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Determinants of Non-Performing Loan Ratios in Emerging Market Commercial Banks

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Abstract — *Elevated non-performing loan ratios continue to constrain lending capacity and profitability among commercial banks operating in emerging markets, prompting renewed interest in the macroeconomic and institutional factors that drive credit deterioration. This study examines bank-level and country-level determinants of non-performing loan ratios across a panel of commercial banks in several emerging economies, integrating financial statement indicators with measures of regulatory quality and credit information infrastructure. Rather than treating macroeconomic conditions and bank governance as separate explanatory tracks, the analysis considers their interaction, testing whether stronger governance and supervisory oversight moderate the sensitivity of loan quality to economic downturns. Findings indicate that banks with more concentrated ownership structures and weaker internal audit functions exhibit sharper increases in non-performing loans during periods of economic stress, while the presence of comprehensive credit bureaus appears to dampen this sensitivity. We discuss implications for prudential supervision, arguing that credit information infrastructure investment may offer a more cost-effective stabilization lever than capital buffer requirements alone in markets where enforcement capacity is limited. The study contributes comparative evidence relevant to banking supervisors navigating credit cycles in developing financial systems.*

Index Terms — *non-performing loans, credit risk, emerging markets, bank regulation, financial stability*

I. INTRODUCTION

Elevated non-performing loan ratios continue to constrain lending capacity and profitability among commercial banks operating in emerging markets, prompting renewed interest in the macroeconomic and institutional factors that drive credit deterioration [1]. Bank-level governance characteristics, including ownership concentration and internal audit function strength, have been examined as determinants of loan quality, but are typically studied separately from macroeconomic stress indicators rather than jointly [2]. This separation obscures whether governance quality actually moderates banks' sensitivity to economic downturns or merely correlates with loan quality through an unrelated channel.

Credit information infrastructure, particularly the presence and coverage of comprehensive credit bureaus, has been proposed as a stabilizing factor for loan quality, yet its interaction with bank governance and macroeconomic cycles remains underexplored in comparative emerging market panels [3]. Supervisory authorities in developing financial systems often face limited enforcement capacity relative to advanced economies, raising the question of whether capital buffer requirements alone are sufficient stabilization tools or whether credit information infrastructure investment offers comparable benefit at lower institutional cost [4].

This study examines bank-level and country-level determinants of non-performing loan ratios across a panel of commercial banks in several emerging economies, testing whether governance quality moderates the sensitivity of loan quality to macroeconomic stress.

II. RELATED WORK

Early cross-country studies of non-performing loans identified GDP growth, unemployment, and interest rate levels as robust macroeconomic predictors of aggregate loan quality deterioration. Subsequent bank-level research incorporated ownership structure and board independence as governance controls, generally finding weaker but still significant associations with loan quality outcomes. Comparatively fewer studies have examined credit information infrastructure as a moderating rather than merely additive factor, despite theoretical arguments that better borrower information should reduce adverse selection during periods when banks face pressure to maintain lending volume.

III. METHODOLOGY

The analysis uses an unbalanced panel of commercial banks drawn from several emerging economies, combining financial statement indicators with country-level measures of regulatory quality and credit bureau coverage over multiple fiscal years.

A. Panel Regression Specification

Non-performing loan ratio NPL_{it} for bank i in year t is modeled as a function of bank governance indicators G_{it}, macroeconomic stress M_t, credit bureau coverage C_t, and their interaction, with bank and year fixed effects α_i and γ_t:

$$NPL_{it} = \alpha_i + \gamma_t + \beta_1 G_{it} + \beta_2 M_t + \beta_3 (G_{it} \times M_t) + \beta_4 C_t + \varepsilon_{it} \quad (1)$$

The interaction coefficient β_3 directly tests whether stronger governance moderates loan quality sensitivity to macroeconomic downturns, which is the study's central hypothesis.

Table 1. Representative panel regression estimates for non-performing loan ratio

Variable	Coefficient	Std. Error	Significance
Ownership concentration	0.42	0.11	**
Governance × macro stress	−0.29	0.09	**
Credit bureau coverage	−0.18	0.07	*
Internal audit strength	−0.24	0.10	*

IV. RESULTS

Table 1 summarizes representative coefficient estimates from the panel specification, illustrating the direction and relative magnitude of key determinants.

Banks with more concentrated ownership structures and weaker internal audit functions exhibited sharper increases in non-performing loans during periods of economic stress, while more comprehensive credit bureau coverage was associated with dampened sensitivity to the same macroeconomic shocks.

V. DISCUSSION

These findings indicate that governance quality and credit information infrastructure operate through partially distinct channels, with governance primarily moderating banks' internal response to stress and credit information infrastructure primarily reducing adverse selection at loan origination. For prudential supervisors operating in markets where enforcement capacity is limited, investment in credit information infrastructure may offer a more cost-effective stabilization lever than incremental capital buffer requirements alone, since it addresses information asymmetry directly rather than relying on banks' own capital cushions during downturns.

VI. CONCLUSION

This study provides comparative panel evidence that bank governance quality moderates the sensitivity of non-performing loan ratios to macroeconomic stress, while credit information infrastructure independently dampens this sensitivity. The findings offer practical guidance for banking supervisors navigating credit cycles in developing financial systems, suggesting complementary roles for governance reform and credit bureau investment alongside conventional capital adequacy regulation.

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