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The Role of Institutional Quality and Good Governance in Financial Deepening and the Efficiency of Money Markets in Developing Economies

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ABSTRACT

Using panel data from 26 developing countries over the period 1991–2023, this study investigates the effects of governance indicators on banking system development. The governance indicators examined include Political Stability and Absence of Violence, Control of Corruption, Government Effectiveness, Regulatory Quality, Voice and Accountability, and Rule of Law. Banking system development is measured through the money-to-output ratio, deposit interest rate, real interest rate, and bank capital-to-assets ratio. The results indicate that Political Stability and Absence of Violence is the most influential determinant of banking development in developing countries and plays a key role in increasing financial depth, reducing deposit interest rates, and improving banking efficiency. The Voice and Accountability indicator also has a positive effect on banks' capital-to-assets ratio, whereas other indicators, including Rule of Law, Control of Corruption, Government Effectiveness, and Regulatory Quality, exhibit indirect or limited effects, highlighting the importance of interactions between governance institutions and macroeconomic conditions. These findings emphasize the importance of effective governance and a stable institutional environment in promoting banking system development in developing countries and may provide useful guidance for policymakers in designing effective regulatory frameworks and strengthening political stability.

Keywords: good governance, banking performance, developed countries, panel data, financial depth.

Introduction

Financial development is widely recognized as a fundamental component of economic transformation because an efficient financial system mobilizes savings, allocates capital toward productive activities, facilitates risk sharing, supports investment, and strengthens the transmission of monetary and fiscal policies. In developing economies, however, financial deepening and the efficiency of money markets are not determined solely by the availability of financial resources or the expansion of banking infrastructure. They are also shaped by the institutional environment within which banks, firms, households, regulators, and governments interact. Differences in institutional quality influence the security of property rights, contract enforcement, regulatory credibility, information transparency, policy predictability, and the incentives facing financial intermediaries. Consequently, countries with similar levels of income, demographic structure, or financial resources may display substantially different levels of banking



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development because their institutional architectures create different levels of uncertainty, transaction costs, and risk. The broader literature on institutional effectiveness emphasizes that governance quality is a multidimensional phenomenon encompassing the effectiveness of public institutions, regulatory competence, transparency, accountability, integrity, and the capacity of governments to formulate and implement credible policies. These dimensions increasingly constitute an essential analytical framework for understanding differences in sustainable development and long-term economic performance across countries (1). Evidence from different institutional settings further suggests that good governance can affect the quality and effectiveness of organizations beyond the conventional public-sector domain, demonstrating the wider importance of accountable and well-functioning institutions for organizational performance and resource utilization (2).

The relevance of institutional quality to financial development becomes particularly pronounced in developing countries, where financial systems are frequently bank-centered and where weaknesses in formal institutions may substantially influence the allocation and pricing of financial resources. In such economies, banks often serve as the principal intermediaries between savers and investors, while capital markets remain less developed and alternative financing mechanisms are comparatively limited. Under these circumstances, poor institutional quality can increase information asymmetry, weaken contract enforcement, intensify corruption risks, reduce regulatory credibility, and generate uncertainty concerning government policy. Conversely, an institutional environment characterized by political stability, effective government, regulatory quality, strong rule of law, control of corruption, and accountability can support more predictable financial transactions and improve confidence in financial institutions. Recent research provides evidence that institutional quality, together with innovation and technological progress, can promote financial market development by improving the environment in which financial institutions operate and reducing structural constraints on the functioning of markets (3). The importance of institutional quality is also evident in studies of financial inclusion, where improvements in governance and institutional performance have been associated with stronger long-term access to and use of formal financial services (4). These findings imply that institutional quality should not be treated merely as a background macroeconomic characteristic; rather, it constitutes a structural determinant of the depth, inclusiveness, resilience, and efficiency of financial systems.

The concept of institutional quality is closely related to good governance, although the two are not completely interchangeable. Institutional quality generally refers to the effectiveness, predictability, credibility, and enforcement capacity of formal and informal rules, whereas good governance emphasizes how public authority is exercised through accountability, transparency, participation, regulatory competence, political stability, and control of opportunistic behavior. In empirical research, these concepts are frequently operationalized through composite governance indicators because the quality of institutional systems cannot be captured by a single observable variable. In this regard, the Worldwide Governance Indicators provide a multidimensional representation of governance through measures such as Rule of Law, Regulatory Quality, Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence, and Voice and Accountability. The economic significance of these institutional dimensions extends well beyond banking. For example, institutional quality has been found to interact with human capital in shaping economic growth, demonstrating that productive resources yield stronger outcomes when embedded in effective institutional frameworks (5). Similarly, studies of natural-resource governance show that the quality of institutions can substantially influence the extent to which resource endowments translate into improvements in human development and broader socioeconomic outcomes (6). These findings

reinforce the institutionalist proposition that the effectiveness of economic resources depends critically on the governance mechanisms through which they are managed.

A growing body of empirical evidence also indicates that institutional quality moderates the relationship between macroeconomic vulnerabilities and economic performance. This issue is especially important for developing economies, where external debt, fiscal instability, commodity dependence, inflationary pressures, and exposure to external shocks can place significant stress on both governments and financial systems. Research on external debt demonstrates that the economic consequences of indebtedness vary depending on institutional conditions, with stronger institutions capable of mitigating adverse effects and improving the growth outcomes associated with external financing (7). Evidence from East African countries similarly indicates that the relationship between external debt and economic growth is nonlinear and conditioned by institutional quality, suggesting that the effectiveness of institutions determines whether external financing supports or constrains economic performance (8). The moderating role of institutional quality has also been observed in the relationship between public or external debt and investment in Sub-Saharan Africa, where governance conditions affect the degree to which debt accumulation influences productive investment (9). At the fiscal level, institutional quality has been associated with government fiscal sustainability in both oil-producing and non-oil developing countries, underscoring the relevance of governance mechanisms for maintaining macroeconomic discipline and managing public resources effectively (10). These findings are directly relevant to banking development because sovereign risk, fiscal instability, and macroeconomic uncertainty can influence liquidity conditions, interest rates, bank balance sheets, credit allocation, and the risk perceptions of depositors and investors.

Institutional quality also plays an important role in determining the manner in which uncertainty is transmitted through financial markets. Financial institutions operate by pricing risk and allocating resources under conditions of incomplete information; therefore, changes in governance quality can alter both the level and distribution of uncertainty throughout the economy. Evidence suggests that governance and institutional quality can moderate the effects of financial market uncertainty on macroeconomic performance, indicating that institutional frameworks can either amplify or dampen the transmission of financial shocks (11). Economic policy uncertainty is likewise closely connected to institutional conditions, particularly in economies dependent on natural resource revenues, where changes in policy credibility and institutional effectiveness can affect the stability of investment and financial decisions (12). Research on resource-rich economies further indicates that institutional improvement may face structural resistance when resource rents weaken incentives for accountability, diversification, and institutional reform (13). In mineral-rich economies, the quality of institutions has also been identified as an important factor shaping the relationship between natural resources and economic complexity, suggesting that governance affects the capacity of countries to convert resource wealth into more diversified and sophisticated economic structures (14). For banking systems, these mechanisms are important because concentrated resource revenues, policy volatility, and weak institutional discipline can distort credit allocation, encourage procyclical lending, and weaken incentives for long-term financial intermediation.

The effects of institutional quality are equally visible in the relationship between financial development and structural transformation. Recent evidence indicates that the impact of natural resource revenues on financial development depends on technological progress, financial market risk, and institutional quality, emphasizing that governance conditions influence how resource-based income is transformed into financial capacity (15). At the same time, institutional quality appears to affect the development consequences of digitalization, industrialization,

and financial freedom. Evidence from E-7 countries shows that economic complexity is shaped by the interaction among digitalization, industrialization, financial freedom, and institutional quality, implying that financial systems are embedded within a broader institutional and technological ecosystem (16). The increasing application of artificial intelligence to public administration and economic management has further expanded the potential channels through which institutional quality can influence economic outcomes. For instance, the use of artificial intelligence has been associated with improvements in tax revenues, institutional quality, and economic growth, suggesting that technological adoption may enhance institutional capacity when accompanied by appropriate governance arrangements (17). These developments are particularly relevant to developing economies, where digital financial services, regulatory technologies, and data-driven supervision may strengthen financial intermediation but may also yield limited benefits when underlying governance structures remain weak.

The interaction between institutions and sustainable economic transformation provides another important perspective for understanding the role of governance in financial development. Institutional quality has been identified as a significant determinant of green economic growth in the West African Economic and Monetary Union, suggesting that effective institutions enhance the capacity of financial and economic systems to support structural transformation and sustainable resource allocation (18). Similarly, research on green finance indicates that institutional quality substantially shapes the relationship between green financing and sustainable development, implying that financial instruments achieve stronger developmental outcomes where governance systems provide credibility, transparency, and regulatory support (19). Institutional quality also conditions the contribution of sectoral expansion to aggregate economic performance. Evidence on tourism and economic growth demonstrates that institutional quality influences the strength and sustainability of growth effects generated by expanding economic sectors (20). These findings are relevant to banking systems because banks play a central role in directing credit toward different sectors, and the quality of institutional arrangements influences whether financial resources are allocated to productive, sustainable, and comparatively efficient uses. Thus, governance may affect financial deepening not only through the quantity of financial intermediation but also through the quality of capital allocation.

Another important dimension concerns the relationship between institutional quality, foreign investment, corporate behavior, and information environments. Institutional quality is among the factors that can shape foreign direct investment by affecting investor confidence, policy predictability, property-rights protection, regulatory consistency, and the perceived risks associated with long-term investment decisions (21). Since foreign direct investment can increase demand for financial services and facilitate knowledge and capital transfers, stronger institutions may indirectly contribute to banking development by attracting more stable forms of external capital. At the microeconomic level, institutional investors and corporate governance mechanisms also influence firms' financial policies. Research examining earnings quality and institutional investor performance indicates that institutional monitoring may affect corporate cash-holding behavior, reflecting the broader role of governance structures in shaping firms' financial decisions (22). Similarly, high-quality corporate reporting strengthens the information environment and can enhance the monitoring function of institutional blockholders, thereby reducing information asymmetry and improving market transparency (23). These mechanisms are highly relevant to financial intermediaries because better information quality reduces adverse selection and moral hazard, improves credit assessment, and strengthens the capacity of banks to allocate resources efficiently.

The effectiveness of institutions may also exhibit nonlinear or threshold effects, indicating that incremental improvements in governance do not necessarily produce identical economic outcomes across all levels of

institutional development. Research on market-oriented institutional quality and economic growth suggests that the growth effects of institutions may depend on threshold conditions, including government integrity and the broader quality of the market environment (24). This observation is particularly important when analyzing developing countries because their institutional structures vary substantially, even when they are grouped within a common income or development category. Some countries may possess relatively strong regulatory institutions but weak political accountability, while others may have improving government effectiveness but persistent corruption or weak enforcement of legal rules. Consequently, the impact of governance on financial development is likely to differ across dimensions and may operate through multiple direct and indirect channels. Such heterogeneity provides a strong rationale for examining individual governance indicators rather than relying solely on an aggregate institutional-quality index. It also supports the use of panel-data methods capable of controlling for unobserved country-specific heterogeneity and capturing variation over time.

Moreover, the effects of governance on banking development should be interpreted within the broader relationship between institutional quality, fiscal capacity, economic complexity, and macroeconomic resilience. Institutional systems influence the ability of governments to mobilize revenues, manage public expenditure, design effective regulations, implement development strategies, and respond to economic shocks. Improvements in government capacity and accountability can strengthen market confidence, whereas institutional deterioration may increase uncertainty and weaken the credibility of economic policy. The importance of such mechanisms is evident in studies showing that institutional quality affects the extent to which countries benefit from financial freedom, technological change, resource revenues, external financing, and structural transformation (7, 15, 16). Furthermore, the role of institutional quality in financial inclusion indicates that governance influences not only the aggregate scale of the financial sector but also the accessibility and distribution of financial services across society (4). In developing economies, where informal financial activity may remain extensive and confidence in formal banking institutions may be fragile, these channels are particularly significant. Political instability, corruption, regulatory inconsistency, and weak enforcement can discourage deposits, increase precautionary liquidity holdings outside the banking system, raise bank funding costs, and weaken long-term financial contracting.

Although the literature therefore provides substantial evidence that institutional quality affects economic growth, public debt sustainability, investment, financial inclusion, financial market development, natural-resource management, and sustainable development, fewer studies simultaneously examine the effects of several governance dimensions on multiple indicators of banking system performance within a unified empirical framework. This gap is particularly relevant because financial development is multidimensional. An increase in broad money relative to GDP may indicate deeper financial intermediation, but it does not necessarily imply more efficient pricing or stronger bank capitalization. Similarly, lower deposit interest rates may reflect lower risk and more efficient intermediation, but may also emerge from monetary conditions unrelated to institutional improvements. Real interest rates capture another dimension of the pricing of financial resources, while banks' capital-to-assets ratios provide information on balance-sheet resilience, capitalization, and risk management. Therefore, evaluating governance exclusively through one financial indicator can provide an incomplete picture of its role in banking development. Existing evidence that governance affects financial markets (3), financial inclusion (4), macro-financial uncertainty (11), fiscal sustainability (10), investment (9), and broader institutional and sustainable development outcomes (1, 18) supports the need for a more integrated examination of the banking sector.

This need is reinforced by the structural characteristics of developing countries. Their banking systems are frequently exposed to political shocks, inflationary episodes, exchange-rate instability, high unemployment, fiscal imbalances, weak enforcement mechanisms, and varying levels of government intervention. These conditions imply that governance indicators may not operate independently of the macroeconomic environment. Political stability may affect banking performance through confidence and risk expectations; government effectiveness may influence regulatory implementation and crisis management; regulatory quality may alter entry conditions, prudential supervision, and competition; control of corruption may affect the allocation of credit and the prevalence of connected lending; rule of law may shape contract enforcement and creditor protection; and voice and accountability may influence transparency, oversight, and public confidence. Theoretical expectations are therefore not always unidirectional. For example, improvements in political stability could increase financial depth by strengthening confidence, while at the same time encouraging banks to operate with lower capital buffers as perceived systemic risks decline. Similarly, stronger rule of law may reduce credit risk but could also alter interest-rate behavior through its effects on competition and financial contracting. These potentially heterogeneous effects require an empirical design that evaluates each governance dimension across different indicators of banking performance while controlling for relevant macroeconomic variables.

The importance of institutional context is also supported by research focusing on the determinants and consequences of institutional quality itself. Studies show that institutional structures influence growth through human capital and governance interactions (5), affect the management of natural resources and human development (6), shape fiscal and debt outcomes (8, 10), and determine whether resource-rich economies can successfully improve their institutional frameworks (13). In addition, research on corporate information quality and institutional monitoring demonstrates that institutional effectiveness operates at both macroeconomic and organizational levels (22, 23). Collectively, this evidence suggests that banking development should be analyzed as an institutional as well as a financial phenomenon. Banks are not merely passive intermediaries responding to monetary variables; they are organizations embedded in legal, political, regulatory, and informational structures that influence their incentives, risk tolerance, pricing behavior, capitalization, and allocation of resources.

Accordingly, a comprehensive assessment of the relationship between governance and banking development in developing countries can contribute to both the institutional economics and financial development literatures. By simultaneously considering Political Stability and Absence of Violence, Control of Corruption, Government Effectiveness, Regulatory Quality, Rule of Law, and Voice and Accountability, it becomes possible to identify whether specific institutional dimensions have distinct implications for financial depth, interest-rate formation, and bank capitalization. Such analysis is also relevant for policymakers because institutional reforms typically require substantial administrative and political resources, and their financial effects may differ according to the dimension of governance being improved. Better understanding these relationships can therefore support the formulation of more targeted policies aimed at strengthening financial stability, improving money-market efficiency, reducing institutional uncertainty, and promoting sustainable financial deepening in developing economies. The importance of this policy orientation is further reinforced by evidence that institutional quality affects foreign investment (21), economic complexity (14), technology-driven growth and institutional capacity (17), and the effectiveness of green and sustainable finance (19), indicating that banking-sector reform cannot be separated from the broader institutional architecture of economic development.

Therefore, the aim of this study is to examine the effects of the six dimensions of governance quality—Rule of Law, Control of Corruption, Government Effectiveness, Regulatory Quality, Political Stability and Absence of Violence, and Voice and Accountability—on financial depth, deposit interest rates, real interest rates, and banks' capital-to-assets ratios in 26 developing countries over the period 1991–2023.

Methods and Materials

This study adopts a descriptive–analytical approach with an applied orientation and employs econometric techniques to examine and explain the causal relationships between governance indicators and banking system development in developing countries. Given the structure of the dataset, which contains both cross-sectional dimensions (26 developing countries) and temporal dimensions (1991–2023), the panel data method is employed. Compared with purely time-series or cross-sectional methods, this approach offers greater efficiency because it increases the degrees of freedom, reduces the problem of multicollinearity among variables, and enables the control of country-specific heterogeneity. The statistical population comprises 26 developing countries, including Afghanistan, Pakistan, Egypt, India, Iran, Iraq, Indonesia, Türkiye, Malaysia, Nigeria, Mexico, the Philippines, Thailand, and several other countries. These countries were selected on the basis of their intermediate levels of economic development and the availability of World Bank Worldwide Governance Indicators (WGI) data over the period under investigation. Data for the independent variables were extracted from the World Bank database, while data for the dependent variables were obtained from International Financial Statistics and official sources of the respective countries' central banks.

In this study, banking system performance is modeled as the dependent variable through four separate indicators in order to capture different dimensions of financial development in developing countries. These indicators include the ratio of broad money to gross domestic product $(M2/GDP)$as a measure of financial depth, the deposit interest rate and real interest rate as measures of price efficiency, and the bank capital-to-total-assets ratio as an indicator of the stability and soundness of the banking system. The principal independent variables consist of the six good-governance indicators, namely Rule of Law, Control of Corruption, Regulatory Quality, Government Effectiveness, Political Stability, and Voice and Accountability. In addition, to control for the effects of the macroeconomic environment, the inflation rate and gross domestic product growth rate $(GDP\ Growth)$are included as control variables in all models. To empirically investigate the effects of governance on banking system performance in developing countries, a panel data approach is employed. The mathematical specification of the general research model, based on studies related to developing countries and taking into account their institutional and economic characteristics, is defined in Equation (1).

(1)

In this equation, y_{it}represents the dependent variable (banking performance) for country $i$at time t; the vector of principal independent variables consists of the six governance indicators; the vector of control variables includes inflation and economic growth; the country-specific fixed effects represent individual country effects; and the disturbance term represents the model error component. Given the four dimensions of banking performance examined in this study, four regression models are specified as follows:

(2)

(3)

(3)

In the above equations, WGIdenotes the Worldwide Governance Indicators, including:

(4)

Prior to estimating the coefficients, a panel unit root test is conducted to avoid spurious regression, under the null hypothesis that a unit root exists, indicating non-stationarity. The Levin, Lin, and Chu (LLC) test is formulated as follows:

(5)

In the next stage, the F-Limer test is employed to choose between the pooled model and the panel model. The test statistic is calculated on the basis of the sum of squared residuals from the restricted and unrestricted models.

(6)

After confirming the appropriateness of the panel approach, the Hausman test is applied to select between the fixed-effects and random-effects models using the difference between the variance–covariance matrices of the estimators obtained from the two models.

(7)

Finally, given the possibility of heteroskedasticity and cross-sectional autocorrelation in the data for developed countries, the generalized least squares method is employed. The objective function of this method is to minimize the weighted sum of squared errors.

(7)

The model estimation process in this study is conducted in three principal stages. In the first stage, panel unit root tests, such as the Levin, Lin, and Chu test, are applied to all variables in order to assess stationarity and prevent spurious regression. In the second stage, the F-Limer (Chow) test is employed to choose between the pooled data method and the panel data method. If the null hypothesis that the intercepts are identical is rejected, the use of the panel data method becomes necessary. After confirming the use of panel data, the Hausman test is conducted to choose between the fixed-effects and random-effects models. By examining whether the error components are correlated with the explanatory variables, this test determines the appropriate model. Given the institutional and economic characteristics of developing countries and the structural differences among them, the fixed-effects model is expected to provide more accurate and reliable results because it accounts for country-specific characteristics.

In the final stage, after selecting the optimal model, diagnostic tests relating to the classical regression assumptions are conducted, including tests for autocorrelation, such as the Durbin–Watson or Wooldridge test, and tests for heteroskedasticity. Because heteroskedasticity and cross-sectional autocorrelation are likely to occur in panel datasets consisting of groups of countries, Estimated Generalized Least Squares (EGLS) or robust standard errors are employed to address these problems. This approach ensures that the estimated coefficients of the governance indicators are unbiased and have minimum variance. In addition, to assess the sensitivity of the results,

the models are estimated separately for each of the six governance indicators so that the contribution of each institutional dimension to changes in banking performance can be examined precisely.

Accordingly, by combining the theoretical foundations of institutionalism with advanced panel econometric techniques, the methodology of this study provides a framework for identifying the subtle and long-term effects of governance on the financial structure of developed countries. Focusing on the 33-year period from 1991 to 2023 makes it possible to analyze structural changes in institutional quality and the banking system's response to governance shocks across different economic cycles. This methodological rigor not only enhances the validity of the statistical findings but also provides a solid foundation for presenting policy recommendations in the final sections of the article.

The data used in this study are secondary data structured as panel data and cover the period from 1991 to 2023. The geographical scope of the study comprises a group of developing countries at different stages of economic growth and with institutional conditions that differ from those of developed countries. Accordingly, the study sample consists of 26 developing countries: Afghanistan, Bangladesh, Pakistan, Egypt, India, Iran, Iraq, Indonesia, Türkiye, Ukraine, Malaysia, Nigeria, Mexico, the Philippines, Thailand, Uganda, Uruguay, Uzbekistan, Zimbabwe, South Africa, Kenya, Venezuela, Argentina, Belarus, Oman, and Albania. These countries were selected on the basis of the availability of World Bank Worldwide Governance Indicators (WGI) data and their economic significance for examining the effects of institutional variables on banking system development, thereby enabling a detailed analysis of the role of governance across environments characterized by varying degrees of institutional and economic stability.

The research variables are classified into three main categories. The dependent variables include the ratio of broad money to gross domestic product $(M2/GDP)$as an indicator of financial depth, the equity-to-total-assets ratio $(Eq/Asset)$as an indicator of banking stability and soundness, and the real interest rate $(RealInterest)$as a measure of price efficiency. All of these variables were obtained from the World Bank's World Development Indicators (WDI) database and International Financial Statistics (IFS).

The principal independent variables consist of the six Worldwide Governance Indicators (WGI) provided by the World Bank: Rule of Law (RL), Regulatory Quality (RQ), Control of Corruption (CC), Government Effectiveness (GE), Political Stability and Absence of Violence (PV), and Voice and Accountability (VA). These indicators, which are reported on a scale ranging from $-2.5$to $+2.5$, reflect the qualitative condition of governance institutions. To control for the effects of other economic factors on banking performance, the gross domestic product growth rate (GDPG) and the inflation rate based on the Consumer Price Index (INF) are also included as control variables. Data for these variables were likewise collected from official World Bank and International Monetary Fund sources.

During the period under study, the six Worldwide Governance Indicators (WGI) in developing countries generally fluctuated at levels below the average observed in developed countries, indicating a substantial institutional gap. Among these indicators, Political Stability and Absence of Violence and Voice and Accountability exhibited the lowest values because of domestic and regional political and economic challenges. Likewise, Rule of Law and Control of Corruption displayed dispersed and unstable trends in many of these countries due to weak bureaucratic structures, institutional constraints, and unstable fiscal policies. These deficiencies in institutional indicators have directly affected banking system performance. Unlike developed countries, where good governance reduces banking risks, weak governance in developing countries has contributed to higher credit risks, financial stability problems, and lower depositor confidence.

From the perspective of economic data and banking performance, economic variables in these countries exhibit substantial volatility, which influences the estimation of regression models. Inflation (INF)has been high in many developing countries and, in some years, has caused the real interest rate $(Real\ Interest)$to become negative, meaning that inflation exceeded nominal bank interest rates. This indicates price inefficiency in the money market. The ratio of broad money to gross domestic product $(M2/GDP)$often reflects excessive liquidity growth and expansionary monetary policies rather than the true financial depth of the banking system. With regard to stability, banks' capital-to-assets ratios in these countries are low due to institutional constraints and budgetary problems and often remain below international standards. This situation contrasts sharply with the banking systems of developed countries and highlights the importance of institutional reform and stronger governance in enhancing banking efficiency, stability, and public confidence.

Findings and Results

The results reported in Table 1 indicate that governance indicators play an important role in the development of banking systems in developing countries. To ensure the robustness of the findings and examine the effects of possible relationships among the variables, four estimation models were implemented: a fixed-effects model without macroeconomic control variables, a fixed-effects model including macroeconomic variables, a cross-sectional random-effects model, and a period random-effects model. These specifications were estimated to provide a comprehensive analysis of the short- and long-term effects of governance indicators on the money-to-GDP ratio. The dependent variable is the ratio of money to gross domestic product, which serves as an indicator of financial depth and of the banking system's capacity to mobilize and allocate economic resources.

Political Stability and Absence of Violence has a positive and statistically significant effect in all models, indicating that countries with greater political stability provide a safer and more predictable environment for banking activities. This enhances depositors' and investors' confidence in the banking system and consequently increases financial depth. Control of Corruption has a negative effect in some models, whereas its effect becomes smaller and less statistically significant after the inclusion of macroeconomic variables. This suggests that institutional corruption may constrain banking system growth, although macroeconomic conditions may moderate its effect.

Rule of Law has a relatively weak and statistically insignificant effect in most models, although a negative and significant effect is observed in the period random-effects model. This finding suggests that laws alone cannot guarantee banking development and that effective implementation and appropriate institutional mechanisms are also important. Government Effectiveness and Regulatory Quality have positive but generally statistically insignificant effects. Therefore, the mere existence of an efficient government or appropriate regulations, in the absence of political stability and lower corruption, may not be sufficient. Voice and Accountability is statistically significant only in the cross-sectional random-effects model, which may reflect banks' sensitivity to social and regulatory accountability.

Macroeconomic variables also exhibit substantial effects. GDP growth has a negative and statistically significant effect in models including macroeconomic variables; inflation has a negative and statistically significant effect; and the unemployment rate has a positive and statistically significant effect. These findings indicate that macroeconomic conditions play an important role in banking system development in developing countries and may moderate the effects of institutional indicators.

Table 1. Estimation of the Effects of Governance Indicators on Banking System Development in Developing Countries (Dependent Variable: Money-to-GDP Ratio)

Variable	Fixed Effects Without Macroeconomic Variables	Fixed Effects With Macroeconomic Variables	Cross-Section Random Effects	Period Random Effects
GDP Growth (GDP_G)	–	-0.668500*** (0.1751)	-0.259971** (0.1485)	-0.208821* (0.1447)
Inflation (INF)	–	-0.001913** (0.0010)	-0.000288* (0.0002)	-0.000298** (0.0002)
Population Growth (POP)	–	-0.002919 (0.0037)	-0.001597 (0.0029)	-0.002263 (0.0030)
Unemployment Rate (U_G)	–	0.019327* (0.0133)	0.046238*** (0.0232)	0.035719** (0.0211)
Control of Corruption (CC_G)	-0.000354** (0.0002)	-0.000221 (0.0002)	0.000113 (0.0005)	-0.000063 (0.0006)
Government Effectiveness (GE_G)	0.003449 (0.0026)	0.001541 (0.0025)	0.002791 (0.0034)	0.000965 (0.0037)
Political Stability and Absence of Violence (PS_G)	0.000770*** (0.0003)	0.001021*** (0.0004)	0.001458*** (0.0002)	0.001110*** (0.0002)
Rule of Law (RL_G)	-0.000136 (0.0002)	-0.000097 (0.0002)	-0.000059 (0.0001)	-0.000132* (0.0001)
Regulatory Quality (RQ_G)	0.000242 (0.0019)	0.000733 (0.0009)	0.001435 (0.0019)	0.000938 (0.0017)
Voice and Accountability (VA_G)	-0.000055 (0.0001)	-0.000067 (0.0001)	-0.000102** (0.0001)	-0.000060 (0.0001)
Constant (C)	0.014743*** (0.0002)	0.067340*** (0.0121)	0.031789*** (0.0051)	0.030581*** (0.0055)
Number of Observations	467	450	450	450
R^2	0.0511	0.1866	0.0259	0.0197

Table 2 examines the effects of governance indicators on bank deposit interest rates in developing countries over the period 2003–2023. The results of the four models indicate that Political Stability and Absence of Violence is consistently statistically significant and has a negative effect in all models, implying that greater political stability reduces deposit interest rates. This finding indicates that banks operating in politically stable countries face lower levels of risk and that confidence in the banking system is higher; consequently, banks are able to offer lower interest rates to attract deposits.

Other governance indicators, such as Rule of Law, Control of Corruption, Regulatory Quality, and Voice and Accountability, are statistically insignificant in most models, although their estimated coefficients are negative in some cases. This suggests that the direct effects of these indicators on deposit interest rates in developing countries are limited and are likely influenced by other institutional and economic factors, particularly political stability and government effectiveness.

In addition, Government Effectiveness exhibits a significant negative effect in the period random-effects model and in the model including macroeconomic variables, indicating that effective governments may reduce deposit interest rates through appropriate policies. Overall, Political Stability and Government Effectiveness are the most important institutional determinants of deposit interest rates in developing countries, whereas the other indicators exert indirect or moderating effects.

Table 2. Estimation of the Effects of Governance Indicators on Banking System Development in Developing Countries (Dependent Variable: Bank Deposit Interest Rate)

Variable	Fixed Effects Without Macroeconomic Variables	Fixed Effects With Macroeconomic Variables	Cross-Section Random Effects	Period Random Effects
GDP Growth (GDP_G)	–	-13.7463 (8.6597)	-7.4640 (7.1004)	0.1591 (10.7946)
Inflation (INF)	–	0.0316 (0.0300)	0.0374 (0.0414)	0.0624 (0.0543)
Population Growth (POP)	–	0.2304 (0.2075)	-0.0064 (0.1668)	-0.2098 (0.1570)
Unemployment Rate (U_G)	–	0.2339 (0.9788)	-0.4165 (1.2326)	0.2688 (2.1000)
Control of Corruption (CC_G)	-0.0635 (0.0375)	-0.0292 (0.0239)	-0.0013 (0.0287)	0.0278 (0.0457)
Government Effectiveness (GE_G)	-0.3958 (0.2390)	-0.3505* (0.1938)	-0.2830 (0.2642)	-0.9093* (0.4407)
Political Stability and Absence of Violence (PS_G)	-0.1284*** (0.0311)	-0.1192*** (0.0313)	-0.1318*** (0.0383)	-0.2073*** (0.0276)
Rule of Law (RL_G)	-0.0397 (0.0293)	-0.0057 (0.0038)	-0.0059 (0.0037)	0.0022 (0.0095)
Regulatory Quality (RQ_G)	0.0670 (0.1373)	0.0540 (0.0751)	0.0108 (0.1072)	0.0867 (0.2069)
Voice and Accountability (VA_G)	0.0018 (0.0150)	-0.0055 (0.0076)	-0.0005 (0.0083)	-0.0159 (0.0205)
Constant (C)	9.8727*** (0.5644)	7.9404*** (0.4586)	8.2462*** (0.8476)	7.5612*** (0.6947)
Number of Observations	447	424	424	424
R^2	0.458	0.648	0.092	0.153

The results presented in Table 3 indicate that governance indicators play a substantial role in determining the real interest rate on bank deposits in developing countries. Across the different models, Rule of Law $(RL_G)$and Voice and Accountability (VA_G)have statistically significant positive effects on the real interest rate. This means that improvements in governance quality and greater protection of stakeholders' rights may be associated with higher real interest rates within the banking systems of these countries. These findings suggest that banks in countries with stronger rule of law and greater institutional transparency tend to offer higher real interest rates because a secure and predictable institutional environment reduces credit risk and enhances confidence in the banking system. By contrast, other indicators such as Political Stability and Absence of Violence (PS_G)have negative effects on the real interest rate in some models, although these effects are statistically insignificant. This may indicate that, although political stability is important, its effect on the price of money is less direct and less pronounced than that of the rule of law.

The analysis also demonstrates that macroeconomic components such as inflation (INF)play a statistically significant role. Inflation has a negative effect on the real interest rate, which is consistent with economic theory: higher expected inflation reduces the real rate of interest. Given the importance of the rule of law and institutional transparency, deeper banking system development in developing countries appears to require institutional reforms that guarantee property rights, reduce corruption, and strengthen the accountability of banks and governments.

Table 3. Estimation of the Effects of Governance Indicators on Banking System Development in Developing Countries (Dependent Variable: Real Interest Rate)

Variable	Fixed Effects Without Macroeconomic Variables	Fixed Effects With Macroeconomic Variables	Cross-Section Random Effects	Period Random Effects
GDP Growth (GDP_G)	–	17.8908 (14.0490)	-3.8826 (10.7773)	6.5284 (11.0299)
Inflation (INF)	–	-0.1663*** (0.0310)	-0.1901*** (0.0327)	-0.1994*** (0.0348)
Population Growth (POP)	–	0.0645 (0.4444)	0.7064** (0.4251)	0.7244*** (0.3610)
Unemployment Rate (U_G)	–	-0.4188 (1.7280)	2.9221 (2.2027)	3.1928 (2.3739)
Control of Corruption (CC_G)	-0.0665** (0.0397)	-0.0403 (0.0522)	-0.0091 (0.0174)	0.0177 (0.0241)
Government Effectiveness (GE_G)	-0.2637 (0.4585)	-0.3515 (0.4420)	-0.3277 (0.4448)	-0.3154 (0.4463)
Political Stability and Absence of Violence (PS_G)	-0.0037 (0.0160)	-0.0182 (0.0145)	-0.0052 (0.0119)	-0.0050 (0.0139)
Rule of Law (RL_G)	0.0251*** (0.0079)	0.0241*** (0.0069)	0.0124*** (0.0035)	0.0072*** (0.0033)
Regulatory Quality (RQ_G)	0.0932 (0.1563)	0.0816 (0.1364)	0.2044 (0.1536)	0.1859 (0.1614)
Voice and Accountability (VA_G)	0.0339*** (0.0101)	0.0257*** (0.0081)	0.0109*** (0.0043)	0.0135*** (0.0027)
Constant (C)	2.1757*** (0.4282)	3.7063*** (0.6566)	3.9266*** (0.7023)	3.6340*** (0.5527)
Number of Observations	430.0000	416.0000	416.0000	416.0000
R^2	0.3912	0.5447	0.3337	0.3724

The results presented in Table 4 show that some governance indicators have statistically significant effects on banks' capital-to-assets ratios in developing countries. In both the fixed-effects and random-effects estimation models, Political Stability and Absence of Violence (PS_G)has a negative effect. Although this negative effect may initially appear unexpected, it can be explained through the institutional and behavioral mechanisms of banks. In developing countries, greater political stability is often accompanied by improved institutional performance and greater confidence in the business environment, which encourages banks to allocate their resources to lending activities and more profitable investments rather than maintaining excess capital. This behavior reduces banks' conservatism and consequently lowers the capital-to-assets ratio.

Political stability may also increase competition in the banking market. More intense competition increases pressure on banks to optimize their capital ratios and improve returns on assets. Consequently, a lower capital-to-assets ratio in countries with greater political stability can be regarded as a rational response to increased lending opportunities and a lower-risk environment. Moreover, banks operating in environments characterized by high political stability may expect government support in the event of a crisis. This implicit insurance reduces the need to maintain additional capital to absorb unexpected risks and thus contributes to a lower capital-to-assets ratio. Therefore, the reduction in the capital-to-assets ratio in highly politically stable environments is not only consistent with greater banking development and efficiency but also reflects changes in bank behavior in response to lower political and institutional risks and should not necessarily be interpreted as evidence of financial weakness.

By contrast, the Voice and Accountability indicator (VA_G)consistently has a positive and statistically significant effect on banks' capital-to-assets ratios. The positive effect of this indicator can be explained from the perspective of institutional transparency and accountability. In countries where citizens enjoy greater opportunities for voice and

where governments are more accountable, banking institutions are subject to greater social and regulatory pressure to maintain transparent and sustainable financial performance. Such institutional pressure encourages banks to maintain adequate capital to absorb potential risks and ensure financial stability.

Furthermore, effective Voice and Accountability strengthens internal and external supervisory and auditing processes, reduces banks' risk-taking behavior, and encourages more conservative investment practices. This institutional mechanism causes banks to prioritize long-term stability and financial security rather than focusing exclusively on short-term profitability. Therefore, the positive effect of this indicator demonstrates the key role of transparency and social oversight in the development and resilience of the banking system and is also consistent with the findings of recent studies conducted from 2023 to 2025.

Other governance indicators, such as Control of Corruption $(CC_G)$and Rule of Law (RL_G), have positive but statistically insignificant effects in some models, which may reflect differences in institutional structures and fiscal policies across countries.

Table 4. Estimation of the Effects of Governance Indicators on Banking System Development in Developing Countries (Dependent Variable: Capital-to-Assets Ratio)

Variable	Fixed Effects Without Macroeconomic Variables	Fixed Effects With Macroeconomic Variables	Cross-Section Random Effects	Period Random Effects
GDP Growth (GDP_G)	–	-1.4014** (0.8267)	-0.4305 (0.3296)	-0.4305 (0.3296)
Inflation (INF)	–	-0.0012 (0.0015)	-0.0007 (0.0011)	-0.0007 (0.0011)
Population Growth (POP)	–	-0.0028 (0.0186)	-0.0002 (0.0159)	-0.0002 (0.0159)
Unemployment Rate (U_G)	–	-0.0151 (0.0415)	-0.0229 (0.0272)	-0.0229 (0.0272)
Control of Corruption (CC_G)	0.0011* (0.0008)	0.0009 (0.0010)	0.0011** (0.0006)	0.0011** (0.0006)
Government Effectiveness (GE_G)	0.0045 (0.0051)	0.0057 (0.0043)	0.0010 (0.0044)	0.0010 (0.0044)
Political Stability and Absence of Violence (PS_G)	-0.0007*** (0.0003)	-0.0011*** (0.0003)	-0.0009*** (0.0003)	-0.0009*** (0.0003)
Rule of Law (RL_G)	0.0061* (0.0042)	0.0052* (0.0034)	0.0023 (0.0021)	0.0023 (0.0021)
Regulatory Quality (RQ_G)	-0.0052 (0.0046)	-0.0051 (0.0050)	-0.0031 (0.0056)	-0.0031 (0.0056)
Voice and Accountability (VA_G)	0.0000 (0.0002)	0.0001 (0.0001)	0.0001*** (0.0001)	0.0001*** (0.0001)
Constant (C)	0.0056 (0.0123)	0.0747** (0.0420)	0.0285 (0.0277)	0.0285 (0.0277)

Analysis of the results obtained from the four estimation models shows that, in the models where the money-to-GDP ratio is used as the dependent variable, Political Stability and Absence of Violence (PS_G)has a statistically significant positive effect, indicating that a stable political environment strengthens banking activities and increases confidence in the banking system. Voice and Accountability (VA_G)also has a positive and statistically significant effect, demonstrating the importance of institutional transparency and accountability in encouraging banks to maintain adequate capital and manage risk. Other indicators, such as Rule of Law $(RL_G)$and Control of Corruption (CC_G), exhibit statistically insignificant or marginal effects in some models, which may be attributable to differences in countries' institutional structures and fiscal policies.

In the analysis of bank deposit interest rates, Political Stability and Absence of Violence significantly reduces deposit interest rates, indicating lower bank funding costs in more stable environments. Government Effectiveness

(GE_G)also has a statistically significant negative effect in some models, highlighting the role of effective government policies in improving banks' financial conditions. The other governance indicators do not have statistically significant effects on deposit interest rates.

With respect to the real interest rate, inflation (INF)has a statistically significant negative effect, whereas Rule of Law (RL_G)and Voice and Accountability (VA_G)exhibit statistically significant positive effects. These findings emphasize the importance of institutional transparency and accountability in reducing banking risks and maintaining financial stability.

Finally, in the models of banks' capital-to-assets ratios, Political Stability and Absence of Violence has a statistically significant negative effect, which can be explained by banks' behavior in highly politically stable environments: banks allocate a larger share of their resources to lending activities and consequently reduce their capital ratios. Control of Corruption and Rule of Law have small positive effects, while Voice and Accountability has a statistically significant positive effect in the random-effects models. These findings demonstrate the key role of transparency and accountability in increasing bank capitalization and reducing systemic risk.

Discussion and Conclusion

The findings of this study demonstrate that institutional quality and governance conditions constitute important determinants of banking system development in developing countries, although the magnitude, direction, and statistical significance of their effects vary across different dimensions of banking performance. The results particularly highlight the importance of Political Stability and Absence of Violence, which emerges as the most consistent governance indicator across the estimated models. In the models in which the money-to-GDP ratio is used as a measure of financial depth, political stability has a positive and statistically significant effect across all specifications. This finding indicates that a more stable political environment facilitates financial deepening by reducing uncertainty, improving the predictability of economic policymaking, and strengthening public confidence in formal financial institutions. In politically stable environments, households and firms are more likely to retain financial resources within the banking system, while banks are better positioned to mobilize deposits and extend credit over longer horizons. This interpretation is consistent with the broader institutional literature, according to which institutional predictability and governance effectiveness reduce uncertainty and improve the functioning of financial markets (11). It also aligns with evidence that institutional quality contributes positively to financial market development by creating a more reliable environment for financial intermediation, investment, and technological adaptation (3).

The positive relationship between political stability and financial depth may also be interpreted through the confidence channel. Developing economies frequently experience political disruptions, regulatory reversals, macroeconomic instability, and episodes of financial uncertainty. Under such conditions, depositors may shift their assets toward cash, foreign currency, tangible assets, or informal financial arrangements. Greater political stability can therefore encourage the transfer of financial resources into regulated banking channels, thereby increasing broad money relative to GDP. This result is consistent with the finding that institutional quality enhances financial inclusion by strengthening long-term confidence in formal financial arrangements and reducing the structural barriers that prevent households and firms from participating in financial systems (4). The result can also be understood in light of the broader evidence showing that institutional quality moderates the macroeconomic consequences of uncertainty and improves the capacity of economies to absorb shocks (12). Accordingly, the

statistically significant effect of political stability on financial depth observed in this study appears to reflect the broader role of governance in reducing perceived risk and improving the credibility of financial institutions.

The results for Control of Corruption are more nuanced. In some specifications, the coefficient is negative and significant, while in others it becomes small and statistically insignificant after macroeconomic controls are introduced. This suggests that the influence of corruption on banking development may operate indirectly through macroeconomic stability, resource allocation, fiscal conditions, and the institutional environment rather than through a simple direct relationship. Weak control of corruption can distort bank lending decisions, increase connected lending, weaken supervisory enforcement, and encourage inefficient resource allocation. However, once inflation, economic growth, population growth, and unemployment are included in the model, part of this institutional effect may be absorbed by macroeconomic conditions. This interpretation is compatible with studies emphasizing that institutional quality affects economic outcomes through interaction with fiscal structures, debt management, investment incentives, and broader policy conditions (9, 10). It is also consistent with findings showing that institutional quality can alter the consequences of external debt and macroeconomic pressure in developing countries (7, 8). Thus, corruption control may matter substantially for banking development, but its effect can be contingent upon the wider macroeconomic and institutional setting.

Rule of Law also exhibits relatively limited effects on the money-to-GDP ratio, with most coefficients statistically insignificant and one negative significant coefficient in the period random-effects specification. This result implies that the formal existence of laws may not be sufficient to deepen the banking system unless legal rules are accompanied by effective implementation, judicial reliability, creditor protection, and consistent regulatory enforcement. In many developing countries, formal financial laws coexist with weak enforcement capacity, delays in judicial processes, inconsistent implementation, and limited creditor protection. Consequently, improvements in the formal legal framework may not automatically translate into stronger financial intermediation. The result is consistent with the broader view that institutional quality is multidimensional and that formal institutions produce stronger economic effects when supported by effective governance structures (1). It also corresponds with findings showing that institutional effects on economic performance may be nonlinear and threshold-dependent, such that institutional improvements begin to produce stronger outcomes only after a certain level of institutional effectiveness has been achieved (24). Therefore, the weak effect of Rule of Law on financial depth may reflect institutional implementation gaps rather than the irrelevance of legal institutions.

Government Effectiveness and Regulatory Quality display generally positive but statistically insignificant coefficients in the financial-depth models. These results indicate that improvements in administrative capacity and regulatory design may support banking development, although their direct effects are weaker than those of political stability. One explanation is that regulatory quality and government effectiveness may influence financial development through intermediate channels such as investment quality, market competition, fiscal credibility, technological adoption, and supervisory effectiveness. Evidence from previous research indicates that institutional quality and public-sector effectiveness influence economic development through multiple mechanisms rather than through a single direct pathway (5). In addition, institutional capacity has been shown to affect the relationship between digitalization, financial freedom, industrialization, and economic complexity, suggesting that governance conditions shape the extent to which structural reforms translate into economic gains (16). Consequently, positive but insignificant coefficients for Government Effectiveness and Regulatory Quality may indicate that these

governance dimensions require complementary political and macroeconomic stability before their financial effects become fully observable.

The findings concerning the deposit interest rate provide further evidence of the importance of political stability. Political Stability and Absence of Violence has a negative and statistically significant effect on deposit interest rates across all model specifications. This suggests that greater political stability reduces the risk premium incorporated into the cost of bank funding. Banks operating in uncertain political environments may be required to offer higher returns to attract deposits because households face a greater perceived probability of inflation, exchange-rate depreciation, financial disruption, or institutional instability. When political risk declines, banks can mobilize deposits at lower interest rates because confidence in the banking sector improves and depositors require a smaller compensation for uncertainty. This result is compatible with the argument that institutional quality reduces financial market uncertainty and improves the efficiency of financial resource allocation (11). It also supports evidence that stronger institutions promote financial development through reduced transaction costs, lower uncertainty, and improved market confidence (3).

Government Effectiveness also has a statistically significant negative effect on deposit interest rates in some specifications. This result suggests that effective governments can indirectly reduce bank funding costs through stronger macroeconomic management, more credible monetary and fiscal policies, better supervision, and improved regulatory implementation. Effective public institutions may reduce perceived sovereign and financial-sector risk, allowing banks to attract deposits without offering excessively high nominal returns. This interpretation is supported by research indicating that institutional quality contributes to fiscal sustainability and strengthens the effectiveness of economic management in developing economies (10). It is also consistent with evidence that governance quality modifies the relationship between public debt, investment, and economic performance by increasing policy credibility and improving the allocation of financial resources (9). Therefore, the negative effect of Government Effectiveness on deposit rates appears to reflect the role of credible public administration in lowering systemic and policy-related risk.

In contrast, Rule of Law, Regulatory Quality, Control of Corruption, and Voice and Accountability do not exhibit consistently significant direct effects on deposit interest rates. This indicates that the pricing of bank deposits may respond more strongly to immediate macroeconomic and political conditions than to slower-moving institutional dimensions. Deposit interest rates are typically influenced by monetary policy, inflation expectations, banking competition, liquidity conditions, and perceptions of political and financial risk. Therefore, some governance variables may affect deposit pricing only indirectly. This interpretation is consistent with studies showing that institutional quality often interacts with broader economic conditions rather than producing uniform independent effects (12, 20). The result further suggests that institutional dimensions should not be expected to exert identical effects across all financial outcomes, because different governance mechanisms operate through different channels.

The models using the real interest rate as the dependent variable reveal a different pattern. Rule of Law and Voice and Accountability have positive and statistically significant effects across the estimated specifications. The positive effect of Rule of Law suggests that stronger legal institutions may support higher real returns by reducing default risk, improving contract enforcement, strengthening creditor rights, and enhancing confidence in formal financial contracts. When legal enforcement is reliable, banks may allocate funds more efficiently and may face lower losses associated with non-performing assets and weak contractual compliance. This can improve the quality

of financial intermediation and make real returns more sustainable. The result is consistent with the broader institutional literature showing that stronger institutions improve financial market development by reducing uncertainty and strengthening the functioning of formal financial arrangements (3). It also aligns with evidence that institutional quality enhances the effectiveness of financial systems and broadens access to formal finance over the long term (4).

The positive effect of Voice and Accountability on the real interest rate may reflect the role of transparency, disclosure, public oversight, and policy accountability. Greater accountability can reduce arbitrary intervention in financial markets, strengthen the credibility of public institutions, and improve the information environment in which banks operate. Research at the organizational level shows that high-quality reporting and effective institutional monitoring improve information environments and reduce information asymmetry (23). Similarly, studies examining institutional investors and financial decision-making indicate that governance and monitoring mechanisms can affect corporate financial behavior and resource allocation (22). These mechanisms may also operate in the banking sector, where greater transparency and accountability can improve pricing efficiency and reduce distortions in real returns. Consequently, the positive relationship between Voice and Accountability and the real interest rate observed in this study is consistent with the proposition that transparent institutional settings enhance the credibility and efficiency of financial pricing.

Inflation, by contrast, has a strongly negative and statistically significant effect on the real interest rate. This result is theoretically expected because higher inflation reduces the purchasing-power-adjusted return on financial assets when nominal interest rates do not increase proportionately. In developing economies, where inflation is often volatile and monetary policy credibility may be weaker, this effect can be particularly strong. High inflation can also increase uncertainty, reduce savings in domestic currency, shorten financial planning horizons, and weaken the effectiveness of financial intermediation. The interaction between macroeconomic instability and institutional quality is emphasized in previous studies showing that institutions influence the ability of economies to manage fiscal pressure, financial uncertainty, and structural shocks (7, 11). Therefore, the negative effect of inflation reinforces the argument that improvements in governance are most likely to support banking development when accompanied by macroeconomic stability.

The results for the capital-to-assets ratio reveal another important institutional mechanism. Political Stability and Absence of Violence has a negative and statistically significant effect across the estimated models. Although this may initially appear inconsistent with the expectation that institutional stability strengthens financial resilience, the result can be explained by changes in bank behavior under lower-risk conditions. Greater political stability reduces uncertainty and improves business confidence, allowing banks to allocate a larger share of their balance sheets to loans and income-generating assets rather than maintaining comparatively large capital buffers. In more uncertain environments, banks may behave more conservatively and hold higher capital relative to total assets as protection against unexpected political and economic shocks. Therefore, the negative coefficient does not necessarily indicate a deterioration in banking stability; rather, it may reflect a reallocation of bank balance sheets toward productive assets when perceived systemic risk declines. This interpretation is compatible with evidence that stronger institutional quality enhances investment conditions and alters financial risk perceptions (21). It is also consistent with studies showing that governance conditions modify the relationship between risk, financial development, and resource allocation (15).

The positive and statistically significant effect of Voice and Accountability on the capital-to-assets ratio in the random-effects models is particularly important. Greater Voice and Accountability may increase pressure on financial institutions to maintain transparent, prudent, and socially accountable balance-sheet structures. Stronger public scrutiny, regulatory oversight, disclosure requirements, and accountability mechanisms can encourage banks to retain sufficient capital to protect depositors and reduce systemic vulnerability. This explanation is consistent with evidence that effective institutional monitoring improves the information environment and promotes more disciplined financial behavior (23). It also accords with research emphasizing that good governance enhances organizational quality by strengthening accountability structures and institutional effectiveness (2). Thus, while political stability may encourage banks to reduce precautionary capital as risk declines, Voice and Accountability may simultaneously create stronger incentives for capitalization through supervisory and reputational channels.

Control of Corruption and Rule of Law have small positive effects on the capital-to-assets ratio in some models, although these effects are not uniformly significant. These results may suggest that stronger anti-corruption institutions and more reliable legal systems encourage banks to adopt sounder balance-sheet practices, but the impact varies across countries because of differences in supervisory quality, banking structures, government intervention, and institutional maturity. Previous research has shown that institutional effects often depend on complementary economic and governance conditions (24). The heterogeneous nature of developing economies may therefore explain why these variables do not display stable statistical significance across all models. Countries with similar scores on formal institutional indicators may differ substantially in enforcement capacity and financial-sector governance, thereby weakening the average effect estimated across the panel.

Overall, the findings reinforce the broader proposition that institutional quality affects financial development through several channels rather than through a single uniform mechanism. Governance affects financial depth, funding costs, real returns, bank capitalization, investment incentives, macroeconomic stability, and risk perception. This multidimensional interpretation is consistent with evidence showing that institutional quality shapes financial market development (3), financial inclusion (4), the economic effects of external debt (7, 8), fiscal sustainability (10), and investment (9). It is also consistent with findings that institutional quality affects economic growth through human capital (5), natural resource governance (6), and the management of resource-related economic uncertainty (13, 14). These studies collectively support the present finding that banking development in developing countries cannot be understood independently of the institutional structures within which financial intermediaries operate.

The findings are also relevant to the growing literature on structural transformation and technological development. Strong institutions appear to increase the benefits of financial freedom, digitalization, innovation, and technological progress (16, 17). Similarly, institutional quality strengthens the contribution of green finance to sustainable development and supports green economic growth (18, 19). These results imply that banking systems in developing countries are more likely to contribute effectively to structural transformation when institutional arrangements provide adequate political stability, transparency, legal enforcement, and accountability. The present findings therefore extend previous research by showing that different governance dimensions affect distinct aspects of banking performance differently. Political stability appears particularly important for financial depth and funding costs, whereas Rule of Law and Voice and Accountability are more closely related to real interest rates and capitalization. This heterogeneity underscores the need to avoid treating institutional quality as a single undifferentiated construct.

Finally, the results suggest that the institutional determinants of banking development are closely connected to the broader quality of governance and economic management. Institutional quality can influence whether countries successfully transform natural-resource revenues into financial development (15), whether resource-rich economies diversify and increase economic complexity (14), whether foreign investment is attracted under credible institutional conditions (21), and whether sectoral development generates sustainable economic growth (20). Because banks serve as central intermediaries in most developing economies, improvements in governance can have effects that extend beyond the financial sector to investment, productivity, fiscal sustainability, and structural transformation. The current study therefore supports an institutional interpretation of banking development in which governance quality determines not only the quantity of financial intermediation but also its pricing, resilience, and capacity to support broader economic development.

This study has several limitations that should be considered when interpreting its findings. First, the sample is limited to 26 developing countries, and therefore the results may not be fully generalizable to all developing or emerging economies, particularly countries with substantially different political, financial, or institutional structures. Second, the analysis relies on aggregate country-level governance indicators, which may not capture differences in enforcement quality, informal institutions, banking supervision, or institutional conditions within individual countries. Third, although several macroeconomic control variables are included, other potentially relevant determinants of banking performance, such as exchange-rate volatility, monetary policy rates, bank concentration, financial openness, sovereign risk, public debt, and capital-market development, are not explicitly modeled. Fourth, the study primarily identifies statistical associations within a panel framework and does not fully eliminate the possibility of reverse causality between institutional quality and financial development. Finally, missing observations and differences in data availability across countries and dependent variables may affect the comparability of the estimated models.

Future studies could extend the analysis by examining larger samples and comparing low-income, lower-middle-income, upper-middle-income, and emerging-market economies separately. Researchers could also investigate nonlinear and threshold effects to determine whether governance improvements influence banking development only after institutional quality reaches a particular level. Dynamic panel methods, instrumental-variable approaches, or system GMM estimators could be used to address persistence, endogeneity, and reverse causality more explicitly. Future research could additionally distinguish between state-owned and private banks, Islamic and conventional banking systems, or highly concentrated and competitive banking markets. Incorporating variables such as monetary policy rates, exchange-rate volatility, financial openness, digital financial development, non-performing loans, bank concentration, sovereign risk, and regulatory capital requirements could provide a more comprehensive explanation of the observed relationships. Country-specific or regional analyses may also clarify why the same governance indicator produces different effects across institutional environments.

Policymakers in developing countries should treat institutional reform as an integral component of financial-sector development rather than as a separate administrative objective. Strengthening political stability, improving policy predictability, enhancing accountability, and ensuring consistent implementation of financial regulations can improve confidence in banking institutions and reduce the risk premium embedded in financial transactions. Governments and supervisory authorities should also improve transparency, disclosure, regulatory enforcement, and accountability mechanisms so that institutional improvements translate into stronger bank capitalization and more efficient financial pricing. Anti-corruption reforms should be accompanied by improvements in supervisory

capacity and legal enforcement rather than relying solely on formal rules. In parallel, macroeconomic stability should remain a central priority because high inflation and economic uncertainty can weaken the positive effects of institutional reform. Banking-sector policies should therefore combine institutional strengthening, prudent macroeconomic management, effective supervision, and credible long-term regulatory frameworks to promote financial deepening, efficiency, and resilience.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

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All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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