzhou City, Taizhou City, and Zhenjiang City scoring criteria, for example, give particular weights to local tax contributions in addition to the quantity and size of projects a company completes in its local area. Local companies often have an edge in winning local bids due to closer ties with local owners, leading to better project quantity and size performance and higher local tax contributions. Though the scoring criteria do not consider local tax contributions or performance metrics in Nanjing City and Yangzhou City, they specify that certain bonus points are only for projects completed within the local area. This implies that awards from other cities do not boost credit

scores. Such practices could perpetuate a virtuous cycle linking social and financial performance (Xiong et al., 2016, 2019; Wang et al., 2023, 2024c) where local companies, already advantaged by local protectionism, further consolidate their dominance in the local construction market through biased credit scoring.

The notable moderating effect of company size amplifies the impact of local protectionism in credit evaluations, giving large local companies a greater advantage over their small and medium-sized counterparts. Thus, the scoring system, which currently favors larger construction companies, is recommended to be reevaluated. In the existing scoring criteria of Suzhou City, Taizhou City, and Zhenjiang City, larger companies inherently score higher in the performance score component (which includes tax contributions, project numbers, and sizes) because they typically secure more and larger contracts, leading to higher local tax revenues and better project performance. In Nanjing City and Yangzhou City, while the performance score component is absent, their criteria prioritize awards at the national or provincial level over city-level awards. However, small and medium-sized companies often struggle to achieve such recognition due to limited resources and management practices.

Eventually, the credit scoring system should be structured to ensure that trustworthy small and medium-sized companies have fair market opportunities; thus, promoting economic vibrancy and preventing monopolistic tendencies. The prevalence of local protectionism in China's construction market's credit evaluation process is partly attributed to the absence of a standardized national credit scoring system that assigns a uniform credit score to all construction companies.

Building on these findings, the following discussion highlights the innovative contributions of this study to the understanding of credit evaluation and local protectionism.

5.3. Innovative contributions

This study makes several innovative contributions to the literature on construction credit evaluation and local protectionism. First, unlike most prior research that focuses on single cities or subsets of contractors (e.g., Wang et al., 2023), this study examines multiple cities across Jiangsu Province, providing a broader empirical base for understanding local protectionism in credit evaluations.

Second, the study introduces firm size as a moderating factor, revealing that larger local companies benefit disproportionately compared to smaller ones. This "scale-dependent" perspective extends existing literature on local protectionism by quantifying how size amplifies credit score advantages, offering new insight into the mechanisms through which institutional biases operate.

Third, by combining cross-city empirical analysis with an evaluation of specific scoring mechanisms, the study provides a practical framework for assessing how credit systems may unintentionally reinforce regional advantag-

es. This approach highlights the dual role of credit scores as tools for both assessing integrity and potentially perpetuating local protectionism, an insight that has not been thoroughly explored in previous studies. Collectively, these innovations contribute both theoretically and practically, offering guidance for policymakers, contractors, and future researchers seeking to understand and mitigate biased credit evaluations in the construction sector.

6. Conclusions

6.1. Conclusive remarks

The construction industry has been found vulnerable to local protectionism, particularly in developing countries like China, where local cadres can be motivated by career advancement and the extraction of personal rents. Despite its prevalence and high social costs, local protectionism has not attracted adequate attention from most central governments. To improve construction contractors' credibility and enhance quality control and safety management in the construction industry, the Chinese Government has recently implemented a credit scoring mechanism and incorporated credit scores and extant price and technical factors into the tendering process for public projects. An increasing number of cities in China are embracing this mechanism to evaluate the reputation and integrity of construction contractors and to oversee their local construction markets. However, little attention has been paid to the possibility that local governments are using this new system as an additional tool to reinforce local protectionism.

This research gathered and examined the credit scores of 15,301 construction firms across five cities in Jiangsu Province, China, uncovering the prevalence and degree of local protectionism in the credit evaluation system. The research results empirically answer those previously proposed research questions. First, the results consistently indicate the presence of local protectionism in all five cities, meaning that local construction companies tend to receive higher credit scores than non-local firms, regardless of their size. Second, the study shows that company size significantly influences the degree of local protectionism: as firm size increases from small to large, the credit score gap between local and non-local firms widens. In other words, firm size moderates the extent of local protectionism in credit evaluations.

Although this paper predominantly examines the phenomenon of local protectionism within five specific cities in Jiangsu Province, its analytical rigor, grounded in a comprehensive dataset and robust statistical methodologies, furnishes a framework that is pertinent to understanding local protectionism in varied international settings. The potential applicability of these findings beyond the studied locales to other Chinese cities suggests that the insights gained here could serve as a reference for both researchers and practitioners around the globe, enabling them to contextualize and adapt this research within their distinct

environments. Furthermore, this study's exploration of the broader policy implications, coupled with its acknowledgment of the global paucity of quantitative research on local protectionism and credit evaluation in the construction sector, marks it as a significant contribution to the ongoing global dialogue on these subjects. By offering a detailed analysis and methodological approach, this paper provides valuable tools for international researchers and policymakers to further investigate and discuss local protectionism and credit scoring frameworks, thereby enhancing the global understanding of these critical economic phenomena.

These findings invite readers to think differently about credit scoring systems. Rather than being neutral instruments for promoting transparency and fairness, municipal credit evaluations can simultaneously act as mechanisms that reinforce regional advantages, particularly for larger local firms. Recognizing this dual role encourages policymakers, practitioners, and researchers to critically assess the broader implications of regulatory tools and to consider both their intended and unintended effects on market competition. Importantly, these results directly address the empirical context outlined in the Introduction. While the Chinese government has implemented credit scoring mechanisms to enhance contractor credibility and market transparency, this study demonstrates that such instruments can inadvertently reinforce local protectionism, particularly benefiting larger local firms. This finding highlights a mechanism through which regional biases persist despite central regulatory reforms and underscores the need for careful policy design to balance transparency, fairness, and market integration at the national level.

6.2. Theoretical contributions and practical implications

This study advances theory by illuminating how ostensibly objective municipal credit scoring systems can institutionalize local protectionism in the construction sector. By documenting that locality-based advantages are systematically amplified with firm size, it demonstrates a scale-contribution-protection mechanism that links fiscal interests of municipal governments to biased credit outcomes. In doing so, the research enriches theories of credit allocation and regional favoritism by showing how decentralized institutions embed structural advantages for large local firms while disadvantaging small and non-local competitors. Methodologically, the study moves beyond conventional survey- or interview-based approaches, employing city-level administrative credit data and firm-level characteristics to provide a more rigorous and objective test of these dynamics. Taken together, these contributions not only extend the literature on local protectionism but also bridge it with scholarship on institutional bias, decentralization, and market fragmentation, thereby offering a new conceptual lens for understanding how formal evaluation mechanisms can reinforce informal favoritism.

The findings also carry direct and significant practical implications for policymakers, regulators, and market participants. For policymakers, the evidence highlights the risks of allowing fragmented, city-level scoring regimes to reinforce regionalism and undermine fair competition, underscoring the need for a unified national scoring framework or, at minimum, the de-biasing of local criteria that overweight tax contributions and project records. For regulators, the study emphasizes the importance of transparent publication of scoring rubrics and the establishment of oversight mechanisms to ensure that municipal evaluations foster, rather than hinder, competitive neutrality. For construction firms, particularly SMEs and non-local entrants, the results shed light on structural disadvantages they face and the necessity of adjusting strategies – whether by seeking alternative financing channels, partnering with local actors, or advocating for national-level reforms. Finally, for local governments themselves, the findings reveal a long-term policy trade-off: while privileging large local firms may serve immediate fiscal interests, it risks eroding innovation, market diversity, and cross-regional integration. Recognizing these dynamics provides a foundation for designing more balanced credit evaluation systems that promote both fiscal sustainability and market fairness.

6.3. Limitations and future work

Despite its contributions, this study is subject to several limitations that warrant careful consideration. First, the dataset, though spanning three years and five cities in Jiangsu Province, cannot fully represent the diversity of institutional arrangements and fiscal dependencies across China's vast construction market. Further research should extend the analysis to other provinces and regions to assess whether similar locality-size dynamics are present nationwide. Second, municipal credit scoring rubrics vary across cities, and although this study documents general patterns, it cannot disentangle all rubric-specific effects. Future research could incorporate more granular credit record data, such as detailed addition and deduction items, to reveal the precise mechanisms through which local protectionism operates.

Building on these limitations, several directions for future work are clear. Expanding the dataset across provinces and over longer time horizons would improve generalizability and allow for comparative analysis of regional heterogeneity. Linking credit outcomes to broader economic indicators, such as GDP contribution, fiscal dependence, or political turnover, could help identify structural drivers of local favoritism. Additionally, a comparative perspective across industries and countries would shed light on whether similar institutional biases occur elsewhere, thereby enriching both academic understanding and policy debate. Finally, given data privacy concerns and uneven public availability of credit records, future studies may need to rely on partnerships with government agencies or innovative data-collection strategies.

Data availability statement

Some or all data, models, or code that support the findings of this study are available from the corresponding author upon reasonable request.

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