How Does the Expansion of Urban Commercial Banks Affect Business Entry?—Empirical Evidence from Local Government Debt Financing

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Abstract. This study investigates the impact of urban commercial bank (UCB) expansion in China on business entry within regions and explores the underlying mechanisms. Using panel data from 288 Chinese cities between 2007 and 2020 and employing an instrumental variables approach, we analyze the causal effects of UCB expansion on business entry. The findings indicate that UCB expansion facilitates infrastructure development and enhances the business environment through local government bond financing, thereby influencing enterprise entry. Mechanism analysis reveals that UCB expansion significantly increases local government debt financing, which supports land development, improves water supply systems, and enhances transportation networks, ultimately lowering operational costs for businesses. Moreover, UCB expansion enhances government efficiency, transparency, and contract dispute resolution, although it does not significantly impact market competition fairness. Heterogeneity analysis shows that UCB expansion has a pronounced positive effect on business entry in sectors such as petrochemicals and building materials, while its impact on industries like pharmaceuticals and transportation equipment is limited. Regionally, the effects of UCB expansion are most significant in central and southern China, with relatively weaker effects observed in the eastern region. This research provides new causal evidence for the role of UCBs in local economies and offers theoretical support and policy recommendations for regional financial policy design.

Keywords: Urban commercial banks, business entry, infrastructure, business environment, debt financing.

1. Introduction

Urban commercial banks (UCBs) play a crucial role in the local financial system and have significantly contributed to financial reform in China in recent years. Unlike large national banks, UCBs concentrate on local markets, providing more flexible credit approval processes and possessing valuable “soft information” within local economic networks. These attributes allow UCBs to deliver tailored credit support to market entities facing severe financing constraints, such as small and medium-sized enterprises (SMEs) and startups, thereby influencing their entry decisions and growth pathways.

However, existing literature has not sufficiently examined the causal effects and mechanisms by which UCB expansion impacts business entry. While much research has focused on the financial deepening effects of large state-owned or national commercial banks, the unique role of UCBs as “regional banks” in local economies has received less attention. Furthermore, significant regional disparities in financial environments, industrial structures, and government support policies lead to vastly different financing needs and risks for businesses in their entry decisions. Thus, a comprehensive investigation into the impact of UCB expansion on business entry and its mechanisms is essential for understanding the relationship between the local financial system and regional economic development.

In this context, this paper utilizes panel data from 288 Chinese cities spanning 2007 to 2020 and employs an instrumental variables approach to systematically analyze the impact of UCB expansion on business entry and its mechanisms. The findings indicate that UCB expansion influences business entry by facilitating infrastructure development and enhancing the business environment through

local government bond financing. Further heterogeneity analysis reveals notable differences in these effects across various industries and regions.

This paper contributes to the field by: first, elucidating the micro-mechanism through which UCB expansion affects business entry via the dual pathways of "infrastructure improvement and business environment optimization"; second, innovatively developing a "geographical-economic distance interaction instrument" to address endogeneity bias; and third, providing targeted policy recommendations based on industry financing dependence and regional financial ecological differences.

2. Theoretical Hypotheses

In China, the promotion tournament mechanism among local governments is a vital driver of regional economic development. Local governments leverage financial tools like urban investment companies and UCBs for financing. Following the 2008 global financial crisis, the central government accelerated local infrastructure development through a 4 trillion yuan stimulus package. UCB expansion enhances local government financing capabilities by increasing credit support to urban investment companies and purchasing urban investment bonds, thereby facilitating infrastructure development. Improved infrastructure reduces operational costs for businesses and enhances production efficiency, attracting more enterprises to enter the market.

The expansion of UCBs strengthens local government financing, which in turn promotes infrastructure development. Enhanced infrastructure lowers businesses' operational costs and increases their production efficiency, encouraging greater market entry (Guo & Xiong, 2018). For example, improvements in transportation infrastructure reduce logistics costs, while upgrades in water and electricity supply decrease production costs. These cost reductions make regions more attractive to businesses, particularly those in infrastructure-dependent industries (Caliendo et al., 2015).

Furthermore, UCB expansion supports financing for urban investment companies, leading to local infrastructure improvements and optimizing the business environment. Enhanced infrastructure enhances government efficiency, reduces operational costs, increases transparency, and decreases contractual disputes (Cai et al., 2020). This optimization of the business environment lowers entry barriers and operational risks for new enterprises, attracting more businesses to the area. Specifically, improved government efficiency minimizes the time and costs associated with administrative approvals, increased transparency lowers policy risks, and fewer contractual disputes reduce legal risks (Guo & Xiong, 2018).

In summary, UCB expansion influences business entry by promoting infrastructure development and optimizing the business environment through urban investment bonds. Better infrastructure lowers operational costs and boosts production efficiency, while an improved business environment mitigates policy and legal risks, ultimately facilitating business entry (Caliendo et al., 2015). Enhanced transportation infrastructure, improved water and electricity supply systems, greater government efficiency, increased transparency, and fewer contractual disputes all contribute to a more favorable business climate (Cai et al., 2020). The mechanism flowchart is illustrated in Figure 1.

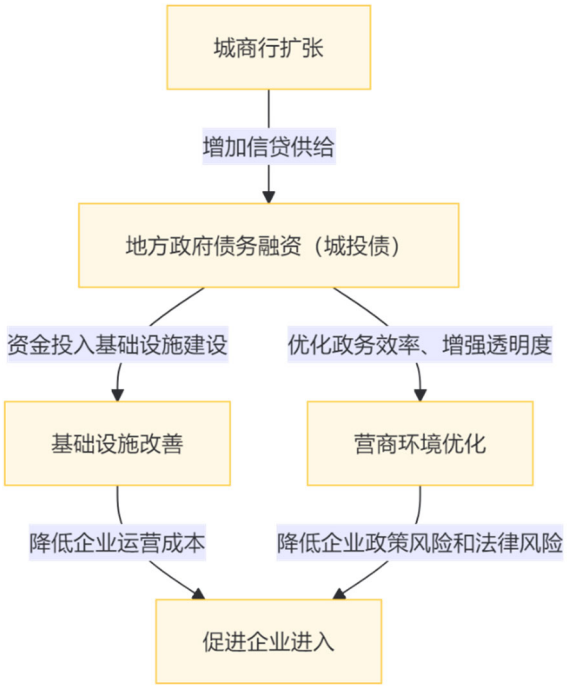

Figure 1. Transmission Mechanism of UCB Expansion's Impact on Business Entry

Based on the aforementioned analysis, this paper presents the following hypotheses:

H1: The expansion of UCBs fosters infrastructure improvement through urban investment bonds, thereby facilitating business entry.

H2: The expansion of UCBs enhances the business environment via urban investment bonds, thereby facilitating business entry.

3. Empirical Design

3.1 Data Sources and Sample Selection

This study draws on data from three primary sources. First, data on the number of business establishments obtained from enterprise registration records. Also, bank expansion data sourced from the CSMAR (China Securities Market & Accounting Research) database. Finally, control variable data from the *China Urban Statistical Yearbook*. The sample for this research includes 288 cities over the period from 2007 to 2020.

3.2 Variable Definitions

The dependent variable is the number of newly established businesses, defined as the count of new enterprise registrations for a given year. The independent variable, referred to as bank expansion (Bank_expansion), is measured by the number of new branches opened by urban commercial banks in each city during that year. Control variables consist of a set of urban economic indicators selected from the urban statistical yearbook, including city GDP, population size, fiscal revenue and expenditure, and market competitiveness.

Table 1. Descriptive Statistics

Variables	Observations	Mean Values	Standard Deviation	Minimum	Maximum
Entry	4212	1258.379	3058.326	1.000	46187.000
Bank_expansion	4212	15.040	24.412	0.000	120.000
ln gdp	3643	7.013	0.874	4.124	9.791
ln pop	3645	5.843	0.699	2.898	8.124
finance	3643	2703.702	1439.370	740.591	26298.162
hhi	4212	0.208	0.190	0.000	0.709

3.3 Model Specification

To investigate the impact of UCB expansion on business entry, the following regression model is established:

$$Entry_{it} = \beta Bank\_expansion_{it} + \gamma X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

In this model, $entry_{it}$ represents the number of new businesses established in city i at time t; $bank\_expansion_{it}$ indicates the degree of UCB expansion in city i during period t (measured by the number of new branches opened by external banks); X_{it} denotes the control variables; μ_i represents city fixed effects that account for individual city characteristics affecting business entry; λ_t captures year fixed effects to control for macro factors that change over time; and ϵ_{it} is the random error term.

4. Empirical Analysis

4.1 Baseline Regression Analysis

The results of the baseline regression indicate that the expansion of UCBs has a significant positive externality on business entry. Specifically, for every additional branch opened by external UCBs, approximately 35 new businesses are registered, demonstrating the substantial role of UCB expansion in facilitating business establishment.

Table 2. Baseline Regression Results

	(1)	(2)	(3)	(4)
Bank Expansion	38.527***	54.742***	33.896***	34.694***
	(5.634)	(8.059)	(9.058)	(10.902)
GDP				1432.154**
				(556.736)
Population				1652.421
				(1815.759)
Financial Revenue and Expenditure				0.015
				(0.060)
Competitiveness				-1478.545
				(1746.870)
_cons	678.946***	435.265***	748.327***	-18573.635*
	(81.094)	(121.028)	(136.032)	(10674.780)
Control	*NO*	*NO*	*NO*	*YES*
Year_FE	*NO*	*NO*	*YES*	*YES*
City_FE	*NO*	*YES*	*YES*	*YES*
Observations	4212	4211	4211	3635
AdjR2	0.09	0.52	0.54	0.55

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

4.2 Endogeneity Test

There may exist a reverse causal relationship between the expansion of UCBs and business entry, which could result in biased estimation outcomes. To address this endogeneity issue, we draw on the methodology proposed by Goetz et al. (2013) to construct a gravity deregulation model. Grounded in financial geography theory, we develop a fractional logistic regression model that accounts for geographical distance and economic attraction to estimate the predicted values of UCB asset distribution. This approach generates an indicator of exogenous expansion propensity, aggregated at

the city-year level for use as an instrumental variable. Geographical distance is calculated using the latitude and longitude coordinates of city centroids sourced from Baidu Maps, while economic indicators are obtained from the *China City Statistical Yearbook*.

In line with financial geography theory, decisions regarding the cross-regional expansion of UCBs are jointly influenced by geographical distance and economic attractiveness. Accordingly, this study constructs the following fractional logistic regression model to estimate the predicted values of UCB asset distribution:

$$Share_{bijt} = \alpha \cdot Distance_{bij} + \beta \cdot ln\left(\frac{Pop_{it}}{Pop_{jt}}\right) + \epsilon_{bijt}$$

In this model, $\text{Distance}_{\text{bij}}$ denotes the straight-line distance between city *i*, where the UCB is headquartered, and the administrative center of the target city *j*. Meanwhile, $\ln\left(\frac{\text{Pop}_{\text{it}}}{\text{Pop}_{\text{jt}}}\right)$ represents the logarithm of the population ratio between city *i* and city *j*, serving as a measure of relative market size. Additionally, the analysis incorporates fixed effects for the UCB headquarters location and year fixed effects.

Using the fitted values from the first-stage regression, this study constructs an indicator of the exogenous expansion propensity of UCB *b* in the target city *j*:

$$Bank\_expansion\_iv_{bijt} = \sum_{b} \text{Share}_{\text{bijt}}$$

By aggregating this indicator at the city-year level, we create an instrumental variable that reflects the theoretical intensity of UCB expansion in city *j*, free from the influences of endogenous decision-making and driven by exogenous geographical and economic factors.

In terms of relevance, banks tend to expand in regions that are geographically closer and possess higher levels of economic development. The constructed instrumental variable effectively captures relative market size differences and is significantly associated with UCB expansion. As for exogeneity, geographical distance is an objective measure independent of economic characteristics, while the economic development indicators exhibit a non-linear relationship with the population size of the target city, confirming their exogenous nature.

$$BankExpansion_{jt} = \beta Bank\_expansion\_iv_{bijt} + \gamma X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

The first-stage regression reveals a significant effect of the instrumental variable on the expansion of UCBs.

$$Entry_{jt} = \beta Bank\_expansion_{jt} + \gamma X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

In the second-stage regression, the coefficient for UCB expansion is 131.808, significant at the 1% level, indicating that each additional UCB branch corresponds to approximately 132 new registered businesses in the area. This result aligns with the baseline regression, reinforcing the conclusion that the positive impact of UCB expansion on business entry is indeed causal.

Table 3. Endogeneity Test Results

	(1)	(2)
	Phase One	Phase Two
Bank_expansion_iv	0.917***	
	(0.116)	
Bank_expansion		131.808***
		(25.045)
Control	*YES*	*YES*
Year_FE	*YES*	*YES*
City_FE	*YES*	*YES*

Observations	3528	3528
F_statistics	.	62.52

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

4.3 Robustness Checks

To verify the robustness of the baseline regression results, this study performs several robustness checks from various angles. These include substituting dependent and independent variables, excluding municipalities directly under the central government, omitting specific years, and applying winsorization. The findings from these robustness tests are presented in Table 3.

Table 4. Results of Robustness Checks

	(1)	(2)	(3)	(4)	(5)
	Substitute Dependent Variable	Substitute Independent Variable	Exclude Directly Governed Municipalities	Omit Specific Years	**Winsorization**
Bank_expansion		1667.651***			
		(353.700)			
Entry	244.929***		131.808***	126.152***	103.262***
	(47.261)		(25.150)	(24.832)	(21.240)
Control	*YES*	*YES*	*YES*	*YES*	*YES*
Year_FE	*YES*	*YES*	*YES*	*YES*	*YES*
City_FE	*YES*	*YES*	*YES*	*YES*	*YES*
Observations	3234	3524	3524	3253	3454
F_statistics	70.58	65.60	68.11	71.46	60.42

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

(1) Core Variable Substitution

To assess the robustness of the results, the dependent variable was lagged by one period and combined with the current value. Furthermore, the independent variable was changed from branches to sub-branches. In both scenarios, the coefficient for the expansion of urban commercial banks was significant at the 1% level, thereby confirming the robustness of the baseline regression results.

(2) Sample Selection Bias

By excluding samples from directly governed municipalities and omitting data from the 2008 financial crisis, along with applying winsorization, the regression results remained significant. This indicates that the research conclusions are robust across various sample treatment approaches.

4.4 Heterogeneity Analysis

(1) Industry Heterogeneity Analysis

An analysis by industry demonstrates that enterprises in sectors such as building materials, productive services, and petrochemicals significantly respond to the expansion of urban commercial banks. In contrast, industries like pharmaceuticals and metal smelting exhibited no significant impact. The building materials sector, which relies on regional transportation networks and industrial land, benefits from reduced costs resulting from bank expansion. The petrochemical industry, sensitive to energy infrastructure and port facilities, gains advantages from special bonds issued by urban banks that enhance economies of scale. Similarly, the productive services and food and beverage sectors are affected by government efficiency, with bank expansion lowering institutional transaction costs. Conversely, the metal smelting sector depends on large state-owned banks, facing market and environmental risks, while the pharmaceutical manufacturing sector contends with long research cycles, high policy risks, and a reliance on venture capital, resulting in a weaker response to the expansion of urban commercial banks.

Table 5. Results of Industry Heterogeneity Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	Pharmaceutical Manufacturing	Building Materials	Productive Services	Electronic Equipment	Petrochemicals	**Food and Beverage**
Bank_expansion	-0.002	17.521***	80.869***	0.924**	0.937***	1.089**
Control	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Year_FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
City_FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Observations	1129	2881	3410	2075	2217	2400

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

(2) Regional Heterogeneity Analysis

Analyzing from a regional perspective, the regression coefficient for the eastern region is not significant, likely due to market saturation, intense competition, and diverse financing channels available to enterprises, which diminish the impact of urban commercial bank expansion. Conversely, the central region shows a significant regression coefficient, indicating that the expansion of urban commercial banks effectively fills financial service gaps and encourages business entry. The western region also exhibits significant coefficients; while they alleviate financing constraints for enterprises, the low level of marketization indicates a need for improved efficiency in credit resource allocation. The southern region presents the highest regression coefficient, correlated with its dynamic private economy, as urban commercial banks are more likely to support local private enterprises. In the northern region, although the regression coefficient is high, the substantial standard error suggests potential misallocation of credit resources due to policy-driven expansion.

Table 6. Results of Regional Heterogeneity Analysis

	(1)	(2)	(3)	(4)	(5)
	Eastern Region	Central Region	Western Region	Southern Region	Northern Region
Bank_expansion	31.154	124.462***	69.848***	127.868***	140.711***
	(23.749)	(12.200)	(19.933)	(13.146)	(33.347)
Control	*YES*	*YES*	*YES*	*YES*	*YES*
Year_FE	*YES*	*YES*	*YES*	*YES*	*YES*
City_FE	*YES*	*YES*	*YES*	*YES*	*YES*
Observations	1139	1298	633	1687	1383

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

Further analysis from the perspectives of urban financial environments and fiscal policies reveals that cities with existing bank branches experience a stronger positive effect from the expansion of urban commercial banks on business entry. In highly competitive samples, the marginal effects of bank expansion are more apparent. Moreover, cities with higher fiscal expenditures show significantly greater expansion coefficients compared to those with lower fiscal expenditures, indicating that fiscal-financial collaboration can enhance the business environment. Nonetheless, even in cities with low fiscal expenditures, urban commercial banks can still generate positive outcomes through the optimization of credit structures.

Table 7. Results of Further Heterogeneity Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	Existing Bank Branches	No Existing Bank Branches	Low Competition Sample	High Competition Sample	High Fiscal Expenditure Sample	Low Fiscal Expenditure Sample

Bank_expansion	142.447***	68.250**	108.160**	117.305***	114.883***	110.697***
	(36.391)	(26.519)	(50.344)	(25.989)	(19.932)	(32.278)
Control	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Year_FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
City_FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Observations	1193	2330	1619	1895	1779	1710

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

4.5 Mechanism Analysis

This section investigates the micro mechanisms by which the expansion of urban commercial banks influences business entry. Utilizing bank expansion as the explanatory variable, we assess its effect on local government bonds, special bonds, general bonds, and infrastructure development indicators. The regression model employed is as follows:

$$ln\_debt_{it} = \beta Bank\_expansion_{it} + \gamma X_{it} t + \mu_i + \lambda_t + \epsilon_{it}$$

$$ln\_infrastructure_{it} = \alpha + \beta Bank\_expansion_{it} + \gamma X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

The results reveal that the expansion of urban commercial banks enhances debt financing capacity, accelerates infrastructure development, provides enterprises with production space, reduces production costs, and improves operational efficiency.

Table 8. The Impact of Urban Commercial Bank Expansion on Debt Financing and Infrastructure

	(1)	(2)	(3)	(4)	(5)	(6)
	Local Government Bonds	Special Bonds	General Bonds	Construction Land Area	Water Pipeline Length	Number of Bridges
Bank_expansion	0.019***	0.019***	0.015***	1.461***	17.201***	1.929***
	(0.005)	(0.005)	(0.005)	(0.257)	(4.269)	(0.467)
Control	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Year_FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
City_FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Observations	3387	3387	3387	3377	3381	3381

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

Utilizing an instrumental variable approach, we examine the impact of urban commercial bank expansion on the business environment. The regression model is structured as follows:

$$\text{Business\_environment}_{it} = \beta\ \text{Bank\_expansion}_{it} + \gamma\ X_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

The results demonstrate that the expansion of urban commercial banks significantly improves the overall business environment score, the administrative environment, and government transparency. Conversely, it has a significant negative effect on contract disputes, indicating that this expansion enhances administrative efficiency and mitigates operational and legal risks for businesses. However, the impact on fair competition is not significant, likely due to the primary constraint of policy stability on business entry.

Table 9. Impact of the Business Environment on Business Entry

	(1)	(2)	(3)	(4)	(5)
	Overall Score	**Government Administrations**	Government Transparency	Fair Competition	**Contract Disputes**
Bank_expansion	0.197*	0.380**	0.598*	0.054	-0.598**
	(0.109)	(0.191)	(0.331)	(0.061)	(0.244)
Control	*YES*	*YES*	*YES*	*YES*	*YES*

Year_FE	*YES*	*YES*	*YES*	*YES*	*YES*
City_FE	*YES*	*YES*	*YES*	*YES*	*YES*
Observations	838	838	838	838	838

Note. *, **, and *** represent significance levels of 10%, 5%, and 1%, respectively. The values in parentheses indicate standard errors clustered at the city level.

5. Conclusion and Further Discussion

This study finds that the expansion of UCB facilitates infrastructure development and enhances the business environment through local government bonds, thereby reducing operational costs and policy risks for companies and encouraging their entry into the market. The paper proposes the following policy recommendations. Firstly, orderly expansion should be promoted. Instead of completely restraining the growth of urban commercial banks, policies should encourage their structured expansion within a well-defined regulatory framework to support balanced regional economic development. Second, it is recommended to optimize debt instruments by transitioning local government bonds toward greater efficiency, emphasizing the appropriate selection and application of these financial tools. For example, targeted instruments such as Real Estate Investment Trusts (REITs) could effectively support local infrastructure projects. Finally, it is advised to implement precise policies that cater to the heterogeneous characteristics of industries and regions. For instance, in capital-intensive sectors, a combination of "special bonds + project loans" should be encouraged, while in technology-driven industries, pilot initiatives for a "debt-equity linkage" mechanism may be beneficial. In the future, further researches should investigate the long-term effects of urban commercial bank expansion on post-entry business performance, particularly in terms of innovation, production efficiency, and market competitiveness. Additionally, exploring the relationship between urban commercial bank expansion and local government interventions, alongside local government behavior, will provide valuable theoretical support for the development of regional financial policies.

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