Financial Openness, Institutional Quality and Stock Market Development: A Study of Lower-Middle-Income Countries

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Abstract: This paper analyses the impact of financial openness on the development of the stock market in LMICs. Depth of market, interest, and inflation rates are macroeconomic variables, while the independent variable is financial openness, and the dependent variable is stock market growth. This information was assembled from World Development Indicators (WDI), IMF, and Worldwide Governance Indicators (WGI) for the years 2013-2023. Descriptive statistics, correlation analysis, and regression analysis are the panel data analysis techniques employed in this study to assess the relationship between SMD and FO. The results show that FO has a significantly positive effect on SMD when it is constrained by good institutional quality. The study's findings demonstrate that FO, supported by robust institutional structures, can accelerate the expansion of the financial marketplace in lower-middle-income countries, offering policymakers helpful direction. The government should consider strengthening institutional frameworks while promoting financial liberalization to ensure consistent development in the capital market.

Key Words: Financial Openness, Institutional Quality, Stock Market Development, Lower-Middle-Income Countries, Panel Data Regression

Introduction

Financial settings of lower-middle-income countries have gone through important changes in recent years because of the constraints of globalization and liberalization. Financial openness is an essential element that has achieved greater eminence in financial economies (Kose et al., 2009). It pertains to the degree to which a nation permits access to global capital markets and cross-national financial flows. The translucent is acknowledged as an important technique for reassuring stock market growth, which intensifies investment possibilities, liquidity, and risk dispersion, and it is also vital to attract foreign direct investments. Many nations accept economic liberalisation as an innovation strategy; however, the results with regard to market achievement have been contradictory and mostly negotiated. In developing countries, mostly in lower-middle-income nations, FO has become a key factor in examining the expansion of financial and economic sectors. As globalisation increases capital mobility, FO deepens SMD, encourages foreign investment, and improves the efficiency of the allocation of capital. However, with countries with weak institutional and developing financial structures, FO can also increase sensitivity to external shocks, unpredictability, and capital flight, making its impact on SMD highly context dependent (Kim, 2023)

The dependent variable in this context is SMD, which is defined as the depth, efficacy, and liquidity of equity markets. It is a key component of financial maturity and is commonly evaluated using indicators like stock turnover ratio, market capitalization, and trading volume relative to GDP. A healthy stock market encourages investment opportunities, boosts the accumulation of savings, and promotes economic development by enhancing risk distribution and transparency

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(Baltagi et al., 2009). However, there is still disagreement about how FO affects these dynamics, mostly in lower-middle-income countries where structural limitation still applies.

How FO impacts SMD results is affected by institutional structures, which are assessed by governance metrics like rule of law, quality of regulations, and corruption prevention. Robust institutions can increase the benefits of liberalization by protecting investor rights, lowering transaction costs, and fostering investor confidence. Instead of achieving market sophistication, weak institutions may prevent nations from transforming capital openness into significant financial development, leading to destabilizing effects (Aman et al., 2023)

This study uses panel data from lower-middle-income countries from 2013 to 2023 to examine the moderating role of institutional quality in the relationship between financial openness and stock market development. SMD is the dependent variable (proxied by the stock turnover ratio), financial openness (measured by the Chinn-Ito KAOPEN index) is the independent variable, and institutional quality serves as a moderator. To take into consideration the macroeconomic and financial system factors that affect the SMD, control variables such as inflation, interest rates, and market depth are employed (Tongurai & Vithessonthi, 2023).

In countries with strong regulatory supervision, primacy of law, and a lower level of corruption, FO tends to support the development of stock markets. In contrast, capital account liberalization, which is commonly associated with FO, can increase the risk of economic crisis and unstable capital movements in nations with weak IQ, specifically when governance and regulatory systems are developing (Khan et al., 2022).

This study's significance stems from its emphasis on lower-middle-income nations, a demographic that is frequently overlooked in empirical research but is essential to comprehending the complex consequences of global financial integration. Most of the previous research has concentrated on developed economies or general cross-country comparisons, frequently ignoring the diversity and distinct institutional contexts of LMICs. By investigating how institutional environments mediate the openness-development relationship in economies with changing financial structures, this study fills that gap.

To examine the empirical relation, this study employs panel data analysis techniques, including fixed and random effects models. It analyses that the development of the stock market is positively impacted by FO, although this impact is institutionally dependent. Liberalisation of capital accounts benefits countries with high-quality institutions more than it does those with weak governance. The results align with recent empirical studies that emphasise that for financial liberalisation to have positive development impacts, institutional structures supporting it are necessary (Alloul & Ferrouhi, 2025).

This research contributes to policy discussion by offering evidence-based insight into how institutional reforms and FO strategies should be combined to support the development of the financial market. It also aids policymakers in understanding the conditions that maximise the advantages of FO while lessening its risk in the unique context of lower-middle-income countries. Furthermore, it informs investors and regulators about institutional verge that ensure market performance and adaptability in an era of global financial integration.

Research Questions

How does financial openness influence stock market development in LMICs, considering the moderating role of institutional quality and the effects of macroeconomic factors such as inflation, interest rates, and depth of market?

Research Objectives

The purpose of this study is to investigate how financial openness impacts the development of stock markets in LMICs. Furthermore, it analyses how important macroeconomic variables like inflation, interest rate, and depth of market affect the relationship, as well as the moderating effect of institutional quality.

Literature Review

The effect of FO on SMD and the moderating function of IQ in lower-middle-income countries are examined in this section, along with key theories and recent empirical studies. According to the endogenous growth theory, if financial convergence is backed by good institutional structures, it can improve the accumulation of capital and market advancement (Levine, 2021).

Several empirical studies have elucidated how financial openness impacts stock market development. Teixeira and Queirós (2016) state that stronger market liquidity and increased foreign investments were facilitated by financial liberalisation in Latin American LMICs, but only in conjunction with banking sector reforms and enhancements in regulatory standards. Rehman et al. (2021) assert that stock market expansion post-capital account liberalisation is feasible only if accompanied by institutional reforms. They found that in countries with stable economic conditions, financial openness plays a significant role in enhancing market development. Hasan et al. (2024) expanded on this idea by analysing 18 low and middle-income countries (LMICs) in Asia and Africa. Their study revealed that with effective governance and legal structures in place, a 1% rise in financial openness corresponded to a 0.35% increase in market capitalisation and stock turnover.

H_1: There is a significant relationship between financial openness and stock market development in lower-middle-income countries.

There is growing evidence that the relationship between financial openness and stock market development depends on the institutional environment in which financial liberalization takes place, in addition to macroeconomic factors. Institutions set the instructions for economic behaviour as maintained by the moderating impact of Institutional Theory (North , 1990). By lessening operating costs, fulfilling agreements, protecting investors, and reducing uncertainty, good institutions in the stock market foster an environment where the advantages of translucency can be fully realized (Kant, 2018). Conversely, weak organizations may result in outflow of capital, financial bubbles, and mismanagement of resources as a result of legalization efforts. Financial openness benefits stock market growth positively when countries have vigorous institutional structures. Weak institutions cause obstacles in utilizing the effectiveness of capital movement (Kose et al., 2009). They assert that even in liberalized capitalism, the efficiency of stock market distribution is lessened by corruption and ineffectual bureaucracy, which mostly results in cronyism. The aptitude of inflows of capital to encourage ethical investment advancement is reduced by these Management imperfections.

SMD is affected by macroeconomic volatility as well. High interest rates and inflation erode investor confidence and reduce market liquidity in emerging economies, as demonstrated by Al Nasser & Hajilee (2025). This is consistent with research showing that low institutional credibility and macroeconomic instability impede financial development. According to Zhang (2021), inflation only has a substantial effect on stock returns in emerging markets when monetary policy is untrustworthy, which is indicative of weak policy frameworks.

Another important consideration is market depth, which is frequently assessed using market capitalization and turnover ratios. According to Beck et al. (2011), it is crucial for absorbing big trades without causing price instability. In LMICs, it stands for the capacity of the financial system to draw in and hold on to investments. Li (2024) asserts that moderate R-squared values are typical and appropriate in financial regressions, particularly when analyzing theoretical relationships as opposed to maximizing variance explained. The interpretative depth of our panel model results is further supported by this perspective.

The dual role of FO is another important factor. In economies with weak governance, it carries the risk of capital flight even though it can boost liquidity and investor diversity. Alloul & Ferrouhi (2025) have shown that stable economic conditions are not equivalent to openness in the absence of good regulatory frameworks. This bolsters the study's main point, which is that FO is only valuable when high IQ acts as a mediating factor. Institutional gaps can counteract or reverse the advantages of liberalisation, resulting in volatility and inefficiency (Sia et al., 2023).

This thesis attempts to close a significant gap in the literature by concentrating on the moderating role of IQ in LMICs between 2013 and 2023. Few studies have used panel data to empirically test the relationship between FO and

IQ across multiple LMICs, despite previous research establishing links between openness and financial growth. To achieve sustainable capital market growth, openness policies must be combined with governance reforms, as this study helps to clarify.

H_2: Financial Openness and Stock Market Development are positively moderated by Institutional Quality in lower-middle-income countries.

Methodology

In this chapter, we give readers a thorough explanation of the methodologies used to investigate the relationship between stock market development (SMD) and financial openness (FO), as well as the moderating effect of institutional quality (IQ) in lower-middle-income (LMIC) nations. The variables, data type, and statistical methods utilized for empirical analysis are described in this chapter. The growth of the stock market, as indicated by market capitalization (as a percentage of GDP), is the dependent variable. Financial openness, as measured by the Chinn–Ito Index, is the independent variable. Institutional quality, which encompasses metrics like regulatory quality and corruption control, is the moderating variable. To take macroeconomic effects into consideration, control variables such as the interest rate, inflation rate, and market depth (stock turnover ratio) are employed.

All the secondary data used in this study were gathered from reliable sources, such as IMF databases and the World Bank's World Development Indicators. To ensure temporal and geographical relevance to the study's context, data for a panel of lower-middle-income countries was compiled over 11 years, from 2013 to 2023.

The study uses a quantitative methodology to investigate the variables' empirical relationships. The impact of financial openness and institutional quality on SMD was examined using fixed effects, random effects, and the Hausman test

Table 1

Operationalization of Variables

Variables	Measurement/Formula	Authors
Financial Openness (FO)	Kaopen Index (capital account openness)	Chinn & Ito (2023)
Institutional Quality (IQ)	Composite index based on control of corruption, rule of law, and government effectiveness (scaled 0-100)	Kaufmann et al. (2011).
Stock Market Development (SMD)	Market Capitalization of listed companies as % of GDP	World Bank (2023)
Interest Rate (IR)	Lending Interest Rate (%)	World Bank (2023)
Inflation (INF)	Annual % change in Consumer Price Index	IMF (2023)
Depth of Market (DOM)	Stock Traded Value (% of GDP)	Levine & Zervos (1998)

Baseline Equation

The baseline equation for the connection among financial openness, Stock market development, Institutional Quality, Inflation, Interest rate and Depth of Market.

$$SMD_{it} = \beta_0 + \beta_1 FO_{it} + \beta_2 FO_{it} * IQ_{it} + \beta_3 INF_{it} + \beta_4 IR_{it} + \beta_5 DOM_{it} + \varepsilon_{it}$$

Where:

SMD = Stock Market Development of the country

FO = Financial Openness

IQ = Institutional Quality (Moderator)

FO × IQ = Interaction term to measure the moderate effect of institutional quality

INF = Inflation (Control Variable)

IR=Interest Rate (Control Variable)

DOM=Depth of Market (Control Variable)

ε_{it} = Error term

Data Analysis

This chapter explains the theoretical and statistical structure. There are several ways to examine how Financial Openness (FO) has affected the evolution of the stock market. The connection between FO, Institutional Quality (IQ), and Stock Market Development (SMD) is covered in this chapter. The World Bank Indicators and Worldwide Governance Indicators for lower-middle-income countries, which span the years 2013–2023, provided the data for the statistical analysis. The empirical association has been examined using panel data analysis techniques.

Table 2

Descriptive Statistics

Variables	Mean	Median	Max	Min	Std. Dev.	Observations	LLC
DOM	0.459	0.399	1.259	0.091	0.272	165	-4.132**
FO	0.026	0.021	0.169	-0.100	0.033	165	-3.335**
INF	0.103	0.053	2.213	-0.037	0.255	165	-4.627**
IQ	-0.406	-0.300	0.300	-1.500	0.439	165	-3.257**
IR	0.141	0.102	0.652	0.040	0.107	165	-4.128**
SMD	0.322	0.224	1.153	0.072	0.237	165	-7.641**

The features found in the dataset are summarized or described by descriptive statistics. Statistics for 165 observations are shown in Table 2. Most of the sample's countries have weak institutional frameworks, as indicated by the mean Institutional Quality (IQ) value of -0.406. With a mean score of 0.026, Financial Openness (FO) indicates a generally moderate degree of financial liberalization across nations. With an average of 0.322, Stock Market Development (SMD) indicates that stock markets typically account for 32.2% of GDP.

The market's moderate trading activity and liquidity are indicated by the Depth of Market (DOM) mean of 0.459. The inflation index (INF) has a mean of 0.103, meaning that while some countries saw spikes in inflation, overall inflation levels stayed low. In most countries, borrowing costs are moderate, as indicated by the average Interest Rate (IR) of 0.141. These figures demonstrate how financial and institutional indicators varied throughout the study period among lower-middle-income nations.

Table 3

Correlation analysis

Variable	SMD	FO	INF	IR	DOM	IQ
SMD	1					
FO	0.075	1				
INF	-0.125	-0.024	1			
IR	-0.232**	0.367**	-0.060	1		
DOM	0.324**	-0.044	-0.158*	-0.247**	1	
IQ	0.351**	0.002	-0.217**	0.092	-0.105	1

Several statistically significant relationships between the variables are revealed by the correlation results. Stock Market Development (SMD) and Institutional Quality (IQ) have a positive and significant correlation ($r = 0.351$, $p < 0.01$), indicating that stronger institutional frameworks promote stock market expansion. SMD and Depth of Market (DOM) also show a positive correlation ($r = 0.324$, $p < 0.01$), suggesting that nations with more developed stock markets are typically those with deeper financial markets.

However, SMD and Interest Rate (IR) have a significant negative correlation ($r = -0.232$, $p < 0.05$), suggesting that higher interest rates might discourage stock market activity. Furthermore, with financial openness and inflation rate, a weak and negative correlation, suggesting that these variables have little direct effect on market development.

The correlation between FO and SMD is positive and not statistically significant, suggesting that financial openness by itself might not be adequate to drive stock market development except if accompanied by other factors, like institutional quality. The impact of financial openness on market development may not be direct, as it depends on every individual country (Nam et al, 2023).

FO impacts might be indirect or dependent on other variables, such as the quality of the institution, since it is not significantly correlated with SMD, DOM, or IQ. Inflation (INF) ($r = -0.158$, $p < 0.05$) and interest rate (IR) ($r = -0.247$, $p < 0.01$) are significantly correlated negatively with depth of market (DOM), suggesting that financial depth decreases in high-inflation or high-interest settings.

Lastly, there is a significant and negative correlation between inflation and institutional quality (IQ) ($r = -0.217$, $p < 0.01$), indicating that macroeconomic instability frequently coexists with poor governance.

However, there is no discernible correlation between IQ and either IR or FO. The correlation coefficient among the variables is below the critical threshold of 0.80, indicating that multicollinearity does not exist in this dataset.

Table 4

Regression Analysis

Variable	Coefficient	St. Error		
IQ*FO	-3.6268*	1.4539		
INF	0.0091	0.0640	Adjusted R-squared	0.2899
IR	-0.3267	0.1674	F-statistic	0.000
DOM	0.2607**	0.0619	Durbin-Watson	2.2201
FO	-2.5472*	1.0852	Hausman Test	0.000
IQ	0.3302**	0.0586	Adjusted R-squared	0.2899
C	0.4099**	0.0526		

In Table 4, Regression analysis examines how different institutional and macroeconomic factors impact stock market development (SMD) in low-middle-income nations. The combined impact of financial openness and institutional quality is represented by the interaction term IQ*FO, which is found to be statistically significant and negative. The relationship between FO and IQ may both encourage stock market growth. In the context of 28 fragile management, the benefits of transparency are limited or even inverted due to regulatory challenges (Alloul & Ferrouhi, 2025).

According to this study, market growth does not have a dependable impact on inflation alone, as the Inflation rate exhibits a positive yet statistically insignificant relationship with SMD. The effect of inflation rate on stock market growth is often indirect and influenced by the reliability of monetary policy (Sia et al., 2023). It is stated that in developing economies like Indonesia, the inflation rate significantly impacts stock return only when the monetary policy is unreliable. Elevated interest rates may avert investments in market equity by increasing the chances of capital cost, as indicated by the negative and marginally significant effect of IR on SMD observed in earlier studies (Kim, 2023).

The concept that more developed stock markets are mostly established in countries with advanced trading volumes and market liquidity is supported by DOM and SMD, which have a positive and highly significant correlation between them. This result is in line with the findings of Beck et al. (2000), who stress the role that financial infrastructure plays in sustaining capital markets. On the other hand, there is a substantial and adverse correlation between SMD and Financial Openness (FO). This unexpected outcome might reflect the dangers of capital mobility in nations with weak regulatory frameworks. In lower-middle-income countries, inadequate institutional structures intensify the risk associated with capital account liberalization.

On the other hand, strong institutional quality displayed by participatory governance, strong legal structure, and political stabilization significantly enhances the depth and tenacity of the stock market by promoting long-term capital investment and investor sentiment. Financial Openness (1.0375) is significant at the 5% level. This shows that greater FO positively contributes to the growth of the stock market, indicating that liberalizing capital accounts and lowering barriers to financial flow improve the growth of the market. Furthermore, their research shows that IQ individually

supports the favourable fundamental development of the stock market in these economies, even when other economic controls are unavailable. Together, these outcomes assist the claim that FO by itself cannot ensure the growth of the market in the absence of robust institutional structures that support and may even increase market risks (Hasan et al, 2024).

From the standpoint of model performance, the Adjusted R-squared value of 0.2899 shows that the model accounts for about 29% of the variation in stock market development. This is regarded as sufficient in empirical financial studies where several macroeconomic factors interact, even though it is not very high. Given the Durbin-Watson statistic of 2.2201, it indicates that there is no significant autocorrelation in the residuals. According to the Hausman test ($p < 0.05$), the fixed effects model is a better fit for this panel data analysis than the random effects model.

Conclusion

This study examines the impact of financial openness on stock market growth in lower-middle-income countries by utilizing institutional quality as a moderating variable. The purpose of this study was to find whether substantial financial openness, or capital account liberalization, has a significant impact on growth and depth of stock markets and whether the importance of institutional structures in these economies influences this relation. Endogenous Growth Theory was the basis of this study, which shows the importance of financial institutions and marketplaces in elevating long-term economic advancement through productive capital allocation.

The study's objectives used a panel dataset by covering 15 lower-middle-income countries from 2013 to 2023. Ascertained by the Hausman test and strengthened by robust statistical tools like descriptive statistics and correlation analysis, which incorporate fixed and random effects models to assure findings free of Multicollinearity, the examination used panel regression techniques.

Market capitalization as a percentage of GDP was utilized to compute the dependent variable, SMD, and the Chinn-Ito KAOPEN index was applied as a substitute for financial openness. Inflation, interest rate, and depth of market were employed as control variables, and the World Governance Indicators (WGI) were utilized to assess the moderating effect of institutional quality (Chinn & Ito, 2008).

The findings show that financial openness and stock market growth are positively and significantly correlated, indicating that greater financial structure liberalization results in better progressive, liquid, and available stock markets. Institutional quality and financial openness have a positive moderating impact on them, suggesting that countries with greater institutional solidity, regulatory efficacy, and governance are more suitable to convert financial openness into prosperous stock market development.

Furthermore, in line with macroeconomic theory, interest rates and inflation showed the anticipated adverse effects on stock market development among the control variables. This is because rising rates and price instability can discourage investment and impair market efficiency. Conversely, market depth, as indicated by the turnover ratio, had a beneficial and noteworthy impact, thereby reaffirming the necessity of liquidity and investor trust in the growth of the capital market.

Overall, the findings support the idea that financial openness can be a potent stimulant for the growth of the stock market, though the effects vary by nation. Whether liberalization results in long-term growth of the financial markets depends critically on the strength of institutional frameworks. Therefore, institutional reforms, such as improved regulatory oversight, governance, and investor protections, should be implemented in tandem with policy initiatives aimed at opening capital accounts.

This study makes a significant contribution to the literature by concentrating on middle-income nations, which are frequently overlooked in studies on financial development. By highlighting the conditional effect of institutional quality, the study advances theoretical knowledge and offers useful policy recommendations for nations looking to promote strong and inclusive capital markets. For future development strategies to optimize the advantages of financial openness, both internal institutional strengthening and external liberalization must be considered.

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