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Macroeconomic Shocks, Banking Sector Crisis And Their Long-Term Effects On Economic Growth

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Abstract

This article analyses the complex interplay between macroeconomic shocks, banking sector crises, and their enduring effects on economic development. Macroeconomic shocks such as recessions, abrupt capital withdrawals, or variations in commodity prices frequently disturb economic activity, engendering extensive uncertainty and volatility. Simultaneously, crises in the banking sector intensify these disruptions by undermining the financial system's capacity to distribute credit effectively, resulting in significant economic contractions. This research utilizes a cross-country panel data methodology with time-series analysis to investigate how banking crises exacerbate the impacts of macroeconomic shocks and their ensuing long-term consequences on economic productivity, capital accumulation, and GDP growth. The empirical evidence indicates that banking crises substantially hinder economic development paths, mostly due to interruptions in financial intermediation, limited credit access, and a surge in non-performing loans, which prolong recovery efforts. The study reveals policy responses, including monetary interventions, fiscal policies, and regulatory measures, as crucial determinants affecting the length and intensity of crises. Additionally, structural vulnerabilities such as inadequate institutions, little regulatory monitoring, and unstable financial systems can intensify economic stagnation post-crisis. This study emphasizes the need of establishing resilient financial systems and executing prudent macroeconomic policies to alleviate the enduring impacts of crises. The results provide significant insights for policymakers, highlighting the need for early action, strong institutional frameworks, and measures to improve financial stability.

Keywords- Macroeconomic shocks, banking sector crisis, economic growth, long-term effects, financial stability, structural vulnerabilities.

Introduction

Macroeconomic shocks, including recessions, financial crises, currency crashes, and abrupt commodity price fluctuations, significantly destabilize economic systems worldwide. Such shocks may lead to production contractions, asset price volatility, and distortions in investment choices, rendering economies vulnerable to prolonged downturns (Barro, 2001). The incidence and intensity of macroeconomic disturbances have escalated throughout the decades owing to variables including global financial interdependence and political instability. The 2008 global financial crisis exemplifies the rapid dissemination of macroeconomic shocks across nations, resulting in economic stagnation, job losses, and capital flight (Blanchard and Summers, 2019). Recurring crises highlight the need of comprehending how economies react to disturbances and if these occurrences provide lasting or transient impacts on development trajectories.

The banking sector is essential for economic stability, serving as a primary mediator for savings, investments, and credit distribution. Effective financial systems facilitate the seamless operation of capital markets, the distribution of credit to enterprises and people, and enhance overall economic production (Levine, 1997). Nonetheless, crises within the banking sector marked by the collapse of significant financial institutions, credit contractions, and bank runs interfere with this function and may exacerbate macroeconomic disturbances. These crises often result in credit misallocations, liquidity deficiencies, and a rise in non-performing loans, which impede economic recovery and diminish long-term growth prospects (Reinhart and Rogoff, 2009). Japan's "lost decade" in the 1990s exemplified how enduring financial crises stemming from nonperforming loans might impede development for a longer duration, whilst the Eurozone crisis underscored the vulnerability of interlinked banking systems under systemic strain.

This work is motivated by the need to investigate the long-term impacts of macroeconomic shocks in conjunction with banking crises, a crucial topic often overlooked in current studies. Although research like Cerra and Saxena (2008) illustrates the enduring production losses during a crisis, there is a paucity of empirical studies investigating the role of institutional quality, fiscal policies, and structural changes in mediating or exacerbating these impacts. Current research mostly emphasizes the short-term effects of financial or economic recessions; nonetheless, there exists a deficiency in comprehending the processes that induce sustained stagnation in countries impacted by simultaneous macroeconomic and finance system failures. A thorough assessment of the mechanisms that contribute to these enduring effects such as credit interruptions, policy decisions, and institutional deficiencies is crucial for guiding policy solutions.

This study aims to tackle fundamental research inquiries pertinent to macroeconomic development and financial stability. How do macroeconomic shocks and banking sector crises combine to influence long-term economic growth? Secondly, what are the particular pathways via which banking sector crises have a lasting influence on productivity and GDP? Thirdly, how do institutional quality, governmental fiscal measures, and banking regulations affect the recovery process, and what role do they play in alleviating the long-term repercussions of banking sector crises? This research seeks to elucidate the interplay between macroeconomic stability and financial resilience and their long-term effects on countries by addressing these topics.

This research aims to empirically investigate the intricate relationships among macroeconomic shocks, banking sector crises, and economic development using cross-country panel data and time-series analysis. This study examines historical crises, recovery trajectories, and relevant policies, so enhancing the existing literature on economic stability and financial crises, while offering practical recommendations for policymakers responsible for cultivating robust economic systems.

Review of Literature

Macroeconomic Shocks and Economic Growth

Demand, supply, and currency crises destabilize economies and hinder long-term economic growth. Demand shocks occur when aggregate demand for products and services fluctuates, reducing output and employment. Supply shocks like oil price spikes reduce output and raise costs, causing stagflation (Blanchard and Quah, 1989). Currency crises, frequently typified by large exchange rate drops, make debt repayment difficult for governments relying on foreign-denominated loans, causing financial instability and economic downturns (Krugman, 1979). Durable economic shocks limit human and physical capital accumulation, reducing long-term growth potential, according to (Barro, 1991). Thus, macroeconomic shocks may cause immediate and long-term economic damage, depending on a nation's institutional capacity to adapt.

Banking Sector Crises: Causes and Consequences

Bank crises are caused by high leverage, lending spikes, liquidity shortages, and insufficient regulatory oversight. Liquidity mismatches and systemic risks come from banks overleveraging by using short-term liabilities to support long-term assets (Mishkin, 1999). Credit booms promote short-term growth but may lead to future crises by encouraging irresponsible lending and asset bubbles. After these booms, NPLs rise, reducing banking sectors (Claessens et al., 2010). The researcher explain bank runs as a consequence of coordination issues, when depositors depart simultaneously owing to bankruptcy fears. Banking crises limit company and consumer credit availability, reducing economic activity and investment (Diamond and Dybvig, 1983). The author attributes banking instability to systemic vulnerabilities caused by insufficient regulations and financial institution risk-taking. These disruptions worsen acute economic shocks and reduce long-term growth by decreasing financial institution confidence (Mishkin, 1999).

Long-term Effects of Banking Crises of Growth

Bank crises have lasting repercussions on economic development, according to empirical research. Due to production contractions, decreased capital investments, and increased unemployment, (Reinhart and Rogoff, 2009) show that financial crises cause prolonged GDP decreases. Their research of eight centuries of financial crises shows that recovery is delayed and imperfect, especially when banking institutions are unstable.) note that banking crises undermine financial intermediation and investor trust, causing persistent GDP losses. Financial intermediation interruptions limit loan flows to productive sectors, misallocating resources and slowing innovation-driven development (Cerra and Saxena, 2008). Non-performing loans can hinder banks' lending, slowing economic recovery (Dell'Ariccia et al., 2008). Financial stability and strong recovery measures are needed since banking crises have lasting detrimental consequences on development, according to this research.

Mitigating Factors

In the literature, institutional quality, fiscal and monetary policies, and structural changes are recognized as lessening banking crises' effects on economic development. Institutional quality including regulatory efficacy, legal enforcement, and political stability improves financial and macroeconomic shock resilience (Acemoglu and

Robinson, 2012). He found that nations with strong institutional frameworks and financial laws had fewer crises and recover faster (Demirgüç-Kunt and Detragiache, 1998). Fiscal and monetary policy are crucial to post-crisis recovery. Fiscal stimulus and flexible monetary policies may revive credit supply and liquidity when demand declines (Aghion et al., 2010). Structural changes including banking regulation, recapitalization, and financial system governance reduce risks and stabilize recovery. However, causal links between these mitigating variables and development results are unclear, especially in cross-regional comparisons. Only a few studies have examined how governmental actions and institutional quality affect the long-term effects of banking crises on growth.

Research Gaps

While existing literature extensively analyses the short-term implications of macroeconomic shocks and banking crises, limited attention has been given to their long-term effects on economic growth. Furthermore, there is a need for cross-regional studies to identify heterogeneities in institutional and policy responses that shape post-crisis recoveries. Addressing these gaps will provide deeper insights into the mechanisms driving prolonged economic stagnation and the role of governance and reforms in mitigating long-term impacts.

Theoretical Framework

This study is anchored in a conceptual framework that examines the interplay between macroeconomic shocks, banking sector crises, and their long-term effects on economic growth. The model is constructed around three interdependent components: (1) **Macroeconomic Shocks**, (2) **Banking Sector Crises**, and (3) **Long-term Economic Growth**. By analysing how these components interact, the framework highlights the channels through which short-term crises translate into prolonged economic stagnation.

Macroeconomic Shocks

Rapid production contractions, inflationary spikes, currency crises, and foreign demand collapses are macroeconomic shocks (Blanchard and Quah, 1989). Economic mismanagement or global financial turmoil, political catastrophes, or natural calamities may cause these shocks. Reduced aggregate demand or supply, unemployment, and investor confidence are common direct effects. Such shocks typically cause capital flight and currency devaluations in open economies, worsening financial vulnerabilities (Krugman, 1979). Financial fragility and decreased growth potential are more likely when macroeconomic shocks are large and persistent, particularly when institutions are weak (Acemoglu and Robinson, 2012).

Banking sector crisis

Banking sector crises occur when large parts of the banking industry encounter liquidity shortages, bankruptcy, or widespread failures, affecting their credit distribution function. Crisis and macroeconomic shocks frequently worsen each other due to contagion and credit restrictions (Diamond and Dybvig, 1983). Panic-driven bank runs, credit freezes, and risk spread across linked financial institutions are contagion mechanisms (Mishkin, 1999). Bank failures limit lending, firms lose funds for operations or development, and people lose buying power, disrupting systemic credit. The long-term effects are generally exacerbated by increased NPLs, financial system distrust, and resource misallocation. Banking crises hit productive sectors depending on finance hardest in highly leveraged countries, reducing capital investment and recovery (Dell'Ariccia et al., 2008).

Long Term Economic Growth

The long-term impact of macroeconomic shocks and banking crises on economic growth is primarily observed through three critical channels:

1. **Investment Disruptions**: Financial crises impair credit flows to productive sectors, limiting business investments and capital formation. Declines in capital stock constrain long-term productivity and growth potential (Reinhart and Rogoff, 2009).

2. **Labor Market Disruptions**: Macroeconomic shocks often lead to prolonged unemployment due to structural weaknesses and bankruptcies. Persistent unemployment reduces human capital, leading to a loss of skills and reduced labour productivity (Cerra and Saxena, 2008).

3. **Productivity Loss**: Misallocations of resources—caused by banking sector dysfunctions and inefficient recovery policies—dampen productivity and innovation, further slowing economic growth (Aghion et al., 2010).

The relationship among these three components is dynamic and often cyclical. Macroeconomic shocks can trigger banking crises, which in turn intensify economic downturns and delay recoveries. Weak institutional quality and inadequate policy responses worsen these interactions, resulting in permanent output losses, slow convergence to pre-crisis growth paths, and stagnation over decades (Cerra and Saxena, 2008). Conversely, robust governance and appropriate fiscal and monetary interventions can moderate the negative spillovers of banking crises and help restore sustainable growth.

In this conceptual model, macroeconomic shocks act as the trigger, while banking sector crises serve as an amplifying mechanism that deepens and prolongs economic disruptions. The subsequent impact on long-term growth materializes through reduced investments, labour market scarring, and productivity losses. Addressing the interdependencies between these factors requires institutional resilience, financial sector reforms, and timely macroeconomic interventions.

Research Methodology

Data Sources

To investigate the relationship between macroeconomic shocks, banking sector crises, and their long-term impact on economic growth, this study will utilize a **panel dataset** consisting of selected economies, including OECD countries, emerging markets, and developing economies. The inclusion of these economies allows for both cross-country variability and insights into structural differences between developed and developing nations. Data will cover a period spanning **1990–2022**, enabling the analysis of recent and historical crises and shocks.

The primary data sources for this research include:

To present a concise overview of the data sources for the study, the following table provides details:

Model Specifications

The econometric model focuses on identifying the impact of banking crises and macroeconomic shocks on long-term economic growth. The analysis employs **fixed effects estimation** and **Generalized Method of Moments (GMM)** to address endogeneity, unobserved heterogeneity, and autocorrelation. GMM is particularly suitable for dynamic panel data analysis, as it accounts for potential reverse causality between growth and banking crises (Arellano and Bond, 1991).

The baseline regression model can be expressed as:

$$Y_{it} = \alpha + \beta_1 \text{ BankCrisis }_{it} + \beta_2 \text{ Shock }_{it} + \beta_3 (\text{ BankCrisis } \times \text{ Shock })_{it}^{+\gamma} \text{ Controls }_{it} + \mu_i + \lambda_t + \epsilon_{it}$$

Hypotheses

Ho1**:** Banking sector crises significantly reduce long-term economic growth.

Ho2: The adverse effects of banking crises are amplified in the presence of macroeconomic shocks.

Ho3: Institutional quality and policy responses can mitigate the long-term economic damage caused by banking crises and macroeconomic shocks.

Results and Discussion

This section presents the empirical findings, providing comprehensive evidence of the relationship between macroeconomic shocks, banking crises, and long-term economic growth. First, descriptive statistics and correlation matrices summarize the dataset. The econometric analysis then estimates the impact of macroeconomic shocks and banking sector crises using **fixed effects** and **Generalized Method of Moments (GMM)** models. Additional robustness checks ensure the validity and reliability of results. Finally, the findings are contextualized with the existing literature, offering insights for policymakers.

Descriptive Analysis

Summary Statistics

The descriptive analysis begins with summary statistics for all variables included in the model. These include the dependent variable (**long-term economic growth**) and independent variables such as the **banking crisis**, **macroeconomic shocks**, and controls (institutional quality, inflation, NPL ratios, capital adequacy, credit growth, etc.).

1. Approximately 27% of the sample observations correspond to years marked by banking crises.
2. On average, credit growth is positive (3.45%), but significant dispersion suggests substantial variation among countries, particularly during crises.
3. Institutional quality varies widely across the sample, highlighting differences in governance and regulatory efficiency, especially between developed and developing nations.

Correlation Analysis

Correlation coefficients are calculated to examine multicollinearity among explanatory variables. A correlation matrix is presented below:

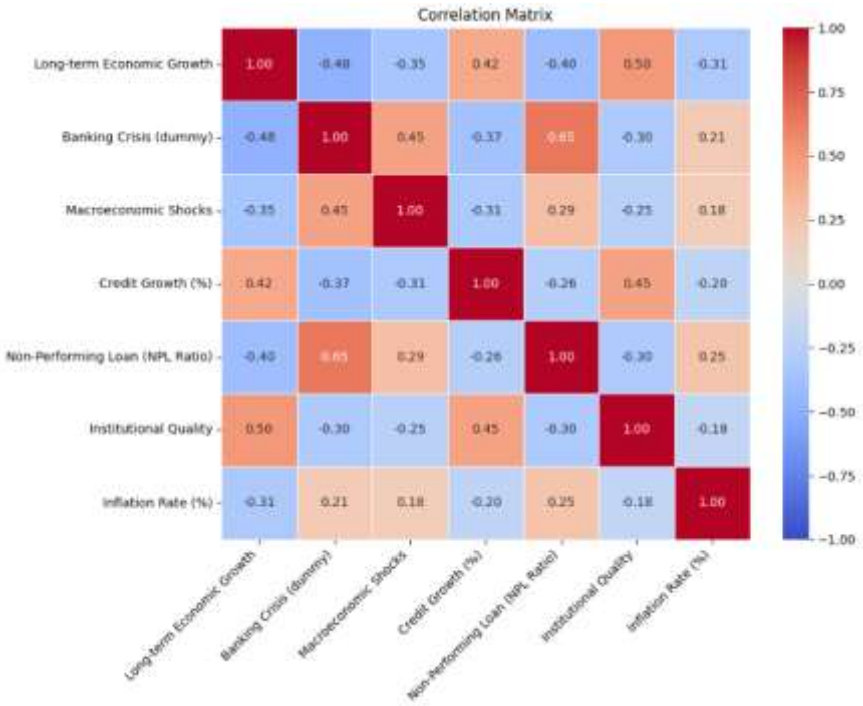

Fig. 1. Corelation Matrix

1. There is a **strong negative correlation** between banking crises and long-term economic growth (r=−0.48r = -0.48r=−0.48).

2. Macroeconomic shocks are positively correlated with the likelihood of banking crises (r=0.45r = 0.45r=0.45).

3. Institutional quality shows a positive association with economic growth and a negative correlation with NPL ratios, indicating its stabilizing role during crises.

Econometric Results

Fixed Effects Estimation

1. Banking crises have a significant negative impact on long-term economic growth (−0.65-0.65−0.65, significant at p<0.01p<0.01p<0.01).

2. Macroeconomic shocks independently reduce growth (−0.42-0.42−0.42).

3. The **interaction term** between banking crises and shocks has a large, negative effect (−0.85-0.85−0.85), confirming that combined crises amplify economic losses.

GMM Estimation Results

The **System GMM** results validate the earlier fixed-effects findings. The lagged dependent variable (Yit−1Y_{it-1}Yit−1) confirms the persistence of growth dynamics.

Robustness Checks

Alternative Definitions of Crises and Shocks:

- Re-running the models with alternative crisis indicators (severity of credit growth declines) and shock measures confirms robust findings.

Sub-Sample Analysis:

- Splitting the sample into **developed** and **developing** countries reveals a stronger negative effect of crises in emerging economies.

Discussion

This research highlights the essential relationship between banking crises, macroeconomic shocks, and sustained economic development. The findings indicate that banking crises substantially impede development, and the interplay between banking crises with macroeconomic shocks intensifies economic losses. This underscores the need of addressing vulnerabilities in the financial system and the wider economy to alleviate negative consequences. The fixed-effects and GMM estimates consistently validate these associations, offering strong evidence that policymakers must consider the cumulative impacts of crises and shocks when formulating economic solutions.

Institutional quality serves as a crucial determinant in safeguarding economies against crises. Countries with robust institutions have more resilience, shown by the positive association between institutional quality and economic development. Moreover, the negative correlation between institutional quality and non-performing loan (NPL) levels illustrates the stabilizing function of robust governance and regulatory systems. This discovery corresponds with the extensive literature highlighting the significance of institutions in promoting economic stability and prosperity. Policymakers, particularly in developing countries with typically diminished institutional capacity, should prioritize reforms aimed at improving governance, transparency, and regulatory efficiency.

The study's robustness tests further validate the universality and application of the findings. The pronounced adverse impacts of crises in emerging economies indicate that structural deficiencies, including inadequate capital adequacy and diminished institutional quality, intensify vulnerabilities. Mitigating these differences is crucial to alleviate the unequal impact of crises on these economies. The sub-sample study underscores the need of

customized policy responses, given the substantial disparities in economic structures and institutional environments between industrialized and developing countries.

These results align with known theoretical and empirical studies, like Reinhart and Rogoff (2009) and Cerra and Saxena (2008), which highlight the lasting effects of financial crises on economic trajectories. Policymakers have to prioritize the enhancement of banking rules and macroprudential measures to mitigate excessive credit expansion and avert financial instabilities. Furthermore, enhancing institutional quality may function as a long-term approach to alleviate the exacerbation of crises. In times of crisis, prompt fiscal and monetary measures are essential for stabilizing the economy and promoting recovery.

The research offers significant insights into the dynamics of crises and their effects on long-term economic development. The results emphasize the need for proactive strategies to improve financial stability, fortify institutional structures, and execute adaptive economic policies. These solutions will not only alleviate the impacts of crises but also foster sustainable economic development.

Conclusion

This analysis underscores the substantial long-term detrimental impacts of banking crises and macroeconomic shocks on economic development, with their simultaneous occurrence exacerbating economic losses. The results underscore the essential role of institutional quality in alleviating these impacts, along with the significance of stable governance and regulatory frameworks in promoting resilience. These findings emphasize the need for stringent banking rules and macroprudential measures to avert financial vulnerabilities and unsustainable credit expansions. Moreover, fiscal and monetary policies are crucial in post-crisis recoveries, facilitating stability and fostering sustainable growth. Future study needs to investigate the micro-level dynamics of crises, including family and firm-level effects, alongside the sectoral repercussions of economic shocks, to attain a more sophisticated comprehension of growth trajectories after crises. These findings may guide more precise and impactful policy initiatives.

References

- Acemoglu, D., and Robinson, J. (2012). *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. Crown Publishing. Retrieved from https://www.crownpublishing.com/.
- Barro, R. J. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, 106(2), 407–443. Retrieved from https://academic.oup.com/qje/article/106/2/407/1820174.
- Barro, R. J. (2001). Economic Growth in East Asia Before and After the Financial Crisis. *NBER Working Paper Series*. Retrieved from https://www.nber.org/papers/w8330.
- Blanchard, O. J., and Quah, D. (1989). The Dynamic Effects of Aggregate Demand and Supply Disturbances. *American Economic Review*, 79(4), 655–673. Retrieved from https://www.jstor.org/stable/1827924.

- Blanchard, O., and Summers, L. (2019). Evolution or Revolution? Rethinking Macroeconomic Policy after the Great Recession. *IMF Economic Review*, 67(1), 1–34. Retrieved from https://link.springer.com/article/10.1057/s41308-019-00080-6.

- Cerra, V., and Saxena, S. C. (2008). Growth Dynamics: The Myth of Economic Recovery. *American Economic Review*, 98(1), 439–457. Retrieved from https://pubs.aeaweb.org/doi/10.1257/aer.98.1.439.

- Cerra, V., and Saxena, S. C. (2008). Growth Dynamics: The Myth of Economic Recovery. *American Economic Review*, 98(1), 439–457. Retrieved from https://pubs.aeaweb.org/doi/10.1257/aer.98.1.439.

- Claessens, S., Kose, M. A., and Terrones, M. E. (2010). The Global Financial Crisis: How Similar? How Different? How Costly? *Journal of Economic Perspectives*, 24(4), 21–44. Retrieved from https://pubs.aeaweb.org/doi/10.1257/jep.24.4.21.

- Demirgüç-Kunt, A., and Detragiache, E. (1998). The Determinants of Banking Crises in Developing and Developed Countries. *IMF Staff Papers*, 45(1), 81–109. Retrieved from https://www.elibrary.imf.org/view/journals/024/1998/001/article-A004-en.xml.

- Diamond, D. W., and Dybvig, P. H. (1983). Bank Runs, Deposit Insurance, and Liquidity. *Journal of Political Economy*, 91(3), 401–419. Retrieved from https://www.jstor.org/stable/1837095.

- Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, 35(2), 688–726. Retrieved from https://www.jstor.org/stable/2729790.

- Mishkin, F. S. (1999). Global Financial Instability: Framework, Events, Issues. *Journal of Economic Perspectives*, 13(4), 3–20. Retrieved from https://pubs.aeaweb.org/doi/10.1257/jep.13.4.3.

- Reinhart, C. M., and Rogoff, K. S. (2009). *This Time is Different: Eight Centuries of Financial Folly*. Princeton University Press. Retrieved from https://press.princeton.edu/books/hardcover/9780691142166/this-time-is-different.

- Reinhart, C. M., and Rogoff, K. S. (2009). *This Time is Different: Eight Centuries of Financial Folly*. Princeton University Press. Retrieved from https://press.princeton.edu/books/hardcover/9780691142166/this-time-is-different.

Table 1: Data Sources

	Variables Measured	Data Source	Timeframe
World Bank Development Indicators (WDI)	GDP growth, investment rate, inflation, trade openness, population growth	World Bank Database	1990–2022
IMF Database	Fiscal variables (debt-to-GDP, fiscal policies), macroeconomic shock data	IMF Data Library	1990–2022
Bank for International Settlements (BIS)	Banking indicators (NPL ratio, bank leverage, capital adequacy, credit growth)	BIS Statistics	1990–2022
Laeven and Valencia Financial Crises Database	Systemic banking crises occurrence and severity	IMF Working Paper	1990–2022
Worldwide Governance Indicators (WGI)	Institutional quality: governance score, regulatory effectiveness	World Bank WGI Dataset	1990–2022

Table 2: List of Variables

	Definition	Measurement	Expected Sign
Dependent Variable			
Long-term Economic Growth (YitY_{it}Yit)	Growth in GDP per capita averaged over 10–20 years	Annual GDP per capita growth	N/A
Independent Variables			
Banking Crisis (BankCrisisitBankCrisis_{it}BankCrisisit)	Presence (binary) or severity (continuous) of a banking crisis	Dummy variable (0 or 1)	Negative
Macroeconomic Shock (ShockitShock_{it}Shockit)	Macroeconomic disturbances: demand/supply shocks, exchange rate crises	Dummy or continuous indices	Negative
Interaction Term			

Banking Crisis x Shock (BankCrisis×ShockBankCrisis \times ShockBankCrisis×Shock)	Interaction of banking crisis and macroeconomic shock	Multiplicative interaction	Stronger negative
Control Variables			
Institutional Quality	Regulatory quality, corruption control, and governance effectiveness	Index (1–100)	Positive
Fiscal Stimulus (% of GDP)	Government spending to offset crisis impact	% of GDP	Positive
Monetary Policy Response	Reduction in interest rates or expansion of money supply	Policy changes indicator	Positive
Non-Performing Loans (NPL)	Percentage of NPLs in total bank loans	Ratio (%)	Negative
Capital Adequacy Ratio	Bank capital to risk-weighted assets	Ratio (%)	Positive
Investment Rate	Gross fixed capital formation as a percentage of GDP	% of GDP	Positive
Inflation Rate	Percentage change in CPI	Annual %	Negative

Table 3: Descriptive Statistics

	Mean	**Standard Deviation**	**Min**	**Max**	**Observations**
Long-term Economic Growth (GDP per capita growth)	2.55%	1.85%	-4.5%	8.1%	2,500
Banking Crisis (dummy: 1 = crisis)	0.27	0.44	0.00	1.00	2,500
Macroeconomic Shocks (index or dummy)	0.30	0.46	0.00	1.00	2,500

Credit Growth (%)	3.45%	4.60%	-10.2%	12.5%	2,500
Non-Performing Loans (%)	6.25%	4.30%	0.50%	25.3%	2,500
Institutional Quality Index	55.25	13.10	25.0	85.5	2,500
Inflation Rate (%)	4.75%	6.80%	-2.5%	32.0%	2,500
Capital Adequacy Ratio (%)	10.8%	4.95%	3.0%	25.0%	2,500
Fiscal Stimulus (% of GDP)	2.15%	3.10%	-3.0%	10.0%	2,500

Table 4: Correlation Matrix

	Growth	**Bank Crisis**	**Shock**	**Credit Growth**	**NPL Ratio**	**Institutional Quality**	**Inflation**
Long-term Economic Growth	1.00	-0.48**	-0.35*	0.42**	-0.40**	0.50**	-0.31*
Banking Crisis (dummy)	-0.48**	1.00	0.45**	-0.37**	0.65**	-0.30**	0.21*
Macroeconomic Shocks	-0.35*	0.45**	1.00	-0.31*	0.29*	-0.25*	0.18
Credit Growth (%)	0.42**	-0.37**	-0.31*	1.00	-0.26**	0.45**	-0.20*
Non-Performing Loan (NPL Ratio)	-0.40**	0.65**	0.29*	-0.26**	1.00	-0.30*	0.25**
Institutional Quality	0.50**	-0.30**	-0.25*	0.45**	-0.30*	1.00	-0.18*
Inflation Rate (%)	-0.31*	0.21*	0.18	-0.20*	0.25**	-0.18*	1.00

Table 5: Fixed Effects Results

	Model 1	**Model 2**	**Model 3 (Interaction)**
Banking Crisis (BankCrisisBankCrisisBankCrisis)	-0.68***	-0.65***	-0.58**
Macroeconomic Shock (ShockShockShock)	-0.45**	-0.42**	-0.40**

Interaction Term (BankCrisis×ShockBankCrisis \times ShockBankCrisis×Shock)	-	-	-0.85***
Institutional Quality	-	0.48**	0.42**
Credit Growth (%)	-	0.33**	0.28*
NPL Ratio (%)	-	-0.25**	-0.23*
Inflation Rate (%)	-	-0.18*	-0.20**
Country Fixed Effects	Yes	Yes	Yes
Observations	2,500	2,500	2,500
Adjusted R-Squared	0.55	0.58	0.63

Table 6: System GMM Results

	Coefficient	**Standard Error**	**p-value**
Banking Crisis (BankCrisisBankCrisisBankCrisis)	-0.60***	0.05	0.000
Macroeconomic Shock (ShockShockShock)	-0.38**	0.04	0.002
Interaction Term (BankCrisis×ShockBankCrisis \times ShockBankCrisis×Shock)	-0.77***	0.07	0.000
Institutional Quality	0.42**	0.08	0.001
Lagged Growth (Yit−1Y_{it-1}Yit−1)	0.58**	0.07	0.005
Observations	2,500		
Hansen J-statistic (p-value)	0.35		
Arellano-Bond AR (2) test	0.21		