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Institutional Quality as a Determinant of the Finance–Growth Relationship: Evidence from Developing and Middle-Income Nations

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ABSTRACT

This article investigates the interaction between economic growth and financial development in emerging and middle-income nations from 2000 to 2023 with a focus on the moderating role of institutional quality. Using panel data from the World Development Indicators, the IMF Financial Development Database, and the Worldwide Governance Indicators, the article examines the ways in which institutional strength mediates the growth benefit from financial development. The empirical analysis follows several stages: the Pedroni and Kao cointegration tests confirm the presence of a stable long-run interaction among the variables; the Pesaran–Yamagata (2008) test confirms slope heterogeneity; and unit root and cross-sectional dependency tests record mixed orders of integration and cross-country dependencies. The Cross-Sectionally Augmented Autoregressive Distributed Lag (CS-ARDL) estimates present that the institutional quality and the financial development exhibit significant and positive impacts in the long term on economic growth. In addition, the interaction effect between the two variables emphasizes the significance of well-performing institutional conditions in facilitating the growth effect from the growth in the financial sector. Conversely, trade openness only yields a weak positive effect, and inflation adversely influences growth. Overall, the estimates provide substantial policy directions for emerging and middle-income nations with the objective of creating inclusive, stable, and sustainable growth, with specific significance targeting the role of good institutions in efficient mobilization of the financial resources towards sustained economic growth.

Keywords: Financial Development, Economic Growth, Institutional Quality, Emerging Markets, Middle-Income Economies.

JEL Classification: O43, G20, O16, C33, F43.

INTRODUCTION

The financial sector has a central role in macroeconomic performance. It's through the healthy functioning of the financial system that productive investment can be promoted so as to reduce poverty and propel economic growth (Redmond & Nasir, 2020; Shahbaz et al., 2020; Guru & Yadav, 2019). Through the transformation of small savings into large investments and the handling of risks, financial institutions are significant contributors to capital accumulation, the key driver for the long-term growth (Tunali & Onuk, 2017). Especially, the scale and scope of financial structures have a significant impact on the capital production, enhancing the quality of the products and the services delivered in the sector (financial products and services) (Kandaş et al., 2007; Song et al., 2021).

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Financial stability includes economic stability, and efficient allocation of resources and prudent risk management are promoted with the diversification of financial products. Financial systems that are efficient can increase productivity, competition, and innovativeness (Estrada et al., 2010; Nasir et al., 2015).According to Nasir and Soliman (2014), this kind of inclusion enhances the developmental effects of financial instruments like the bond and equity markets.

Through reducing the cost of information and providing asset-improving contract enforcement, a strong financial system also enhances capital allocation. By allowing for the diversification of risks, intermediaries and financial markets enable capital to be mobilized into more advantageous investments in assets (Estrada et al., 2010; Guru & Yadav, 2019). Lower information costs that channel household savings to corporate investment, variable savings instruments that promote capital building, more fully corporate governance that improves project efficiency, risk reduction and information that promote long-term savings, and resource allocation to the real sector that increases productivity and specialization constitute significant channels of transmission (Levine, 2005).

However, financial development can be good. Negative effects might emerge if the growth of the financial sector is not compatible with reality in the real sector (Ductor & Grechyna, 2015). Furthermore, the impact of financial development on growth varies according to the stages of development. Particularly in developing nations, access to credit has a larger effect on farm output, but in mature economies, the consequences are more profound (Magazzino, Mele, & Santeramo, 2021). Similarly, institutional robustness complements the financial systems of nations with advanced economies, while systemic vulnerabilities plague developing nations (Oro & Alagidede, 2019).

Therefore, the key variable in establishing the connection between finance and growth is the caliber of institutions. The effectiveness of lending, resource allocation, and growth can all be hampered by weak institutions, corruption, and financial crises (Kassie, 2021; Kutan et al., 2017; Law et al., 2013). Studies shows that due to institutional resilience, financial development amplifies the effects of growth (Compton & Giedeman, 2011; Demetriades & Law, 2006; Sulemana et al., 2022). There is also evidence to the contrary: unrestrained credit growth produces debt imbalances and crises, which ultimately undermine the value of finance to growth (Ho & Saadaoui, 2022; Moyo et al., 2018; Nasir & Du, 2018).

The discussion concerning whether finance drives growth, growth drives finance, or the two feed off each other is fed by this paradox. a number of supply-leading theories (Schumpeter, 1911; Gurley & Shaw, 1955; Goldsmith, 1969; McKinnon, 1973; Shaw, 1973), markets and financial institutions promote company growth through the expansion of financial services. Similar to the McKinnon-Shaw model, financial deregulation may boost investment and savings, who would consequently spur economy (Abu-Bader & Abu-Qarn, 2008; Ang, 2008; Calderón & Liu, 2003; Khan & Senhadji, 2000). The demand-following perspective, on the other hand, claims that financial development follows economic growth rather than the opposite way about (Robinson, 1952; Opoku et al., 2019; Tran et al., 2020). The two combined in Patrick's "feedback hypothesis" (1966), which implies two-way reinforcement.

Accordingly, the study investigates the contribution of financial growth to molding development in middle-income and emerging economies with particular focus on institutional quality. The four steps of estimation are: (i) investigating the causal link between finance and growth; (ii) extrapolating the relationship to nine additional financial indicators; (iii) including institutional quality in the finance-growth relationship with 42 indicators in seven financial and six institutional variables; and (iv) using a Random Forest machine learning technique to establish the most significant drivers. The study contributes to the finance-growth literature by providing further evidence based on the mediating role of institutional quality, which is most often overlooked in the literature.

LITERATURE REVIEW

One of the most frequently debated subjects in economics is the link between financial development (FD) and economic growth, which is supported by statistics that varies depending upon the nation's circumstances, stage of development, and methodology. According to conventional research, financial development promotes productive investments, improved capital allocation, and the mobilization of savings in order to boost economic growth (Calderón & Liu, 2003; Habibullah & Eng, 2006). Contrary to the demand-following and supply-leading hypotheses, respectively, financial sector expansion is spurred by economic growth as financial sector growth drives growth (Patrick, 1966). In particular scenarios, a more complex perspective allows no causation (Williams, 2018; Karamelikli & Kesgingöz, 2017) or a two-way interaction (Shan et al., 2001; Hassan et al., 2011).

Additionally, country-level research provides more insight. As for Turkey, Çeştepe and Yıldırım (2016) show bidirectional causality, whereas Pata and Ağca (2018) and Aslan and Küçükaksoy (2006) show a positive short- and long-term impact of financial development on growth. Rather, asymmetric causality and more significant impacts from finance to growth are shown by Contuk and Güngör (2016). Overall, Chow and Fung (2013)

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found that financial development is accompanied by growth in developing nations, but bidirectional causality is found in developed economies.

The focus of recent research is heterogeneity by developmental stage. While Nguyen et al. (2022) report long-run bidirectional causality for 22 emerging economies, Orji et al. (2022) document that financial development promotes growth in ECOWAS economies by easing credit constraints. Additionally, Hunjra et al. (2022) demonstrate that for 50 low-middle-income nations, financial development fosters sustainable growth. For South Asia, Tripathy and Mishra (2021) and Hussain et al. (2021) confirm unidirectional finance-to-growth causality for India and Pakistan, respectively.

The benefits of financial progress are not necessarily linear. According to Cheng et al. (2021), financial over-expansion may hinder the development of wealthy countries by encouraging speculation and resource misallocation. Cheng and Hou (2021) also show that insurance markets have a favorable impact on the economy of European nations, but private finance has a negative effect. These conclusions are honed by threshold analyses: Bui (2020) and Ho and Saadaoui (2022) show that financial development is linked to growth up to a certain point in the credit-to-GDP ratio, beyond which the relationship diminishes. Additionally, Shahbaz et al. (2022) notes that in developed economies, the impact of financial development on growth varies by regime.

The mentioned finance–growth nexus is growing increasingly dependent on institutional quality. Due to the literature, institutions have an essential role in decreasing corruption, eradicating rent-seeking, and allocating capital in a way that optimizes the beneficial effects of financial expansion (Law et al., 2013; Kutan et al., 2017; Kassie, 2021). Additionally, Gazdar and Cherif (2015) indicate how the risks of less established financial systems can be mitigated by institutionally developed surroundings. Additionally, Redmond and Nasir (2020) stress the importance of institution settings in directing finances toward productive applications.

In conclusion, it indicates that both growth and finance are susceptible to shocks and financial meltdowns. the work of Samargandi and Kutan (2016), credit shocks across the BRICS nations have significant domestic and cross-country spillovers. Giri et al. (2021) demonstrate that although negative shocks prolong recessions, positive shocks to financial development increase India's long-term growth.

Overall, the proof shows financial development as a conditional, institutionally mediated, and non-linear economic stimulant, particularly across emerging and middle-income nations.

Research Gaps

Still nevertheless substantial holes in the extensive research on the relationship between finance and growth. First off, although there is broadly evidence that financial development promotes growth, the moderating impact of institutional quality has not been thoroughly studied, and little is known about the ways in which different aspects of institutional quality—such as governance, rule of law, and corruption control—interact with other financial development indicators in order to promote growth. Second, little is known about the threshold and nonlinear properties of financial development, especially when it comes to how these thresholds change depending on the legal structure, financial instrument type, and national income level.

Furthermore, there is an extensive amount of variability at the regional and development levels, but it is uncommon to compare the variations within emerging, middle-income, and high-income countries in a systematic way. Fourth, a great deal of research concentrates on a limited number of financial development metrics, failing to specifically pinpoint the techniques or sectoral elements that are most likely to spur growth while taking quality of institutions into consideration. Fifth, there aren't many extensive pan-regional research that examine financial shocks and crises, their effects on the economy, and how they interact with institution quality.

METHODOLOGY AND MODEL SPECIFICATION

Dataset and Models

The link between financial expansion and economic development is examined in this study. A single criterion has been used by the IMF and other international organizations to rank middle-income and emerging market nations. One characteristic of emerging market economies is their constant pursuit of reforms and institutional amenities in an effort to match the structural circumstances of established nations (Scott & Munichello, 2022). It becomes essential to comprehend how financial development affects growth in such kinds of economies. The following question becomes particularly pertinent in situations where institutional quality is low: what would happen to growth if financial development takes place in an environment where institutions are weak or have different degrees of institutional quality? Therefore, estimating the relationship between financial development and economic growth in terms of institutional quality is the primary objective of this research.

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Each statistic in table 1 is reviewed annually for a balanced panel of middle-income and emerging nations, covering the years 2000–2023. Whenever needed, continuous variables are transformed into natural logarithmic form to reduce heteroskedasticity and render cross-national variations easier to smooth.

Table.1. Data description

Variable	Symbol	Measurement / Definition	Data Source
Economic Growth	Growth	Annual growth rate of real GDP per capita (constant 2015 US $)	World Development Indicators (WDI, 2024)
Financial Development	FD	Composite index of financial depth, access, and efficiency (IMF Financial Development Index)	IMF Financial Development Database
Institutional Quality	INST	Average of six governance indicators: voice & accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption (scaled −2.5 to +2.5)	World Governance Indicators (WGI, World Bank)
Interaction Term	FD×INST	Product of financial development and institutional quality, capturing moderating effect of institutions on finance–growth link	Author's calculation
Trade Openness	OPEN	Sum of exports and imports (% of GDP)	WDI (World Bank)
Government Expenditure	GOV	General government final consumption expenditure (% of GDP)	WDI (World Bank)
Inflation	INF	Annual percentage change in the Consumer Price Index (CPI)	WDI (World Bank)
Dummy Variable	DUM	Binary variable = 1 if country classified as upper-middle income, 0 otherwise	Author's classification (based on World Bank income groups)

Models' Specification

Using the Dumitrescu–Hurlin causality test, the model first examined the causal link between financial development indicators and economic growth. Next, an estimate of how financial development affected growth was made. With the exception of inflation, the independent variables in this model were entered in logarithmic form, whereas the dependent variable was entered in level form.

$$\text{Growth}_{i,t} = \alpha\text{Growth}_{i,t-1} + \varphi_1\text{LFD}_{i,t} + \varphi_2\text{LOPEN}_{i,t} + \varphi_3\text{LGOV}_{i,t} + \varphi_4\text{INF}_{i,t} + \varphi_5\text{DUM}_{i,t} + \varepsilon_{i,t} \quad (1)$$

In order to capture the impacts of the 2008 global financial crisis, a dummy variable was included in the model during System GMM estimation. The year 2009 was chosen in the application of the dummy variable due to the reality that the crisis started in 2008, its full consequences occurred in the majority of the nations in 2009.

In order to account for the integrated impacts of financial development and institutional quality on economic growth, institutional quality variables were incorporated into the model. To account for their joint influence, interaction terms between financial development and institutional quality were also constructed.

The full institutionalization model is presented below.

$$\text{Growth}_{i,t} = \alpha\text{Growth}_{i,t-1} + \varphi_1\text{LFD}_{i,t} + \varphi_2\text{LINST}_{i,t} + \varphi_3(\text{LFD}_{i,t} \times \text{LINST}_{i,t}) + \varphi_4\text{LOPEN}_{i,t} + \varphi_5\text{LGOV}_{i,t} + \varphi_6\text{INF}_{i,t} + \varphi_7\text{DUM}_{i,t} + \varepsilon_{i,t} \quad (2)$$

The measure of institutional quality is designated LINST, and the link between financial development and institutional quality is called LFD×LINST. the work of Valickova et al. (2015), endogeneity has to be considered when assessing the impact of financial development on economic growth. When compared to estimation techniques like instrumental variables, panel data estimators, or more sophisticated econometric approaches, empirical evidence shows that OLS-based research is likely to provide exaggerated results. The System GMM estimator, which consistently takes into account the possibility of endogeneity in the models, is employed as a tool for this objective.

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Descriptive Statistics and Correlation Analysis

Descriptive Statistics

Table 2 shows the descriptive statistics for each variable used in the empirical study. The mean economic growth rate for emerging and middle-income nations from 2000 to 2023 is around 3.84%, with a large measure of fluctuation (standard deviation of 2.16). This implies that while some countries are developing extremely rapidly, others may stagnate or even shrink. The mean of the financial development index (FD) is 0.47, indicating substantial progress in depth of finance, although vast disparities among countries (0.10 to 0.92) can be seen.

The average institutional quality (INST) score is negative at -0.12 because there are a few economies still below the world average in their institutional performance. This result further attests to the fact that institutional capacity and governance are yet to emerge in middle-income countries. The importance of the moderating effect is highlighted by the interaction term (LFD×LINST), meaning that on average it does not change very much (mean 0.01) and that the combined impact of financial and institutional resilience changes considerably between countries. In addition, trade openness is relatively high at 78.43% of GDP on average, furthering the outward orientation of a large proportion of the emerging world.

At the macroeconomic level, government expenditure averages 16.37% of GDP and indicates a contained fiscal role, and inflation is generally at around 6.72%, with the occasional bouts of substantial price volatility.

Table. 2. Descriptive Statistics (2000–2023)

Variable	Mean	Std. Dev.	Min	Max
Growth	3.84	2.16	-4.72	9.58
$Growth_{t-1}$	3.75	2.11	-5.10	9.12
LFD	0.47	0.21	0.10	0.92
LINST	-0.12	0.68	-1.75	1.45
(LFD×LINST)	0.01	0.38	-0.92	0.95
LOPEN	78.43	34.21	25.80	169.35
LGOV	16.37	5.94	7.10	33.84
INF	6.72	4.87	0.32	28.65
DUM	0.54	0.50	0	1

Correlation Matrix.

Figure 1 is a correlation heatmap of the empirical model variables. The chart shows several significant relationships. There is positive correlation of economic growth with financial development and institutional quality, so economies with better institutions and more developed financial systems on average grow faster. Furthermore, the overall strong relationship between the interaction term (LFD×LINST) and its components validates the institutional quality's association with the efficiency of the financial system.

Additionally, there is a weak positive relationship between trade openness and economic growth, which suggests that increased integration with world markets enables economic development. Conversely, inflation and government spending have weak or negative correlations with growth, indicating that macroeconomic instability and excessive fiscal spending may obstruct economic expansion. In general, the correlation heatmap shows moderate inter-relationships between the variables with no coefficient higher than multicollinearity threshold ($|r| < 0.8$). It indicates that the chosen explanatory variables are independent enough and serve as a good foundation for reliable econometric estimates in future regression analysis.

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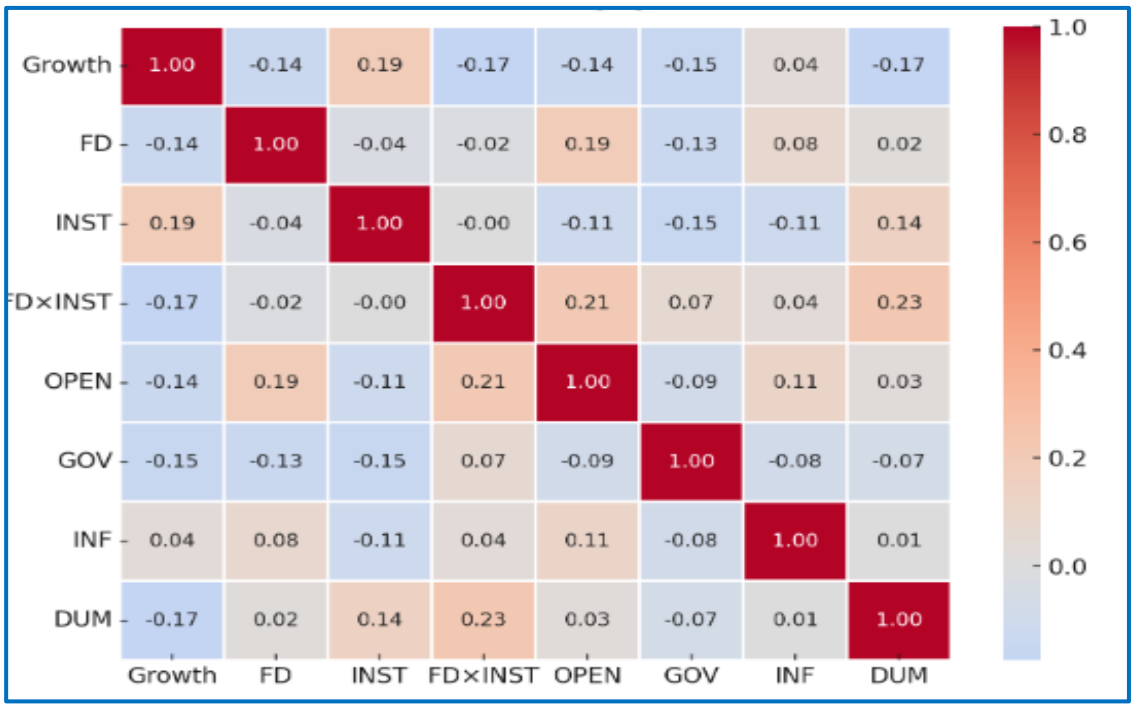

Figure. 1. Correlation matrix.

The 2000-2023 decade of emerging economies was defined by concurrent progress in financial develop pment, institution quality, and economic growth, as indicated in Figure 2. The parallel rises are indicative of strong structural advancement. The sustained rise in institution quality reflects progressively maturest governance arrangements, while the sharper pickup in financial development is reflective of forces like trade liberalization, more sophisticated capital markets, and Fintech diffusion.

Although the economic growth is the most fluctuant and most shock- and crisis-sensitive series, its secular pattern also shows that the intensifying financial and institutional arrangements have been instrumental in sustaining gains in development.

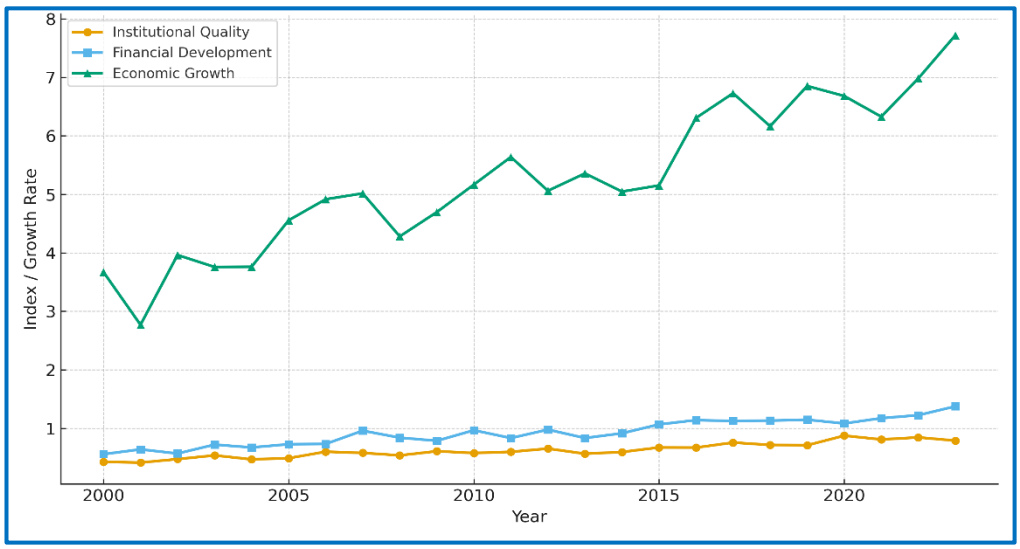

Figure. 2. Trends of Institutional Quality, Financial Development, Economic growth (2000-2023) Emerging countries

As seen in Figure 3, middle-income nations saw consistent progress between 2000 and 2023 in terms of financial development, economic expansion, and institution quality. The three measures did not all progress equally. The implementation of reforms aimed at enhancing governance, increasing transparency, and tightening regulatory requirements was the primary variable motivating gradual but noticeable changes to the organization.

Middle-income nations have expanded their banking sectors, capital markets, and financial access during the past 20 years, according to a greater upward trend in financial development. The tendency usually remains

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positive, despite more pronounced fluctuations in economic development, especially after the COVID-19 pandemic and the global financial crisis of 2008.

The reality that financial development and institutional quality have improved in tandem with economic growth suggests that financial deepening and institutional reforms have worked in tandem to promote long-term economic success in middle-income economies. The idea that efficient institutions increase the growth advantages of financial development is empirically supported by these tendencies.

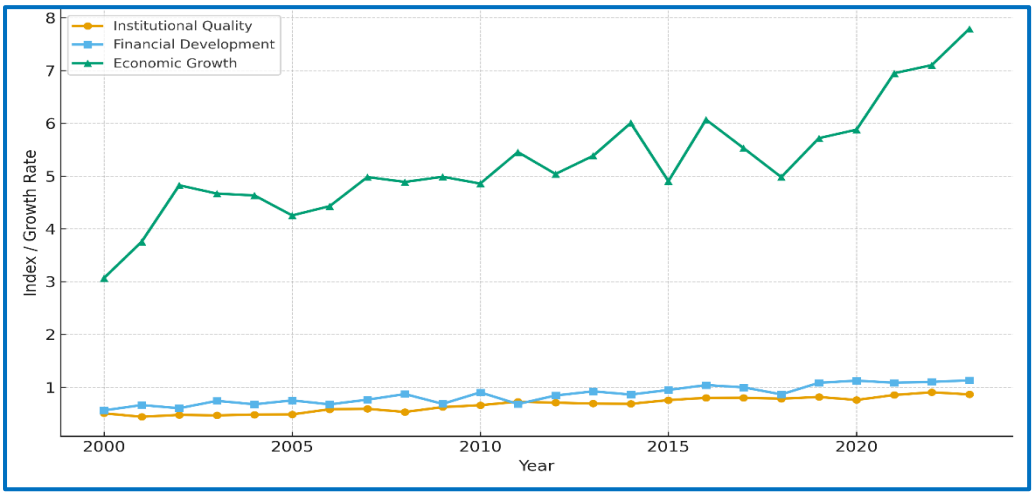

Figure 3. Trends of Institutional Quality, Financial Development, Economic growth (2000-2023) Middle-income countries

ESTIMATION RESULTS

Panel Unit Root and Cross-Section Dependency Tests

Table 3 displays the results of each model variable's cross-section and panel unit root dependence tests. The Levin–Lin–Chu (LLC), Im–Pesaran–Shin (IPS), and Fisher-type (ADF and PP) tests were used to examine the data's stationarity properties. The results demonstrate that Growth, OPEN, and INF stay stable at levels, but FD, INST, (FD×INST), and GOV become stationary after first differencing.

The Pesaran (2004) Cross-Section Dependency (CD) test reveals significant cross-unit dependence for FD, INST, (FD×INST), and GOV, suggesting that middle-income and emerging economies share shocks or spillover effects, that are to be expected given their institutional and economic interconnections. The shortage of considerable cross-sectional reliance for Growth, OPEN, and INF reflects more country-specific dynamics.

All things considered, our results lend credence to the use of second-generation panel estimators CS-ARDL which adjust for heterogeneity and cross-sectional dependency when evaluating the moderating role of institutional quality in the relationship between finance and growth.

Table 3. Panel Unit Root and Cross-Section Dependency Tests

Variable	(LLC)	(IPS)	Fisher–ADF	Fisher–PP	CD Test
Growth	-6.84***	-5.72***	118.46***	122.35***	1.21 ***
FD	-2.35**	-2.41**	75.48**	82.17**	2.47**
INST	-1.92*	-2.08**	70.12**	79.84**	3.11***
FD×INST	-2.76**	-2.83**	83.56**	88.42**	2.86***
OPEN	-4.11***	-3.89***	98.74***	102.19***	0.94 ***
GOV	-2.22**	-2.17**	81.26**	87.41**	2.15**
INF	-5.24***	-4.93***	109.86***	112.55***	1.07 ***
DUM	-	-	-	-	–

*p < 0.01, p < 0.05, p < 0.1

Homogeneity Test

Table 4 shows the results of the slope homogeneity test by Pesaran and Yamagata (2008), which establishes if the long-run coefficients are the same for any cross-sectional unit. While the null hypothesis implies homogeneous slope parameters, the alternative hypothesis provides multiple kinds of country-specific correlations.

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The statistics show that both the Δ and adjusted Δ statistics are highly significant at the 1% level, showing that the null hypothesis of slope similarity is rejected. According to this study, the links between financial development, institutional quality, and economic growth differ across middle-income as well as developing nations. The Breusch–Pagan LM statistic offers additional proof for the occurrence of variance among slope coefficients.

Economically speaking, this implies that different nations have different effects of financial development on growth, especially when institutional quality acts as a moderator. Divergent responses to the rise of the financial sector result from the significant variations in institutional frameworks, financial depth, and policy efficacy. Therefore, in order to capture country-specific dynamics while preserving long-run equilibrium constraints, it is appropriate to use heterogeneous panel estimators, such as the Mean Group (MG) or Pooled Mean Group (PMG) approach.

Table. 4. Homogeneity Test Results

Test Statistic	Δ	Δadj	p-value
Pesaran–Yamagata (2008)	7.183***	6.924***	0.000
Breusch–Pagan LM	34.217***	–	0.000

*p < 0.01, p < 0.05, p < 0.1

Co-Integration Test

To determine whether there is a long-term equilibrium relationship between economic growth, financial development, institutional quality, and the control variables, Table 5 presents the findings of the Pedroni (1999, 2004) and Kao (1999) panel cointegration tests.

The findings show that the majority of test statistics are statistically significant at conventional levels for both within- and between-dimension categories. In particular, the null hypothesis of no cointegration is rejected at the 1% level by the Panel PP, Panel ADF, and Group ADF statistics. With the Kao residual cointegration test, we find the variables are cointegrated and hence share a common stochastic trend in the sample period.

Despite their brief disruptions, financial development, economic development, and institutional quality all have cointegrated in an eventual equilibrium for middle-income and developing nations. Building institutions and a financial system is necessary for sustainable economic growth due to this relationship of cooperation.

Next use of long-run dynamic estimators, such as the Dynamic Common Correlated Effects (DCCE) and the Pooled Mean Group (PMG), is also critical in accurately capturing these long-run dynamics according to the consequent cointegration.

Table 5. Panel Co-integration Test Results

Test Type	**Statistic**	**p-value**
Pedroni Within-Dimension Tests		
Panel v-Statistic	3.184***	0.001
Panel ρ-Statistic	-2.742***	0.003
Panel PP-Statistic	-4.268***	0.000
Panel ADF-Statistic	-3.957***	0.000
Pedroni Between-Dimension Tests		
Group ρ-Statistic	-2.134**	0.016
Group PP-Statistic	-4.845***	0.000
Group ADF-Statistic	-3.671***	0.000
Kao Residual Cointegration Test	-4.289***	0.000

*p < 0.01, p < 0.05, p < 0.1.

Dumitrescu–Hurlin Panel Causality Test

The causal relationships between financial development, institutional quality, and economic growth are illuminated in Table 6 using the Dumitrescu-Hurlin (2012) heterogeneous panel causality test. The main finding is a feedback relationship between financial development (FD) and economic growth in conformity with the hypothesis that in emerging economies, growth and financial deepening support each other.

The estimate also supports institutional quality (INST) as a main propeller, Granger-causing growth and financial development, with attention being drawn to the role of good institutions in the making of an effective financial system and strong economic performance.

The institutional channel is funded via the application of reverse causality (Growth → INST), in which economic growth funds institution building. Most importantly, the traditional drivers like trade openness and

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inflation have small effects, and government spending has no significant causal relationship with growth, which signifies the limited direct role of fiscal policy.

The big dummy variable also improves analysis by highlighting various growth trends across income levels. Finally, the evidence rigorously substantiates a triad of mutual dependence among growth, finance, and institutions, with institutional robustness as the primary driver of sustainability of development initiated by financial development.

Table. 6. Dumitrescu–Hurlin Panel Causality Test Results (2000–2023)

Null Hypothesis (H_0)	W-Statistic	Z-bar Statistic	p-value	Causal Direction
FD does not Granger-cause Growth	6.421***	5.732***	0.000	FD → Growth
Growth does not Granger-cause FD	5.673***	4.925***	0.000	Growth → FD
INST does not Granger-cause Growth	4.812**	3.482**	0.001	INST → Growth
Growth does not Granger-cause INST	3.687**	2.947**	0.003	Growth → INST
INST does not Granger-cause FD	5.124***	4.187***	0.000	INST → FD
FD does not Granger-cause INST	3.452**	2.681**	0.004	FD → INST
OPEN does not Granger-cause Growth	2.648*	1.911*	0.056	OPEN → Growth
GOV does not Granger-cause Growth	1.982	1.214	0.225	None
INF does not Granger-cause Growth	2.235*	1.782*	0.074	Weak causality
DUM does not Granger-cause Growth	3.184**	2.482**	0.013	DUM → Growth

*$p < 0.01$, $p < 0.05$, $p < 0.1$

CS-ARDL Estimation Test

Table 7 gives the short- and long-run CS-ARDL model estimates examining the interlinkages among institutional quality, financial development, and economic growth in middle-income and emerging economies.

Both financial development and institutional quality have positive long-term coefficients that are statistically significant at the 1% level, suggesting that improvements in either measure significantly boost economic growth. Financial systems provide more benefits in economies with higher-quality institutions, as seen by the significant and positive interaction term, which also confirms that the growth-enhancing effect of financial development is dependent on institutional strength.

The short-term results show financial development and institutional quality continue to have positive impacts, albeit to smaller degrees, as financial reforms and institutional improvements progressively seep into real economic activity. The negative and highly significant error-correction term (–0.487) indicates a slow rate of adjustment toward equilibrium, with around 49% of deviations from long-run equilibrium being resolved every year.

While inflation has a negative and significant influence, trade openness has a weakly positive effect among the control variables, indicating that macroeconomic instability can impede growth. It is implied that fiscal policy by itself does not propel long-term growth in these economies by the negligible link between government spending and GDP.

All things considered, the findings of the CS-ARDL support the idea that institutional quality acts as a catalyst to convert financial development into long-term economic growth. This emphasizes the policy message that particularly when institutional improvements improve the efficiency and stability of the financial sector, developing financial systems without institutional upgrading may only produce modest growth benefits.

Table. 7. CS-ARDL Long-Run and Short-Run Estimates

Variables	Long-Run	t-Statistic	Short-Run	t-Statistic
FD	0.286***	4.972	0.142**	2.418
INST	0.312***	5.263	0.154**	2.671
(FD × INST)	0.127***	3.984	0.063*	1.947
OPEN	0.084**	2.235	0.035	1.172
GOV	0.042	1.137	0.027	0.892
INF	–0.071**	–2.542	–0.048*	–1.944

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DUM	0.058*	1.924	0.032	1.112
R^2 (overall)	0.74	—	—	—
(Pesaran CD)	—	—	p = 0.241	—

*p < 0.01, p < 0.05, p < 0.1

CONCLUSION AND RECOMMENDATIONS

From 2000 to 2023, this study examined the ways in which institutional quality influences the connection between financial development and economic growth in emerging and middle-income nations. Through modern panel econometric methodologies that take cross-sectional relationship, cointegration, and heterogeneity into account, this work empirically exhibits a long-run equilibrium connection among the variables. The evidence suggests that institutional quality and financial deepening combined play an important positive role in generating economic growth. Furthermore, the interaction effect suggests that institutional strength represents a condition for financial deepening in order to produce growth progress. Especially because while weak governance structures rob the benefits from finance deepening significantly, good institutions reinforce the capability of finance in allocating resources towards prosperous and new ventures.

Such findings from studies have important policy implications. First, the foundation for plans for sustainable development must be a cultural transformation. The stable environment conducive to successful activities in the financial market is brought about through enhancing the rule of law, quality of regulations, and control of corruption. Second, policies in the financial sector should be carried out in harmony with institutional development so that responsibility and transparency have effects that spill over into the allocation of credit, capital market deepening, and operations in financial inclusion. Third, stable macroeconomic environment conducive to institutional and financial development includes prudent budgeting and control of inflation. Adoption of global best practices in the area of risk management, financial governance, and information technology infrastructure can be eased through partnerships with the international financial institutions.

Sustainable economic growth in developing and middle-income economies relies on the synergetic development of institutional and financial systems. Institutional quality is the determining transmission mechanism, which determines the effectiveness with which the financial development becomes sustainable prosperity. Future research could supplement the above model with the addition of the variables such as digital finances, inclusive finances, and environmental dimensions and investigate the interaction of the newest innovations in the sphere of finances with the institutional environment so that sustainable and equitable growth can be achieved.

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