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Local Loan-to-Deposit Ratio and Economic Development Level: An Empirical Study Based on the Chaoshan Region

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Abstract: Using panel data comprising the three cities of Chaozhou, Shantou, and Jieyang in the Chaoshan region, this paper employs a panel regression model to examine the impact of the local loan-to-deposit ratio on the level of economic development. It further introduces the weighted average interest rate on newly issued inclusive loans to small and micro enterprises as a proxy variable for the credit pricing environment and tests its moderating effect. The findings are as follows. First, the local loan-to-deposit ratio has a significant positive effect on gross regional product, indicating that an increase in the loan-to-deposit ratio helps promote local economic development. Second, when per capita GDP is used as an alternative measure or the economic development level in the following year is adopted, this conclusion remains valid, and the effect exhibits a certain degree of intertemporal persistence. Third, the higher the interest rate on inclusive loans to small and micro enterprises, the weaker the positive effect of the loan-to-deposit ratio on economic development, suggesting that lower credit costs help strengthen the growth effect of the loan-to-deposit ratio. This paper provides empirical evidence for the Chaoshan region to improve the efficiency of financial resource allocation, optimize credit extension, and promote high-quality economic development.

Keywords: Local Loan-To-Deposit Ratio; Economic Development Level; Chaoshan Region; Panel Regression

1. Introduction

The regional economy is a basic unit of the national economy. China's regions differ substantially in resource endowments, industrial foundations, and financial conditions, exhibiting pronounced regional characteristics. Research based on national macroeconomic growth trends often obscures intra-regional divergence, making it difficult to accurately identify the strengths and weaknesses of regional economies. Therefore, refining regional economic research involves not merely comparing GDP levels but, more importantly, examining the current local allocation of capital, labor, and financial resources and mapping the internal mechanisms and practical issues in economic development. If a region's financial resources remain deposited in financial institutions for a long time and are not effectively transformed into loans and investment, regional economic growth will lack sustained momentum.

Guangdong's total economic output has long ranked first in the country. It cannot be ignored, however, that intra-provincial development is uneven and highly differentiated. The core area of the Pearl River Delta concentrates most of the province's industry, population, and financial resources, while eastern, western, and northern Guangdong lag relatively behind. The Chaoshan region, located in the eastern wing of Guangdong and comprising the three cities of Shantou, Chaozhou, and Jieyang, is an important part of Guangdong's coastal economic belt and a key node connecting the Greater Bay Area (the cooperation area in south of Guangdong Province) with the Western Strait Economic Zone. Shantou is both a special economic zone and a provincial sub-central city, playing a leading role in eastern Guangdong. The three Chaoshan cities are densely populated, have an active private economy, and are rich in overseas Chinese resources; however, their per capita economic level, industrial sophistication, and efficiency of financial resource allocation still lag behind those of the Pearl River Delta. Chaoshan occupies an important position in Guangdong's coordinated regional development while also facing insufficient growth momentum and financial support.

In 1990s, the market supervisor (People's Bank of China) established for the first time a

regulatory indicator requiring the loan-to-deposit ratio (LDR) not to exceed the lever of 75%. The following year, the LDR was written into the Commercial Bank Law, formally becoming one of the regulatory indicators for commercial banks. To control the malignant inflation at that time, the ratio of loan balances to deposit balances was not to exceed 75%. However, as banking business models and the financial environment continued to change, the rigid LDR could no longer accommodate the rapid development of the new financial and economic system. Increasing the supply of the monetary base became a driving force for economic development, and removing the LDR restriction was conducive to enhancing banks' credit creation capacity. Especially in the downward phase of the economic cycle, expanding credit extension to the real economy, reducing financing costs, and curbing financial irregularities became new issues. As domestic interest rate liberalization accelerated, deposit competition intensified, financial disintermediation persisted, and household deposits continued to shift (to wealth management products and capital markets), deposits as a share of total bank liabilities kept declining, and the traditional logic of "determining loans by deposits" continued to weaken. In 2015, the related government formally changed the LDR from a statutory regulatory indicator to a liquidity risk monitoring indicator, and the statutory LDR cap that had existed for 20 years was officially abolished [1].

The LDR is an intuitive indicator of how a region's financial resources are converted into support for local economic development. Deposits represent idle local financial resources, whereas loans represent funds actually extended. The LDR is the ratio of the balance of various loans to the balance of deposits of regional financial institutions. A high LDR indicates that a larger proportion of deposits flows out of financial intermediation and is converted into loans; conversely, a low LDR indicates that financial institutions hold substantial idle funds, fund idling is prominent, and the funds of financial institutions cannot complete an effective circulation, greatly weakening the value-added effect of local investment. It can be seen that the LDR is not merely an operating indicator for financial institutions; it is also a signal of the efficiency of local financial resource conversion. Regarding the continued academic value of this indicator, Li and Zhou [2]. examined, from both aggregate and local dimensions, whether the Net Stable Funding Ratio can replace the LDR as a liquidity risk monitoring indicator. Their empirical results show that commercial banks exhibit substantial differences in compliance rates under the two indicator systems. It is thus evident that expanding and deepening research on this indicator still has academic value.

At the micro level, the LDR of financial institutions affects the operations and asset quality of commercial banks. Empirical studies find that an increase in the LDR can effectively reduce bank risk through channels such as the capital adequacy ratio, interbank assets, and shadow banking business. Therefore, regulators should strengthen supervision of the LDR as a liquidity monitoring indicator, which is of great significance for preventing bank risks and maintaining financial stability [3]. Wang et al. [4] using quarterly data of commercial banks from 2007 to 2017 as a sample, conducted a refined study and found an inverted U-shaped nonlinear relationship between the LDR and commercial bank profitability, with the turning point occurring after the removal of the LDR cap. That study further explored the mediating role of the non-performing loan ratio.

Berger et al. [5] argue that the purpose of bank prudential regulation is to enhance financial stability, but existing empirical research lacks studies combining such regulation with financial system risk, especially regarding how supervisory enforcement actions (EAs) affect systemic risk. To fill this gap, they empirically examined the relationship between EAs and banks' contribution to systemic risk and found that banks' contribution to systemic risk after EAs was significantly smaller than before EAs, indicating that EAs are associated with enhanced financial stability. From the perspective of LDR regulation and using a double machine learning approach, Han and Fu [6]. conducted an empirical study with panel data of listed banks from 2012 to 2021. They found that LDR regulatory reform increases bank risk in the short term through two channels: raising bank leverage ratios and altering credit structure. This adverse shock is more pronounced in regional small banks; in the long term, it can reduce bank credit concentration but fails to curb shadow banking risk.

At the macro level, the LDR affects monetary policy transmission. Against the background of the removal of the 75% LDR red line in 2015, Li and Wang [7]. raised the question of whether liquidity constraint indicators represented by the LDR still affect the transmission of monetary policy effects. Examining the credit transmission channels of monetary policy and liquidity constraints, they used microdata from 89 Chinese commercial banks from 2007 to 2016 to construct a panel data model with fixed effects for empirical analysis. They separately tested the effects of micro-level differences in bank liquidity and macro-level changes in the monetary policy environment on credit regulation outcomes. They found that liquidity constraints significantly inhibit bank credit, and that liquidity levels affect the ultimate effect of monetary policy credit regulation, but banks with poor liquidity themselves are not subject to this constraint.

The factors affecting regional development are diverse. Taking the launch of local government public data open platforms as the policy treatment. Using a difference-in-differences model, Jing et al [8]. demons-trated that open government data (OGD) contributes to green economic growth through energy efficiency gains, industrial structure upgrading, and green technological innovation. The growth of digital financial services opens up a promising avenue for advancing regional development, fostering inclusive growth, and improving environmental sustainability. Based on Chinese provincial panel data, Becha et al [9]. empirically found that the impact of digital inclusive finance on economic growth continues to strengthen, with financial inclusion playing a catalytic role. Their related research provides empirical evidence for digital finance in contexts such as regional development and environmental sustainability. Digital industry agglomeration has an important impact on economic development [10]. At the micro level, digital industry agglomeration can attract digital talent and, through knowledge spillovers and economies of scale [11]. promote enterprise technological innovation. At the macro level, innovation interactions such as platform construction in digital industry agglomeration [12]. enhance regional innovation efficiency and promote regional green development. In addition, related studies on tax policy [13], the language services industry [14], and digital finance [15] provide feasible research perspectives for regional economic development. This paper takes the LDR in the Chaoshan region as the core explanatory variable and uses a simple panel regression model to examine its impact on economic development. Specifically, it uses panel data from the three cities of Chaozhou, Shantou, and Jieyang from 2015 to 2024, measures the level of economic development by the logarithm of gross regional product, measures the local LDR by the ratio of the balance of loans to the balance of deposits of financial institutions, and includes control variables such as the investment growth rate, labor force share, human capital potential, foreign investment level, government fiscal expenditure, degree of openness, and urbanization process. In addition to the baseline regression, this paper replaces the dependent variable with per capita GDP, examines the impact of the LDR on economic development in the following year, and introduces the weighted average interest rate on newly issued inclusive loans to small and micro enterprises to test whether the credit pricing environment moderates the relationship between the LDR and economic development.

Refining research on the economic mechanisms of the Chaoshan region has both theoretical and practical significance. From a regional perspective, the three Chaoshan cities occupy an important position in Guangdong's coordinated regional development, but existing research pays insufficient attention to their efficiency of financial resource allocation. This paper provides empirical evidence from eastern Guangdong. From an indicator perspective, the LDR directly reflects the ability of local deposits to be converted into loans and is closer than indicators such as financial development scale and total credit to the policy question of "whether financial resources remain local and whether they support local enterprises." From a policy perspective, clarifying that a stable relationship exists between the LDR and the level of economic development provides a practical basis for improving local credit conversion efficiency and optimizing the credit allocation structure; the moderating effect of the interest rate on inclusive loans to small and micro enterprises can also provide a reference for reducing corporate financing costs and improving the credit pricing environment.

The regression results show that the local LDR is significantly positively correlated with the

level of regional economic development. In the baseline regression, for every 1% increase in the LDR, gross regional product increases by approximately 1.20% on average, and the result is significant at the 1% level. After replacing the dependent variable with per capita GDP, the LDR coefficient remains positive and is still significant at the 1% level; when GDP in the following year is used as the dependent variable, the positive effect of the LDR coefficient remains unchanged and is significant at the 1% level, indicating that this positive relationship has a certain degree of robustness and intertemporal persistence. The moderating effect test finds that the higher the interest rate on inclusive loans to small and micro enterprises, the weaker the positive effect of the LDR on economic development; the lower the interest rate, the stronger the positive effect. The interaction term coefficient is -0.016 and is significant at the 10% level. Among the control variables, the share of government fiscal expenditure and the degree of openness are negatively correlated with the level of economic development, while the urbanization process is significantly positive. These results also indirectly reflect the impact of government expenditure efficiency, foreign trade structure, and urbanization quality on economic growth in the Chaoshan region.

The paper is divided into four parts. The first part is the introduction. The second part presents the research hypotheses. The third part is the empirical research, including descriptive statistics of the data, baseline regression, and robustness tests. The fourth part summarizes the main conclusions and corresponding policy recommendations.

2. Research Hypotheses

The efficiency with which financial resources are converted into local investment directly affects a region's growth momentum. On the one hand, financial institutions have the function of absorbing savings, transforming them into loanable funds, and allocating them in the market. By reducing information costs and transaction costs, the existence of financial institutions pools dispersed savings and directs them toward more efficient sectors. On the other hand, bank credit is the primary source of external financing for enterprises, and credit availability determines whether enterprises can expand investment, upgrade equipment, and maintain operations. For the private economy and small and medium-sized enterprises, bank loans occupy a dominant position in external financing. The difficulty and volume of local credit extension largely determine the space for enterprise investment expansion.

The LDR measures the proportion of local deposits converted into local loans. A high LDR indicates that financial institutions retain more local savings locally and convert them into credit extension, making it easier for residents and enterprises to obtain financial support. A low LDR indicates that a large volume of deposits has not been converted into loans and investment and may have accumulated in other forms, thereby constraining the financing of local residents and enterprises. For small and medium-sized enterprises, bank loans are often the main source of funds. Especially when non-bank institutions are underdeveloped and external financing channels are limited, a low LDR directly restricts their investment and production activities. In this sense, the LDR is not merely a bank operating indicator but also a signal for observing the efficiency of local financial resource conversion. An increase in the LDR means that more local financial resources are used to support the local real economy, financing constraints on residents and enterprises are eased, conditions for investment and production expansion improve, and the level of regional economic development may therefore rise. Based on the above analysis, this paper proposes:

H1: The local LDR has a significant positive effect on the level of economic development. The higher the LDR, the higher the level of economic development.

The effect of the LDR on economic development is not isolated; it may be influenced by the credit pricing environment. For the same scale of credit extension, when the financing costs of residents or enterprises differ, the effects on investment and production may differ. When the interest rate on inclusive loans to small and micro enterprises declines, the interest burden on residents or enterprises is reduced, investment projects previously shelved due to high financing costs become viable, and loans are more easily converted into actual investment and production activities. As a result, the positive effect of the LDR may be stronger. Conversely, if the loan interest rate is high, even if enterprises obtain loans, they may reduce

investment because interest expenses squeeze profits, or use funds for working capital rather than expansion, thereby weakening the promoting effect of the LDR on economic development. From this perspective, the interest rate level affects the efficiency of LDR transmission to real economic activity. When interest rates are low, the credit extension brought about by a higher LDR is more easily converted into effective investment; when interest rates are high, such conversion is inhibited. Based on this, this paper proposes:

H2: The interest rate on inclusive loans to small and micro enterprises exerts a negative moderating effect on the relationship between the LDR and the level of economic development. The higher the interest rate, the weaker the positive effect of the LDR on economic development; the lower the interest rate, the stronger the positive effect.

3. Empirical Research

3.1 Variable Definitions and Data Description

The dependent variable is the level of economic development (DN). Gross domestic product (GDP) of a region is often used to quantify the level of regional economic development. This indicator has advantages such as a simple accounting method, easy data availability, and convenience for intertemporal and cross-regional comparisons. However, a high GDP value may result from multiple factors such as a large population and a vast municipal area, making it difficult to accurately reflect the efficiency or quality of regional economic development. Per capita GDP, by contrast, can effectively eliminate interference from scale factors and better measure the level and efficiency of regional economic development. Therefore, in the baseline regression, this paper uses gross regional product to proxy for DN and uses per capita GDP (gdp) for robustness tests. Considering that gross regional product values are relatively large, this paper takes the logarithm of gross regional product.

The core explanatory variable is the regional loan-to-deposit ratio (DL). The LDR is the ratio of the balance of various loans to the balance of deposits of regional financial institutions. This indicator intuitively reflects the ability to convert savings into credit and investment and embodies the efficiency of financial allocation. Generally, the higher the LDR, the larger the portion of the region's savings that is put into use as loans to support the development of the local real economy.

In addition, to avoid error interference in regression results caused by factors such as omitted variables, and with reference to existing economic growth theories and related literature, this paper also adds several control variables.

(1) Production factors. In simple production theory, technology, capital, and labor are common factors. For most regions in China, capital accumulation and the demographic dividend are important engines of economic growth. The investment growth rate (Inv) is the growth rate of fixed asset investment in the region. The labor force share (Lab) is the ratio of the total number of registered employed persons at year-end in the region to the resident population of the region. Human capital potential (Edu) is measured by the ratio of the number of college students enrolled in the region in the current year to the resident population of the region, multiplied by 10,000, i.e., the number of college students per 10,000 people.

(2) External linkages. Import and export trade is one of the pillar industries of some coastal cities. The "overseas Chinese hometown" resources in Fujian and Guangdong provide more channels for trade. A higher level of foreign trade (Open) helps introduce advanced foreign production technology and management experience, which provide a strong guarantee for the high-quality development of the local economy. This paper measures Open by the ratio of total imports and exports denominated in RMB in the current year to the region's gross regional product. Foreign investment level (Fdi) can directly provide financial support for production and bring technological spillovers. This paper measures it by the ratio of total foreign direct investment to economic size, multiplied by 100.

(3) Local development status. Urbanization promotes the migration of rural labor to cities, i.e., the transfer of labor from low-efficiency agricultural production sectors to high-efficiency industrial production sectors, thereby improving resource allocation and production efficiency in society as a whole. The urbanization process (Urb) is the ratio of urban population to total population in the region. Meanwhile, the greater the government fiscal expenditure, the stronger the government's intervention in the market. Government fiscal expenditure (Gov) is measured by the share of general public budget

expenditure in the economy.

All the above indicators are obtained from statistical yearbooks. The three regions of Chaozhou, Shantou, and Jieyang (the Chaoshan region) are geographically adjacent and culturally convergent, with relatively close personnel exchanges, industrial division of labor, and financial linkages. Considering that data in statistical yearbooks are mostly annual, to ensure data sufficiency, this paper incorporates the relevant indicators of the three regions into the model for regression, thereby alleviating the problem of insufficient annual data in statistical yearbooks.

3.2 Model Specification

In the empirical research, this paper constructs a simple panel regression model:

$$y_{i,t} = \alpha + \beta DL_{i,t} + \gamma Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where $y_{i,t}$ denotes the gross domestic product of the prefecture-level city in the current year, $DL_{i,t}$ denotes the loan-to-deposit ratio of the prefecture-level city in the current year, and Controls denotes the remaining control variables. The relevant definitions have been explained above.

3.3 Descriptive Statistics

Table 1 reports the descriptive statistics for the main variables. The sample consists of panel data comprising the three cities of Chaozhou, Shantou, and Jieyang, with a total of 30 observations. The dependent variable GDP is the logarithm of gross regional product, with a mean of 7.603, a median of 7.663, a standard deviation of 0.578, a minimum of 6.814, and a maximum of 9.840. This indicates a certain degree of variation in economic scale across the sample, arising from both intra-regional economic growth and inter-regional economic differences. The core explanatory variable DL is the logarithm of the loan-to-deposit ratio, with a mean of -0.797, a median of -0.736, a standard deviation of 0.209, and a range of [-1.188, -0.489]. All DL values are negative, indicating that the original loan-to-deposit ratio is below 1. After converting the mean back to its original scale, the original loan-to-deposit ratio is approximately 0.451, reflecting that the local capacity to convert financial resources is generally weak.

Table 1. Descriptive Statistics of Variables

	Min	25%	Med	75%	Max	Mean	SD	Num
GDP	6.814	7.190	7.663	7.847	9.840	7.603	0.578	30
DL	-1.188	-0.930	-0.736	-0.635	-0.489	-0.797	0.209	30
Inv	-0.235	-0.050	0.076	0.154	0.271	0.060	0.144	30
Lab	0.375	0.415	0.437	0.449	0.459	0.428	0.025	30
Edu	19.076	26.905	71.879	89.409	124.137	66.812	36.209	30
Fdi	0.090	5.362	11.661	18.527	53.453	14.898	13.413	30
Gov	0.015	0.139	0.151	0.163	0.198	0.147	0.031	30
Open	0.023	0.166	0.200	0.240	0.305	0.188	0.067	30
Urb	0.481	0.520	0.640	0.692	0.715	0.615	0.086	30

Note: Min, 25%, Med, 75%, Max, Mean, SD, and Num denote the minimum value, the 25th percentile, the median, the 75th percentile, the maximum value, the mean, the standard error, and the number of observations, respectively.

With respect to the control variables, Inv has a mean of 0.060, a standard deviation of 0.144, a minimum of -0.235, and a maximum of 0.271, indicating that the growth rate of fixed asset investment fluctuated considerably, with negative growth in some years. Lab has a mean of 0.428 and a standard deviation of 0.025, indicating that the share of employed population was generally stable, with small regional differences. Edu has a mean of 66.812, a standard deviation of 36.209, a minimum of 19.076, and a maximum of 124.137, reflecting significant differences in human capital potential across regions and years. Fdi has a mean of 14.898, a standard deviation of 13.413, a minimum of 0.090, and a maximum of 53.453, indicating sharp fluctuations in the level of foreign direct investment and marked regional disparities in the ability to utilize foreign capital. Gov has a mean of 0.147 and a standard deviation of 0.031, indicating that the share of fiscal expenditure was relatively stable. Open has a mean of 0.188 and a standard deviation of 0.067, indicating some variation in foreign trade dependence. Urb has a mean of 0.615 and a standard deviation of 0.086, indicating that the urbanization level was relatively high, with moderate regional differences.

In terms of distributional characteristics, the

mean of Fdi exceeds its median, showing a right-skewed distribution and the greatest dispersion. The means of GDP, DL, Inv, Lab, Edu, Gov, Open, and Urb are slightly lower than their medians, exhibiting some degree of left skewness.

3.4 Empirical Results and Analysis

3.4.1 Baseline Regression Results

Table 2. Baseline Regression Results

	(1)	(2)
DL	1.926***	1.202***
	(0.377)	(0.193)
Inv		-0.183
		(0.383)
Lab		-6.156
		(3.829)
Edu		-0.004
		(0.003)
Fdi		0.000
		(0.003)
Gov		-0.114***
		(0.016)
Open		-2.021*
		(0.994)
Urb		3.089**
		(1.406)
constant	9.137***	11.642***
	(0.310)	(1.173)
Num	30	30
Adj-R^2	0.464	0.898

Note: The table above reports the regression coefficients of each variable, with standard errors in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. The same applies below.

3.4.2 Further analysis

Table 2 reports the regression results for the panel data. Model (1) includes only the core explanatory variable DL, whose coefficient is 1.926 and is significant at the 1% level. Model (2) adds control variables such as the investment growth rate and labor force share on this basis. The DL coefficient decreases to 1.202 and remains significant at the 1% level, indicating that part of the effect is absorbed by the control variables, but the sign and significance have not changed fundamentally, and the core

Conclusion is robust. In terms of the magnitude of the regression coefficient, for every 1% increase in the loan-to-deposit ratio, regional GDP increases by approximately 1.20% on average. In other words, the stronger the ability of regional financial institutions to convert deposits into loans, the more they can promote economic growth by easing financing constraints and supporting local investment and production operations. Hypothesis H1 is verified.

For the remaining control variables in Column (2), the coefficient of government fiscal expenditure (Gov) is -0.114 and is significantly negative at the 1% level, indicating that the higher the share of government budget expenditure in GDP, the lower the level of regional economic development. This may reflect that excessive government intervention crowds out market mechanisms, or that the efficiency of fiscal expenditure needs to be improved. The coefficient of the degree of openness (Open) is -2.021 and is significantly negative at the 10% level. This indicates that an increase in foreign trade dependence did not significantly promote the economic growth of the three cities, possibly because export products have low added value, the share of processing trade is high, or fluctuations in external markets bring negative shocks. The coefficient of the urbanization process (Urb) is 3.089 and is significantly positive at the 5% level. This is consistent with the theoretical expectation that labor shifts from the low-efficiency agricultural sector to the high-efficiency urban sector, along with agglomeration effects and improvements in resource allocation efficiency.

Table 3 reports the results of further analysis. In Model (1), the dependent variable is per capita GDP, which is used for a robustness test. The DL coefficient is 0.330 and is significantly positive at the 1% level, indicating that after eliminating the population scale factor, the promoting effect of the loan-to-deposit ratio on the level of economic development remains unchanged. Column (2) examines the intertemporal persistence of the effect of the loan-to-deposit ratio. The dependent variable is replaced with GDP, the level of economic development in the following year, while the core explanatory variable remains the current-year loan-to-deposit ratio DL. The regression results show that the DL coefficient is 1.521 and is significantly positive at the 1% level, indicating that an increase in the current-year loan-to-deposit ratio is not only related to current economic development but also has a significant positive effect on GDP in the following year. The economic promotion effect of the loan-to-deposit ratio exhibits intertemporal persistence.

Taken together, Columns (1) and (2) show that the coefficients of the core explanatory variable DL are all significantly positive at the 5% level, indicating that the baseline conclusion remains robust after replacing the dependent variable and accounting for intertemporal effects.

Table 3. Further Analysis

	(1)	(2)	(3)
DL	0.330***	1.521***	1.946**
	(0.065)	(0.443)	(0.641)
DL*r			-0.016*
			(0.009)
Inv	-0.240*	-1.750*	-0.160
	(0.129)	(0.861)	(0.233)
Lab	-0.258	-0.561	2.294
	(1.294)	(9.196)	(2.900)
Edu	0.004***	-0.007	-0.006
	(0.001)	(0.007)	(0.004)
Fdi	0.003**	0.003	0.001
	(0.001)	(0.008)	(0.003)
Gov	0.010*	-4.935	-3.092
	(0.005)	(3.687)	(3.975)
Open	-0.965***	6.442**	-1.209
	(0.336)	(2.272)	(0.964)
Urb	0.622	-1.319	2.665
	(0.475)	(3.405)	(1.698)
constant	10.427***	9.926***	7.542***
	(0.397)	(2.759)	(1.750)
Num	30	27	15
Adj-R^2	0.890	0.503	0.964

In recent years, China's average loan interest rate has continued to decline. To better examine whether the decline in the average loan interest rate helps enhance the effect of the loan-to-deposit ratio on local economic development, this paper uses the weighted average interest rate on newly issued inclusive loans to small and micro enterprises, denoted by r, as a proxy variable for the credit pricing environment. On the basis of the baseline model, the interaction term between r and the regional loan-to-deposit ratio DL is introduced to construct a moderating effect model. In Column (3), the coefficient of DL is 1.946 and is significant at the 5% level; the coefficient of the interaction term DL × r is -0.016 and is significant at the 10% level. This implies that the higher the interest rate r on inclusive loans to small and micro enterprises, the weaker the positive effect of the loan-to-deposit ratio DL on economic development; the lower the interest rate, the stronger the positive effect of the loan-to-deposit ratio. Hypothesis H2 is verified.

4. Conclusion

4.1 Research Conclusions

Based on panel data comprising the three cities of Chaozhou, Shantou, and Jieyang, this paper examines the impact of the local loan-to-deposit ratio on the level of economic development and further tests the moderating effect of the interest rate on inclusive loans to small and micro enterprises. The main conclusions are as follows: The local loan-to-deposit ratio has a significant positive effect on regional economic development. A higher loan-to-deposit ratio indicates that more local savings are converted into credit extension, which can ease financing constraints on residents and enterprises and support investment and production operations. After replacing the dependent variable (per capita GDP) and accounting for intertemporal effects (using the dependent variable one period ahead), the core conclusion still holds, indicating that the economic promotion effect of the loan-to-deposit ratio exhibits a certain degree of intertemporal persistence. The interest rate on inclusive loans to those which are small and micro enterprises has a negative moderating effect on the economic effect of the loan-to-deposit ratio. This indicates that the higher the loan interest rate, the weaker the positive effect of the loan-to-deposit proportion on economic development; the lower the interest rate, the stronger the positive effect of the loan-to-deposit ratio.

4.2 Policy Recommendations

Based on the above research conclusions, this paper tries to propose the following policy recommend-dations:

First, attention should be paid to the level of the loan-to-deposit ratio (LDR). LDR provides an intuitive gauge of how intensively funds are used; raising the local LDR essentially strengthens the financial market's capacity to convert funds into productive use. Commercial banks act as credit intermediaries in fund utilization, thereby improving the efficiency with which funds are used. This is particularly relevant at present: as financial digitalization and technological adoption spread, information exchange in financial markets has become more efficient and less costly, which can help reduce banks' operating costs and risks to some extent. The interest spread between deposits and loans is a

main source of commercial bank profits, while the structural composition of deposits and loans is a major driver of regional economic growth. In their operations, commercial banks take risk into account and therefore control lending scale and ratios. Local governments can tilt policies toward key supported firms, improve corporate information transparency and guarantee capacity, and promote the efficient and appropriate use of local funds. Particular support should go to high-quality local micro, small and medium-sized enterprises, private firms and advanced manufacturing. Improving credit guarantee systems and risk compensation mechanisms will raise the efficiency of converting local savings into investment.

Second, inclusive loan interest rates for micro and small enterprises should be lowered and the credit pricing environment improved. Besides actively expanding lending volume, governments and commercial banks should pay attention to loan interest rates, especially inclusive rates for micro and small enterprises. Given their small scale, weak risk resilience and low profitability, micro and small enterprises can hardly bear high-cost loan rates. Yet as an important part of the national economy, they face severe financing constraints, which slow and complicate their development. Local governments, commercial banks and policy banks should, in light of market conditions, deepen interest rate reform. On the one hand, the deposit-taking costs of commercial and policy banks should be considered; on the other, these institutions should coordinate and proactively use policy tools such as fiscal interest subsidies, risk compensation and relending to keep inclusive loan rates for micro and small enterprises stable while moving downward. This will alleviate their financing difficulties more effectively and enable credit allocation to translate more efficiently into enterprise investment and economic growth.

Third, the level of high-quality regional development should be enhanced. LDR is only one factor promoting regional development; the economic role of other social indicators should not be ignored. The traditional extensive growth model can hardly sustain social development. As society enters a transitional period, a high-quality talent pool will clearly promote local economic development, especially as local governments propose proactive economic transformation. Opening-up should promote local foreign trade, but the coefficient on openness is negative in this study, possibly because export products in the Chaoshan region have low value added and processing trade accounts for a relatively high share. This is not conducive to long-term sustainable development of the local economy. Government should encourage foreign trade firms to move toward R&D, branding and higher value-added segments, enhancing their resilience to external market fluctuations. Urbanization should continue to be advanced. The primary industry creates relatively low total value; for local economic development, the shares of secondary and tertiary industries need to be appropriately raised. A higher urbanization level can improve resource allocation efficiency and raise overall social productivity. Of course, higher urbanization requires improved urban public services and industrial supporting facilities. This calls for ex ante local fiscal support to promote the citizenization of rural migrants and unleash urbanization's positive effects on economic development.

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