
Determinants of MSMEs Credit Disbursement in Bihar: An Econometric Analysis of Bank-Level Data

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ABSTRACT

This study examines the determinants of credit growth in Micro, Small and Medium Enterprises (MSMEs) in Bihar, highlighting the dominant role of public sector banks alongside the growing contribution of private banks. Using a linear regression framework, the study identifies key drivers of MSME credit disbursement growth. Variables related to credit expansion, such as growth in the credit-deposit ratio and MSME outstanding credit, are found to have a significant positive impact. However, asset quality indicators exhibit mixed effects: while MSME NPAs are positively associated with credit growth, suggesting continued lending despite rising defaults, higher NPAs in the priority sector negatively influence credit expansion, indicating a more cautious approach by banks. The findings provide important policy insights for improving MSME financing in the state.

Introduction:

Micro, Small and Medium Sector is a backbone of the economy considering inclusive development and employment goals. The government of India has recently given emphasis on MSME development and a lot of initiatives have been taken in recent years to uplift this sector. The credit guarantee trusts for



MSMEs have been capitalised and various credit guarantee schemes are running to finance Micro and Small Sectors without any collateral and third party guarantee. The objective behind is the government's priority to expand this sector considering long term development goals. The informality, low capitalisation and lack of credit access to the sector are major challenges of the sector.

Bihar is a developing state and data reveals that 99 percent of MSMEs belong to Micro category. Since employment and inclusive development are priority of the state, the government of Bihar has emphasised on this sector which shows a good result in recent years to expand MSME finance in the state. Considering the challenges of credit to the sector, there is a need to study the bank's characteristics like its MSME outstanding growth, Non- Performing Assets which is affecting bank's credit disbursement to MSMEs sector. Each bank has its own policy to finance different sectors and present study will investigate the factors which affects the growth of credit disbursements of a bank.

The study is based on bank wise data accessed from State Level Bankers' Committee (SLBC) Bihar reports of five years from FY2019 to FY2024 for their various characteristics and these are analyzed to get conclusions. Here, we will analyze the factors which affect the growth of MSME credit disbursement of a bank. Linear Regression Method, t- test methods and other statistical tests are used in the analysis using SPSS software. The reliability and consistency of data has been checked using Cronbach's Alpha. The Figure and tables are used to represent and illustrate the data. The t-test is used to check the significance of variable in the analysis.

The study has been divided in two sections. First section elaborates the characteristics of bank finance to MSME in Bihar and second section elaborates the Econometric analysis of bank wise data for the factors affecting MSME credit disbursement of banks and its policy implications.

I. Characteristics of Bank Finance to MSMEs in Bihar

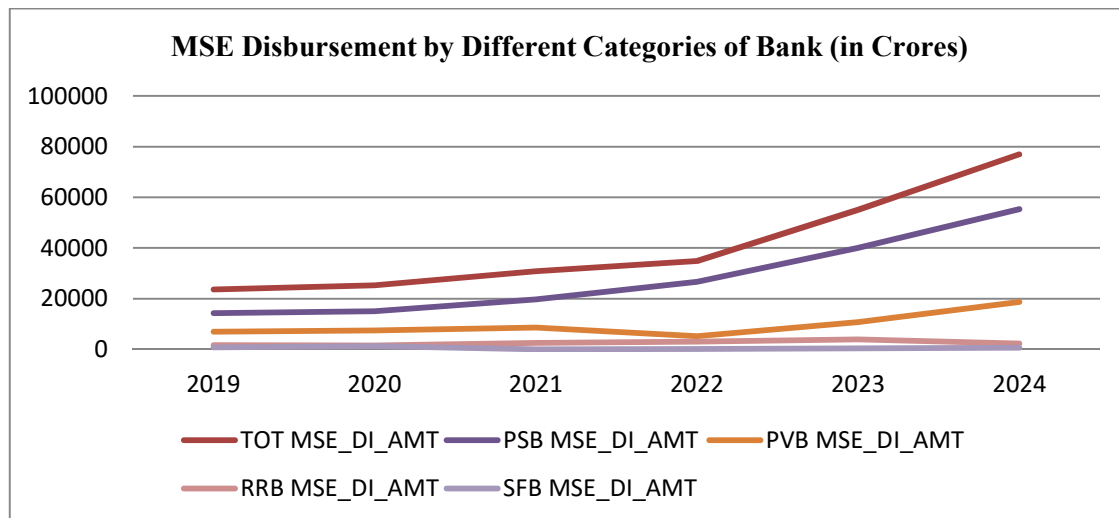
The Micro, Small and Medium Enterprises (MSME) sector is widely recognized as a key driver of inclusive economic growth, employment generation, and regional development in India. In relatively less industrialized states such as Bihar, MSMEs assume even greater importance as engines of structural transformation and livelihood creation. However, access to institutional finance remains one of the most critical constraints faced by them. In recent years, the Government of India has introduced several policy initiatives—such as the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) and Pradhan Mantri Mudra Yojana (PMMY)—to enhance credit flow to MSMEs. Despite these efforts, challenges such as high Non-Performing Assets (NPAs), weak recovery mechanisms, and uneven

participation of financial institutions continue to affect credit delivery. This section examines the characteristics of MSME financing in Bihar and empirically analyzes the determinants of MSME credit disbursement using bank-level data.

The banking structure in Bihar is predominantly characterized by the dominance of Public Sector Banks (PSBs), although Private Sector Banks (PVBs), Regional Rural Banks (RRBs), and Small Finance Banks (SFBs) are also present. Public sector banks play a leading role in MSME financing due to their obligation to meet priority sector lending targets and their wider outreach (Government of India, 2023). Following the COVID-19 pandemic, there has been a noticeable increase in MSME credit disbursement, particularly from FY2022 onwards. This expansion reflects both policy-driven credit support and recovery in economic activities. Private sector banks, which were relatively less active earlier, have also increased their participation in MSME financing in recent years.

(i) Trends in MSME Credit Disbursement

Figure 1: Trends of MSME disbursement amounts (in Cr.) by banks in Bihar



(Source: SLBC Bihar)

The trend analysis indicates a significant increase in MSME credit disbursement across all categories of banks. Public sector banks have consistently dominated MSME lending, while private sector banks have shown accelerated growth in the post-pandemic period. However, RRBs and SFBs continue to contribute only marginally, reflecting institutional and operational constraints. This trend suggests that MSME credit growth in Bihar is largely driven by public sector banks, with private banks emerging as important contributors over time.



(ii) Asset Quality and NPA Dynamics

Asset quality, as measured by NPAs, plays a critical role in determining lending behavior. The analysis shows that NPAs in the agricultural sector are consistently higher than those in MSME and total advances. Public sector banks and RRBs exhibit significantly higher NPAs compared to private sector banks, which maintain relatively low NPA levels due to better credit management practices. Despite the presence of NPAs in the MSME sector, their levels are comparatively lower than those in agriculture, making MSMEs a relatively preferred lending segment within the priority sector. High NPAs in the priority sector create a risk-averse environment for banks, thereby influencing credit allocation decisions.

(iii) MSME Outstanding and Disbursement Behavior

The relationship between MSME outstanding credit and disbursement indicates that banks with higher exposure to MSMEs tend to extend more credit to the sector. This reflects a process of financial deepening and path dependency in lending behavior. Public sector banks exhibit higher levels of both MSME outstanding and disbursement, while private banks show increasing disbursement relative to their exposure. This suggests that private banks are gradually strengthening their engagement in MSME financing.

(iv) Institutional Constraints and Policy Environment

Despite the expansion of MSME credit, several structural challenges persist. Weak recovery mechanisms and a large number of pending legal cases reduce the effectiveness of credit delivery. These issues increase the perceived risk of lending and discourage banks from expanding credit to MSMEs. Additionally, participation in government-supported schemes such as CGTMSE and PMMY is uneven across banks. Public sector banks dominate these schemes, while private banks show relatively limited involvement. This uneven participation affects the overall effectiveness of policy interventions aimed at promoting MSME financing.

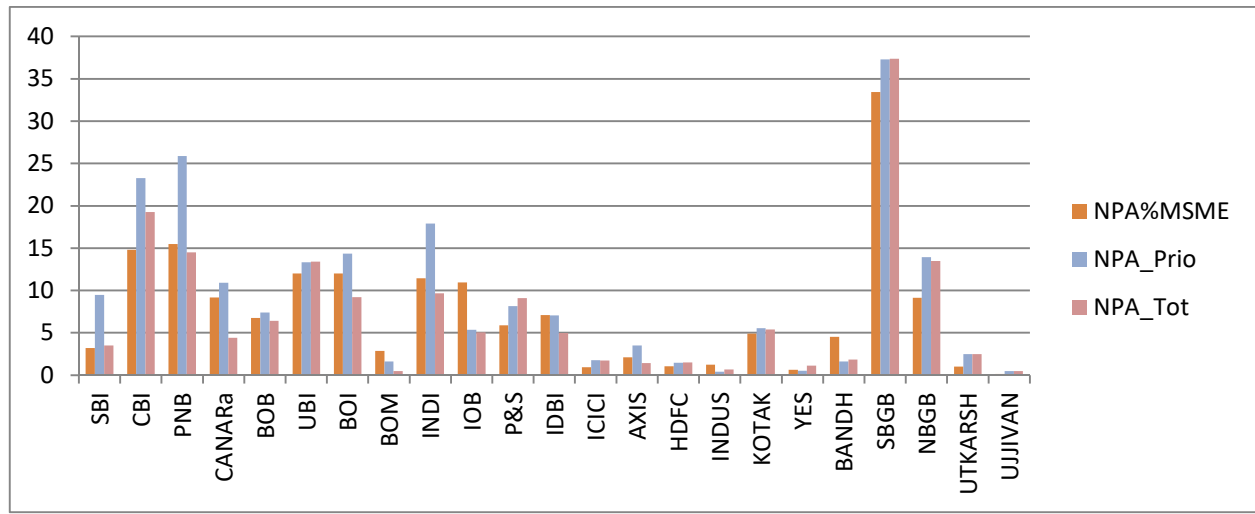
Table 1: Agriculture, MSMEs and Total Advance NPA percent of Banks in Bihar

	Total (%)			PSB (%)			PVB (%)		
	NPA_A	NPA_	NPA_	NPA_A	NPA_	NPA_T	NPA_	NPA_	NPA_T
	GRI	MSME	TOT	GRI	MSME	OT	AGRI	MSME	OT%
2024	18.14	7.76	7.46	26.68	9.44	7.94	2.14	1.74	1.74
2023	21.5	9.87	9.28	34.63	10.91	15.03	2.17	1.74	1.72

2022	28.53	12.99	11.3	36.24	13.58	11.27	3.44	2.62	2.16
2021	23.59	12.84	11.85	32.82	14.42	13.84	1.31	0.91	1.07
2020	25.48	14.12	14.92	37.11	16.99	16.24	1.26	1.19	1.07
2019	19.08	12.85	10.93	21.97	12.6	11.23	1.09	0.8	0.92

(Source: SLBC Bihar)

Figure 2: NPA% of MSME advances, Priority Sector Advances and Total Advances of Bank of Bihar (FY2024).



(Source: SLBC Bihar)

II. Econometric Analysis of Factors affecting MSME Credit Disbursement Growth of a Bank in Bihar

This study examines the determinants of growth in MSME credit disbursement using a multiple regression framework. The analysis is based on the regression model, which incorporates key financial indicators such as MSME NPAs, priority sector NPAs, total credit disbursement growth, and MSME outstanding credit. The data from SLBC Bihar for FY 2019 to FY 2024 for 23 banks, which includes 11 public banks, 8 private banks, 2 Regional Rural Bank and 2 Small Finance Banks have been taken for the analysis. The results reveal that the model has high explanatory power ($R^2 = 0.753$), indicating that the selected variables significantly explain variations in MSME credit disbursement growth. The findings highlight the dual role of credit expansion and asset quality in shaping MSME financing dynamics.

The Micro, Small and Medium Enterprises (MSME) sector plays a critical role in economic development by contributing to employment generation, industrial output, and exports. Access to institutional finance



remains a key determinant of MSME growth. However, credit disbursement is influenced by multiple factors, including banking sector performance, asset quality, and overall credit expansion. This study empirically investigates the determinants of MSME credit disbursement growth using regression analysis, with particular emphasis on the final model that provides the highest explanatory power.

(i) Model Specification and Goodness of Fit

The regression model includes the following variables:

Dependent Variable	Independent Variables
Growth of MSME disbursement	Growth in MSME NPAs (<i>g_npamse</i>)
	Growth in Priority Sector NPAs (<i>g_npaprio</i>)
	Growth in Credit - Deposit Ratio (<i>gcd</i>)
	Growth in MSME Outstanding Credit (<i>g_msmOut</i>)

The model demonstrates a **high coefficient of determination ($R^2 = 0.753$)**, implying that approximately **75.3% of the variation in MSME disbursement growth is explained by the included variables**. The **Adjusted R^2 (0.744)** confirms that the model remains robust after adjusting for the number of predictors. The **F-statistic ($F = 83.020$, $p < 0.001$)** indicates that the model is statistically significant as a whole, confirming that the explanatory variables jointly influence MSME credit disbursement growth. Further, the **Durbin-Watson statistic (2.021)** suggests the absence of autocorrelation, indicating that the model satisfies one of the key assumptions of classical linear regression.

Table3: The Model and the coefficient of variables (B) and its significance

Model Variable	B	Std. Error	t	Signifi.	(VIF)
Constant	-7.203	65.504	-.110	.913	
Growth of NPAs in MSMEs	5.914	.336	17.614	.000	1.524
Growth of NPAS in Priority Sectors	-7.418	.629	-11.795	.000	1.468
Growth in Credit-Deposit Ratio	5.070	1.845	2.747	.007	1.055
Growth in MSME Outstanding	1.750	.667	2.663	.009	1.037

- Dependent Variable: Growth in MSME Credit Disbursements

**(ii) Interpretation of Regression Results:**

The estimated regression equation (conceptually) indicates the relationship between MSME disbursement growth and its determinants.

Growth in MSME NPAs (g_npamse)

The coefficient of MSME NPAs is **positive and highly significant ($\beta = 5.914$, $p < 0.001$)**. This implies that a one-unit increase in MSME NPAs leads to an increase of approximately 5.9 units in MSME disbursement growth, holding other factors constant. This positive relationship may appear counterintuitive, as higher NPAs typically indicate financial stress. However, it can be explained by the possibility that banks continue to expand lending to MSMEs despite rising NPAs due to government-driven financial inclusion policies, priority sector lending mandates and credit push strategies to stimulate economic activity. Thus, the result reflects a **credit expansion behavior even under deteriorating asset quality conditions**.

Growth in Priority Sector NPAs (g_npaprio)

The coefficient of priority sector NPAs is **negative and statistically significant ($\beta = -7.418$, $p < 0.001$)**. This indicates that an increase in NPAs within the priority sector reduces MSME disbursement growth. This finding aligns with economic theory and banking practices. Rising NPAs weaken bank balance sheets and increase risk aversion, leading to stricter lending norms, reduced credit flow and increased screening of borrowers. Hence, **deterioration in priority sector asset quality acts as a constraint on MSME credit expansion**.

Growth in Credit to Deposit Ratio (gcd)

The coefficient of growth in credit to deposit ratio which represents total credit disbursement growth is **positive and significant ($\beta = 5.070$, $p = 0.007$)**. This suggests that overall expansion in credit in the economy contributes positively to MSME disbursement growth. This result indicates that MSME credit growth is closely linked with broader banking sector trends. When banks expand their lending portfolios, MSMEs also benefit from increased credit availability. This reflects a **pro-cyclical relationship between aggregate credit growth and MSME financing**.

Growth in MSME Outstanding Credit (g_msmOut)



The coefficient of MSME outstanding credit is **positive and significant ($\beta = 1.750, p = 0.009$)**. This implies that higher outstanding credit levels lead to further growth in MSME disbursement. This finding suggests a **cumulative or reinforcing effect**, where existing credit exposure builds lending relationships, banks are more willing to extend additional credit to existing borrowers and credit deepening occurs within the MSME sector.

(iii) Diagnostic Tests and Model Validity

The reliability of the regression model is supported by diagnostic tests:

- **Multicollinearity:** Variance Inflation Factor (VIF) values range between **1.037 and 1.524**, indicating no serious multicollinearity among explanatory variables.
- **Residual Analysis:** The residuals are approximately normally distributed with a mean close to zero. Although a few outliers are present, they do not significantly distort the model.
- **Autocorrelation:** The Durbin-Watson value near 2 confirms independence of residuals.

Overall, the model satisfies key assumptions of the **Classical Linear Regression Model (CLRM)**.

(iv) Conclusion and Policy Implications

The analysis based on the final regression model provides important insights into the determinants of MSME credit disbursement growth. The study concludes that:

1. **Credit expansion variables (credit to deposit ratio growth and MSME outstanding credit)** significantly promote MSME disbursement.
2. **Asset quality indicators have mixed effects:** MSME NPAs show a positive association, indicating continued lending despite rising defaults and priority sector NPAs negatively impact credit growth, reflecting cautious banking behavior.

Policy Implications:

1. There is a need to **balance credit expansion with asset quality management**.
2. Strengthening **NPA resolution mechanisms** can improve credit flow to MSMEs.
3. Banks should adopt **risk-based lending strategies** to ensure sustainable MSME financing.



4. Policymakers should focus on **credit monitoring and institutional support systems** to reduce default risks.

Conclusions: The credit to MSME is largely contributed by Public Banks in the state, although the private banks are consistently improving in MSME lending. The Public Banks and RRBs have high Non-Performing Assets which ultimately affect the bank's ability to finance to the MSME sector. The empirical analysis of bank wise data reflects that the credit expansion variables like Credit- Deposit Ratio growth rate and MSME outstanding credit growth have significantly positively affects the MSME disbursement. Asset quality indicators MSME NPAs growth and Priority Sector NPAs growth have mixed effects. While MSME NPAs show a positive association, indicating continued lending despite rising defaults, the priority sector NPAs negatively impact credit growth, reflecting cautious banking behavior. Thus the study is very important for policy implication.

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