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Institutions, Culture, or Interaction: What Determines the Financial Market Development in Emerging Markets?

Muhammad Asif Khan ^{1,*}, Hossam Haddad ², Mahmoud Odeh ², Ahsanuddin Haider ³
and Mohammed Arshad Khan ^{4,*}

¹ Department of Commerce, Faculty of Management Sciences, University of Kotli, Azad Jammu and Kashmir 11000, Pakistan

² Business Faculty, Zarqa University, Zarqa 11831, Jordan

³ Department of Finance, College of Administrative and Financial Sciences, Saudi Electronic University, Riyadh 11673, Saudi Arabia

⁴ Department of Accountancy, College of Administrative and Financial Sciences, Saudi Electronic University, Riyadh 11673, Saudi Arabia

* Correspondence: khanasif@uokajk.edu.pk (M.A.K.); m.akhan@seu.edu.sa (M.A.K.)

Abstract: In this research, we examine how the quality of institutions promotes financial market development (FMD) in 21 emerging markets (classified by the Financial Times Stock Exchange Group). The moderating role of culture is also empirically tested. For this purpose, a balance panel dataset of 21 emerging markets from 1984 to 2020 is utilized from various secondary data sources. The study applies two-stages least square regression with the instrumental variable, and lag transformation to overcome the endogeneity problem in the nexus of institutions and finance, which is least focused on in prior literature. The empirical findings show that institutional quality and the national culture promote FMD in these economies. The main findings are consistent with law and finance, and financial socialization theories. We argue that academics, policymakers, and researchers should comprehend the critical role of institutional and cultural indicators in forming an effective financial system that may lead to sustainable economic development. This research contributes to the literature on emerging markets in this helpful paradigm. We conclude that quality institutions play a critical role in magnifying the FMD of emerging markets. It is crucial to comprehend the connection between FMD and institutions, as the growth dividend from financial development can be boosted by strengthening institutions and understanding the culture. Our results are robust to alternative measures of institutions and FMD and the correction of potential endogeneity.

Keywords: financial market development; institutional quality; settler mortality; culture; emerging markets



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1. Introduction

Over the past two decades, emerging markets have established themselves as a significant global growth engine, as they have consistently grown faster than the economies of their developed market counterparts. Consequently, investment in emerging markets has the potential to translate investment into significant and diversified benefits for sustainable development. Since 2000 to date, emerging markets have persistently outperformed the world and advanced markets. By October 2018, their G.D.P. growth was 4.1% relative to developed markets' 2.4 and the world's 3.7, respectively [1]. Over the same timeline, the world financial markets have surged, and interestingly, the emerging markets have played a tremendous part in this boom. This unprecedented development, particularly concerning financial markets, has led to a fundamental shift in economic structure and capital flows from developed countries [2].

The role of the financial sector is essential in two ways. One, a sound financial system serves as an incentive for multinational companies to invest in the host country [3,4]. Finan-

cial development enables better credit allocation across firms, thus promoting investment efficiency and productivity growth [5]. The financial product is central to economic development; an efficient and fully functioning financial system leads to economic prosperity. Secondly, the financial sector increases efficiency by effectively allocating scarce economic resources in the process of economic growth [6,7], which on the other hand, reduces the asymmetric information and transaction costs [8]. Therefore, the scope of financial development includes improvements in products and organizations in the banking sector and capital markets.

In the previous passage, we observed the progressive role of financial development in overall economic prosperity, yet these activities are sensitive to regulatory bindings. Institutions guide these activities to avoid the misuse of valuable financial resources. If we believe institutions are the contextual framework within which economic growth thrives or falters, we should view institutional quality as a factor of production due to its contribution to growth and development [9].

Further, much empirical evidence has shown the importance of stable and effective institutions for economic productivity. Institutions form the backbone of economic activity and shape how individuals organize themselves and their financial transactions. Strong institutions are a fundamental driver of both productivity and long-term growth. Their benefits extend well beyond economics, affecting people's well-being daily. The role of institutions is vital in developing economies, and realistic estimation and effective policies are subject to the consideration of the importance of such institutions [10,11]. On the contrary, a weak institutional framework hinders competitiveness and development in many countries [12]. Sound institutions assure transparency, efficiency, and checks and balances the mechanism in effectively executing the corporate governance standards and general business ethics.

The literature on institutions and finance lacks consensus and is exceptionally directed to developed countries and the African region. Studies in the context of emerging markets in this regard are rare. In addition, the role of culture in the financial decision-making process is the least focused [13,14]. Economic decisions affect the financing of all sectors, taking into account the specificities of funding [15].

Culture is essential in explaining the bank's performance [16]. This is possibly due to culture's broader nature and measurement difficulties [17]. Along with institutions, this study attempts to consider this vital aspect of culture in the case of emerging markets regarding its influence on financial development. The quality of the institutions determines the direction of cultural influence on the financial industry. Leading institutions are likely to provide the friendliest environment for optimal utilization of the cultural climate, while weak institutions do otherwise. Sound institutions enforce the rule of law in its true spirit by protecting the financial resources to be optimally used. This empirical finding highlights that the cultural environment is crucial in fostering economic market development in emerging economies.

Drawn on the research gap discussed above and the fundamental role of institutions and culture in influencing the emerging markets financial market and substantial growth, the following research questions are posted:

- Whether institutions are important for financial market development (FMD) in emerging markets?
- Whether studying the culture in an institutional context is relevant in emerging markets?

Derived from the above research questions, the objective of this research is to empirically examine the role of institutions in determining the FMD in 21 emerging markets. Besides this, another objective is to investigate the moderating role of culture in the nexus between institutions and FMD in 21 emerging markets.

To achieve these objectives a balance panel dataset of 21 emerging markets (as classified by the Financial Times Stock Exchange Group (FTSE)), is used for the period from 1984–2020, sources from various secondary data sources. The study applies two-stages least square regression with the instrumental variable approach to overcome the endogeneity

problem in the connection of institutions and finance, which is least focused on in prior literature. The rationale for using 21 emerging markets and the use of two stages least square regression 2SLS approach is contented in the methodology section.

Precisely, the present work contributes to the finance institution's literature in general and emerging market literature in several ways.

First, to the best of our knowledge, this is the first study which considers the role of institutional quality on FMD using the most comprehensive measure of FMD developed by [18,19] in the context of emerging economies. This comprehensive index encompasses the multidimensional financial system drawn on various indicators from financial markets and institutions in terms of financial depth, access, and efficiency; therefore, it overcomes the limitations associated with traditional measures of FMD [18]. Interestingly, the findings are consistent with the literature. Thus, we believe this index represents the multidimensional complex financial system in a true spirit and overcomes the limitations embedded with other traditional measures [10].

Second, another promising contribution of this study is to bring together four practical institutional quality standards from different sources such as the International Country Risk Guide, Quality of Government, World Bank World Governance Indicator, and Global Competitiveness Index by the World Economic Forum. In particular, this connection uses the institutional measurement from the global competitiveness index for the first time. Although the measurement scale is different, the findings are aligned in positively explaining FMD. Policymakers and practitioners need to understand these measurement differences.

Third, we use La Porta et al. [20] settler mortality (STM) as an essential instrument for institutional quality in emerging markets. Because the literature on institutional quality and FMD nexus fails to capture the endogeneity problem with traditional estimation procedures, this negligence often produces spurious estimation due to misspecification and a selection of inappropriate econometric methods as an estimator.

Finally, this study's promising effort is to investigate the extent to which culture moderates the institutional quality to enhance the FMD, as the emerging markets have heterogeneous characteristics, in terms of the cultural, financial, and institutional environment. Stable institutions are not expected to be influenced by culture much, but in the developing stature of emerging markets, it is challenging for regulators and policymakers to inculcate the role of culture in shaping the relationship between institutions and finance. Therefore, the role of institutions in these markets is relatively critical for the optimal utilization of financial resources for growth. This empirical finding highlights that the cultural climate is crucial to foster economic market development. Surprisingly, the interaction of culture with institutional quality negatively explains the FMD in emerging economies. This implies that culture plays a vital role in explaining economic activities [21]. Understanding cultural values lead to understanding the mechanism by which different stakeholders protect the rights of creditors and investors [22,23].

The remaining work is structured as follows. The next section accounts for a brief review of related literature. The third section comes up with the data and methodological foundations. The fourth section discusses empirical results, and the final section concludes the study.

2. Brief Literature and Hypothesis Development

2.1. Institutions and Financial Development

Lawrence and Shadnam [24] institutional theory is a way of looking at the world that posits the social world as mostly being made up of institutions, which are defined as "enduring rules, practices, and structures that establish restrictions on the action." Because they are embedded in the social order and steer the course of social life, institutions are crucial to any account of the social world. The rules of variation are established by these constants. Because deviations from the social order are automatically countered by social regulations, institutions condition behavior by making it expensive to act in a non-conforming way. These safeguards link nonconformity with higher expenses, be they

in the form of higher risks, higher mental burdens, or diminished legitimacy and associated benefits [24].

Understanding the link between institutions and finance is critical because lowering political risks by enhancing political institutions can increase the growth benefits from financial development [25]. Institutions themselves are more important to the financial markets than the economic and monetary outcomes they influence [26]. Sovereign spreads are smaller when there is a high level of democracy and accountability and a low level of political risk, while they are higher when political risk is high and election years are viewed negatively by financial markets [27]. The banking crisis hit emerging nations just as they finished liberalizing their financial systems at the end of the 1980s [28]. The latter emphasizes the significance of the prevailing institutional structure in the financial liberalization process.

Financial development improves economic well-being with the supportive role of the institutional framework (Todorovic et al.) [29]. The effect of the financial product on economic performance is more substantial when the financial system is embedded in a sound institutional framework (Kliestikova et al.) [30]. Ro et al. [31] claim that financial market efficiency and competitiveness are more critical to support economic growth than the size of the financial market. Similarly, Yu et al. [32] highlight two financial functions, financial access and financial efficiency, as critical determinants of financial development with the spillover effect through economic growth. These economic activities are subject to specific rules and regulations within which they are performed. For example, set standards exist to extend credit to a particular firm or individual. One may not extend excessive credit beyond the collateral capacity. Any such violation is strictly noticed and followed by administrative action.

Institutional improvements are essential in promoting economic growth and delivering financial benefits. Political stability is one of the primary prerequisites for FMD [33]. To augment the financial system and quality of institutions, several measures are vital, such as enhancing the rule of law, securing property rights, cracking down on corruption, and reducing uncertainty to uplift investors' confidence. These policy measures seem substantial to the smooth functioning of the financial system in delivering long-run economic benefits [34]. Creating a conducive economic environment results from the institutional approach, where safeguarding property rights, enforcing legal contracts, and price determination by market forces are transparent [35].

Yang [36] contends that democracy promotes financial development, particularly in the banking sector, while this association does not seem obvious for stock market development. Smaoui et al. [37] point out that bureaucratic quality positively relates to bond market development. A cross-country evidence by Becerra et al. [38] reveals the significant role of government capabilities in driving the credit market in countries with low opposition. Anwar and Cooray [39] believe that an improvement in political rights and civil liberties enhances the benefits of financial development through their positive impact on economic growth in South Asia. Andrianova et al. [40] describe the critical role of the government as a political institution in raising large trading monopolies and enabling the emergence of financial systems worldwide. Panel data evidence obtained by Bolgorian [41] shows the positive and significant impact of a high corruption index (low corruption) on market capitalization and traded volume. Jain et al. [42] claim that bribery significantly and negatively influences the financial market of a nation. Highly transparent countries have low transaction costs because they have lower information asymmetry than the most corrupt nations. Sustainable economic development may only be assured when the institutional framework is enhanced [11,30,43].

Kutan et al. [44] document the role of institutional quality in the nexus of financial development and economic growth of 21 Middle East and North African countries. They find that institutions channel the positive impact of economic effect on economic growth. Similarly, a study from Pakistan reveals that institutional quality and stock market development co-moves in the long run [45]. The literature on the institutional impact on

finance is generally classified into two strands. First, it is directed to the role of institutions and financial development in economic growth. See, for example, [34,39,44,46–48]. Whereas for the second, it investigates the institutional determinants of financial development, for example, [2,41,49–52]. Within the second group, some researchers focused on the African region and mainly investigated how corruption influences stock market development [51,53]. Some others emphasize the developed nations, specifically Li et al. [54] infer that creditor rights positively influence the equity market development among a group of 45 developed countries.

Similarly, Law and Azman-Saini [52], with a mixed sample of developed and developing countries, show that institutions positively connect with banking sector development. The authors find that stock market measures are uncorrelated with institutions. Yartey [2] indicates that institutional factors are essential stock market determinants among emerging economies during 1990–2004. In addition, management must consider the principle of growing concern, contributing to sound market judgment [55].

Using panel data from emerging market countries, a study of the importance of political institutions for financial markets reveals that reforms in political institutions, such as stronger protections for democratic rights and more government transparency, have a direct impact on sovereign interest rate spreads [27].

It is important to recognize the conceptual and practical difficulties that emerging market economies encounter when attempting to modify their financial regulation regimes [56]. These countries are attempting to strike a balance between the competing goals of financial stability, financial development, and expanding access to financial services for the general populace [56]. The authors contend that factors in macroeconomic policy and international regulation affect the stability and robustness of the financial sector in emerging nations.

One of the most important factors in emerging markets is the rise of institutions, which may be thought of as rule-following behavior. The premise is that emerging economies can gain from intermediation to enforce the market process, which could help stabilize their financial systems [28]. When a country is on the cusp of economic growth, its leaders need to prioritize the development of its institutions by prioritizing the dissemination of its culture and making efficient use of promoting cultural exchange, and making smart use of available funds, which are two ways to help strengthen institutions in developing nations [57].

Better institutions, including political stability, control of corruption, and regulatory quality, positively affect financial development in developing and emerging countries [58]. The authors find that a weak rule of law has a detrimental impact on economic growth, indicating that most countries worldwide have a very weak rule of law, and most countries have reduced corruption to a low degree, as measured by the control of corruption index, which has a favorable impact on financial development in the emerging and global panel. They also document that emerging economies have lower levels of corruption and suggest that high-quality institutions are a key factor in fostering economic growth [58].

Institutions are shown to be long-term predictors of economic growth in a Westerlund cointegration analysis of the BRICS countries. Countries with developed institutions protect the property rights of their residents, creating an atmosphere where they are free to innovate [59]. Improved institutions and a flourishing financial sector are crucial to the maintenance of economic expansion over the long term [60]. Using World Bank data from 2000–2018, the authors discuss the significance of institutional quality and financial development in green growth across South Asian economies. The results show that institutional strength and financial advancement are key elements in fostering sustainable economic expansion.

The discussion leads to our first hypothesis.

Hypothesis 1 (H1). *Institutional quality seems to impact financial market development in emerging markets positively.*

2.2. Culture and Financial Development

Culture is an essential issue in social sciences. Cultural factors in financial decision-making have received less attention from academics in finance than from their counterparts in other areas of business and economics [13]. Individuals' personalities are shaped through their interactions with others, and George Herbert Mead's [61] theory of social behaviorism attempts to explain this process. Mead's main idea is the concept of the self, which is the component of a person's character that includes both self-awareness and self-image. Mead argued that the self is not present at birth but must be cultivated through interaction with others. Socialization theories content that individuals and groups behave according to the social norms and attributes they learn through brought-up stages. The financial socialization theory holds that financial decision-making is guided by the cultural values and norms of that society/country.

Cross-national variations in the monetary system structure can be partially explained by culturally based social preferences regarding the avoidance of uncertainty, as national culture is an excellent predictor of financial systems so long as governments are restrained and therefore credibly promise not to interfere with the operation of banks and markets. Social preferences based on culture towards the avoidance of uncertainty contribute to explaining cross-national variances in financial system structure [62].

The role of culture in the financial decision-making process is the least focused [13]. This is possibly due to culture's broader nature and measurement difficulties [17]. Understanding a country's cultural values helps to understand how the rights of creditors and investors are protected [23,63]. There is no universally accepted model for the structure of a country's financial sector [14]. The authors believe that the stock markets play a central role in the financial systems of Anglophone countries such as the United States and the United Kingdom, whereas banks are more important in the financial systems of continental Europe and Japan. When comparing countries, why do some have more advanced financial infrastructures than others? The influence of national culture is substantial. Specifically, we find that countries with a higher propensity to avoid uncertainty are more likely to rely on a banking system. Alongside political and economic factors, culture plays an essential role in explaining financial activities; the Hofstede's uncertainty avoidance, a measure of culture, is strongly related to financial development [21]. Culture influences financial decisions through its impact on managers and institutions. Individualism positively contributes to financial decisions, whereas uncertainty avoidance does otherwise [50]. Cultural beliefs and the cost of enforcing financial contracts seem to have limited control over hampering economic development [64]. The financial activities among countries differ due to cultural differences; the countries characterized by high uncertainty avoidance index rely on bank-based development relative to stock market led [65]. Cultural values explain variation in financial activities (cash-holding), individualism negatively explains cash-holding, while uncertainty avoidance positively drives cash-holding [66]. Li, Griffin, Yue and Zhao [50] stress that culture matters even in a highly globalized world with sophisticated managers. Despite the strict regulatory supervision of European banks, there is evidence of an economically significant relationship between cultural values and domestic banking risks [67]. Specifically, the cultural dimensions influence banking performance during the crisis [16,68]. De Beckker et al. [69] attribute that culture influences the financial markets through financial literacy. The authors find that uncertainty avoidance negatively explains financial literacy while individualism does otherwise; whereas, Qianqian Du is of the view that culture brings the information asymmetry that affect the financial markets [70]. Koch et al. [71] indicate that British medium-sized companies are more receptive to employing public equity as a source of financing than their German counterparts. The authors reveal

that national culture influences not just the decision to go public, but also uncertainty avoidance and long-term orientation.

The results of cultural influence on finance-related activities are mixed, and we find that cultural values are fundamental in explaining finance-related actions. Therefore, we propose Hypotheses 2 and 3 to test the impact of Hofstede's cultural dimensions on the FMD of emerging countries.

Hypothesis 2 (H2). *An amiable cultural environment fosters financial market development in emerging economies, whereas, uncondusive culture decreases financial market development.*

Hypothesis 3 (H3). *The interaction of a friendly cultural environment gears up the financial market development in emerging economies when institutional policies are consistent with the cultural background.*

3. Data and methodology

3.1. Data and Variables

Based upon the FTSE emerging markets country classification review in September 2017, our panel comprised 21 emerging markets using the dataset for the period of 37 years (1984–2020). The latest classification by FTSE has reclassified some of the earlier emerging markets as developed (Poland), frontiers (Peru), and unclassified (Russia), and also some new markets are included in the 2022 version (Iceland, Taiwan, Kuwait, Romania, Saudi, Arabia, and the United Arab Emirates). It is irrational to estimate newly included emerging markets as they were not part of this cadre earlier. Thus, to be consistent, with respect to the classification cadre, we retain the 2017 classification of 21 emerging markets for analysis (a list of emerging markets is provided in Appendix A). The dependent variable of FMD is from the International Monetary Fund, and the explanatory variable of institutional quality is sourced from Quality of Government (IQ_QoG, panel-A) following the literature [44,72]. This measure consists of (i) bureaucracy quality, (ii) corruption, and (iii) law and order. The index ranges from 0–1. The higher score shows superior institutional performance during low vice versa. The other measures used for robustness are obtained from International Country Risk Guide (IQ_ICRG) panel-B 1984 to 2020, World Governance Indicators (IQ_WGI) panel-B 1996 to 2020, and Global competitiveness index by World Economic Forum (IQ_GCI) panel-C 2006 to 2020. We follow Levchenko [73] and Law and Azman-Saini [52] to generate these indices, as they argue that the individual components have high intercorrelations. Therefore, the averaging mechanism provides a comprehensive index that represents the similar attributes of these indicators [49,74]. The second measure IQ_ICRG is a bundle of five arrows; three are common in IQ_QoG and IQ_ICRG, other two include democratic accountability and government stability. The third measure, IQ_WGI, is an aggregation of (i) voice and accountability, (ii) political stability, (iii) regulatory quality, (iv) the rule of law, (v) corruption, and (vi) government effectiveness. These indicators are scaled between –2.5 to 2.5. A low score indicates a worse institutional framework, and a high score denotes stable institutions. The fourth measure of IQ_GCI is scaled from 1–7. A high score is a sign of sound institutions, and a low score indicates the worst.

National culture came from Hofstede's Insight, an average value of six dimensions: (i) power distance, (ii) individualism, (iii) masculinity, (iv) uncertainty avoidance, (v) long-term orientation, and (vi) indulgence. To be consistent with the strand of literature, we include economic growth, trade openness, inflation, exchange rate, interest rate spread, foreign direct investment, economic freedom, and foreign portfolio investment as controls over FMD [52,74–76]. Except for economic independence, data for the rest of all rules are collected from the World Bank development indicators and financial freedom from the Quality of Government. A description of the main variables is provided in Table 1.

Table 1. Definition of primary variables.

Variable	Definition
Financial Market Development	Financial market development involves improvements in functions provided by the economic systems in terms of depth, access, and efficiency [18].
Institutional Quality	Institutional quality means the quality of contract enforcement, property rights, and shareholder protection. Institutional quality is a broad concept that captures law, individual rights, and high-quality government regulation and services to safeguard the interests of all stakeholders [9,12].
Economic Growth	The annual growth rate of G.D.P. at market prices is based on constant local currency.
Trade Openness	Trade openness is the ratio of the sum of imports and exports to the G.D.P.
Inflation	As measured by the consumer price index, inflation reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services every year.
Economic Freedom	Economic freedom is the ability of members of a society to undertake financial actions without intervention from a government or monetary authority.
Foreign Direct Investment	The ratio of foreign direct investment to G.D.P.
Interest Rate Spread	The net difference between the interest generated and interest paid.
Exchange Rate	The real effective exchange rate is the measure of a currency against a weighted average basket of foreign currencies divided by the price deflator or index of cost.
Foreign Portfolio Investment	Foreign portfolio investment covers the transactions in equity and debt securities.
National Culture	A combination of norms, behaviors, beliefs, and customs characterizes a nation's population. Hofstede [77] defines culture as "the collective programming of the mind distinguishing the members of one group or category of people from others." Hofstede's six cultural dimensions include power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence.
Settler mortality	Log of European settler mortality [78].

3.2. Methodology

To examine how the quality of institutions stimulates the FMD in 21 emerging markets, we first estimate ordinary least square (O.L.S.) regressions as the baseline model using the following equation for all estimators:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 K_{it} + u_{it} \quad (1)$$

In Equation (1), Y is FMD is the dependent variable. X_{it} is the explanatory variable of institutional quality, and K is the matrix of the controls over Y , such as economic growth, trade openness, inflation, exchange rate, interest rate spread, foreign direct investment, financial freedom, and foreign portfolio investment. Where i denotes the reference countries, and t represents reference years, the estimation under Equation (1) may suffer from three potential problems. First is the correlation of institutional quality with the error term. Second is the expected correlation of the dependent variable, FMD with institutional quality, and third is omitted variable bias. These issues generate the endogeneity problem, which makes the estimation unreliable and biased. We use 2SLS with the instrumental variable approach to deal with this problem. This approach works with an instrumental variable that should have two characteristics: (i) it should significantly influence the explanatory variable, and (ii) it should not explain the dependent variable.

Aligned with previous literature, we use La Porta, Lopez-de-Silanes, Shleifer and Vishny [20] STM as an instrument for institutional quality. It measures the effects of local diseases on people without inherited or acquired immunities. Acemoglu, Johnson, and Robinson [78] use the mortality rates of colonial settlers as an instrument for institutional quality in colonized areas. They argue that where colonizers encountered relatively few health hazards, they erected stable institutions to protect property rights and establish the rule of law. In other areas, they concentrated on extracting resources quickly and left behind relatively weak institutions. This instrument is considerably used in prior studies [79–83]. Therefore, we use a log of historical STM in Acemoglu, Johnson, and Robinson [78] as an instrument for institutional quality. STM sounds like a valid instrument because it potentially influences the institutional quality rather than FMD (the results are discussed in Section 4).

3.3. Robustness Testing

We employ two mechanisms for robustness testing using alternative measures of (i) institutional quality and (ii) FMD. The primary model (panel-A) estimates the impact of IQ_QoG on the FMD of a strongly balanced panel of 21 emerging economies from 1984 to 2020. The first robustness analysis considers the alternative measures of institutional quality, such as IQ_ICRG from the International Country Risk Guide—a bundle of five indicators following Law and Azman-Saini [52], in panel-B for the same period and cross-sections as in panel-A. The third measure IQ_WGI in panel-C is an average of six components consistent with Levchenko [73] and Law and Azman-Saini [52] from the world governance dataset published by the World Bank from 1996 to 2017. The fourth measure IQ_GCI in panel-D considers a relatively new and shorter dataset (2006 to date) that is not utilized so far; this comes from the global competitiveness index published by World Bank under World Economic Forum.

The second robustness analysis considers the alternative traditional stock market-based measures of FMD. These measures are widely used in literature; for example, stock market-based measures include the market capitalization ratio, total value traded ratio, and turnover ratio [33,52].

4. Empirical Results

Table 2 reports the descriptive statistical characteristic of all the variables for our sample period. The variables are described as a unit of measurement, data source, mean, minimum, maximum values, and standard deviation, respectively. The observations vary from 252 to 714. The dependent variable, FMD, is rescaled to 100 for a convenient coefficient interpretation. The mean value shows the central value for each series, and the standard deviation indicates the volatility within each series. Overall characteristics of the variables seem sound for further estimation.

Table 2. Descriptive Statistics.

Variable	Source	Unit of Measurement	Observations	Mean	Max.	Min.	Std. Dev.
FMD	IMF	Index rescaled to 100	714	3.483	4.287	−4.344	0.862
FD_MCP	WDI	% of GDP	714	3.737	5.175	1.906	0.739
FD_STO	WDI	% of GDP	714	3.663	5.199	1.627	0.831
FD_STV	WDI	% of GDP	714	2.663	4.556	1.170	0.974
IQ_QoG	QoG	Index (0–1)	714	0.543	0.944	0.111	0.143
IQ_ICRG	ICRG	Index (0–34)	714	16.305	26.125	6.495	3.250
IQWGI	WGI	Index (−2.5–2.5)	462	0.008	1.287	−1.178	0.595
IQ_GCI	WEF	Index (1–7)	252	3.939	6.073	2.927	0.634
EER	BIS	Rate	714	91.519	127.866	41.983	16.460
ECF	QoG	Index	714	6.089	8.230	2.470	1.053
ECG	WDI	% of GDP	714	2.474	11.333	−6.255	3.577
FDI	WDI	% of GDP	714	2.423	9.732	0.130	2.158
INF	WDI	% of GDP	714	13.021	66.094	2.002	17.255
INV	WDI	% of GDP	714	23.109	43.756	12.987	5.919
IRS	WDI	Rate	714	8.845	53.843	1.440	11.560
PFI	WDI	% of GDP	714	−6.815	23.530	−24.331	20.233
TRO	WDI	% of GDP	714	59.448	123.072	12.352	29.835
STM	QoG	Rate	544	4.112	5.136	2.741	0.680

Note: FMD: financial market development, its other alternative measures include: FD_MCP (market capitalization), FD_STO (stock traded turnover), and FD_STV (stock traded value) sequentially. IQ_QoG: institutional quality from the quality of government; IQ_ICRG: institutional quality from international country risk guide; IQ_WGI: institutional quality from world governance indicators; and IQ_GCI: institutional quality from global competitiveness index. EER: exchange rate as to U.S. dollar; ECF: economic freedom; ECG: economic growth; FDI: foreign direct investment; INF: inflation; INV: investment; IRS: interest rate spread; PFI: portfolio investment; TRO: trade openness; and STM: settler mortality rate. The sources include: IMF—international monetary fund; WDI—world development indicators of the World Bank; QoG—quality of government; WEF—world economic forum; BIS—bank of international settlement; and FH—freedom house.

We incorporate the results of the baseline model, O.L.S., in Table 3. Model 1 accounts for the impact of IQ_QoG on the FMD of 21 emerging economies. Model 2–4 measures the impact of alternative institutional quality standards on economic growth. The results in all models confirm that institutional quality positively drives FMD in emerging economies. This inference encourages a further in-depth investigation using a sophisticated approach. Therefore, we use an instrumental variable system under the framework of 2SLS; the results are reported and discussed in the facing section.

Table 3. Intuitional quality and FMD—O.L.S. result.

Variables	Dependent Variable: FMD			
	Panel-A	Panel-B	Panel-C	Panel-D
	IQ_QoG	IQ_ICRG	IQ_WGI	IQ_GCI
	(1)	(2)	(3)	(4)
IQ	0.830 *** (3.90)	0.046 *** (4.80)	0.192 *** (7.28)	0.146 *** (5.68)
FDI	−0.005 (−0.31)	−0.008 (−0.55)	−0.022 *** (−3.80)	−0.009 (−1.35)
INV	−0.017 *** (−3.49)	−0.017 *** (−3.33)	0.009 *** (4.18)	0.009 *** (3.28)
I.N.F.	−0.018 *** (−7.67)	−0.017 *** (−7.55)	−0.003 ** (−2.29)	−0.015 *** (−3.40)
PFI	0.001 (0.95)	0.002 (1.37)	0.000 (0.70)	0.000 (0.69)
IRS	0.006 ** (1.98)	0.006 * (1.96)	0.004 ** (2.17)	0.008 *** (3.18)
EER	0.004 ** (2.46)	0.005 *** (2.80)	0.003 *** (3.03)	−0.005 *** (−2.97)
ECCG	0.046 *** (5.67)	0.046 *** (5.76)	0.000 (0.10)	−0.005 (−0.95)
TRO	0.001 (0.97)	0.001 (1.03)	0.002 *** (3.71)	0.003 *** (5.26)
ECF	0.145 *** (4.20)	0.118 *** (3.33)	0.005 (0.22)	−0.127 *** (−3.44)
Constant	2.169 *** (7.54)	1.951 *** (6.58)	3.116 *** (17.62)	4.270 *** (14.09)
Observations	714	714	462	252
Adj. R-squared	0.292	0.300	0.281	0.308
F-statistics	30.36	31.46	18.94	12.11

Note: This table reports the ordinary least square results of the impact of alternative measures of institutional quality on the FMD of 21 emerging economies. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. All variables are defined in Table 1. At the same time, the abbreviations are explained in the caption of Table 2.

Table 4 shows the 2SLS results of the impact of IQ_QoG on FMD when STM is used as an instrument. First-stage regression in model 1 reveals that one unit variation in STM adversely influences the institutional quality by 0.056. Model 2 examines the impact of IQ_QoG on FMD when STM is used as an instrument. We find that IQ_QoG positively stimulates economic market development in emerging economies. We consider several controls over FMD to overcome the omitted variable bias, and the results show that most rules are significantly associated with economic growth. To test the validity of the instrumental regression approach, we perform endogeneity testing using Durbin and Wu-Hausman statistics. The null hypothesis assumes that variables are exogenous. This hypothesis is tested against the corresponding *p*-value of Durbin and Wu-Hausman's statistics. We reject the null hypothesis when the *p*-value is statistically significant, as in our case. Thus, we accept the alternative hypothesis that variables are endogenous. Further post-testing in Eigen statistics denotes the strength of the instrument used for institutional quality. The null hypothesis assumes that the tool is weak, which is tested on the bases

of critical values. We find that the null hypothesis is rejected based upon the criterion (calculated Eigenvalue > critical values) that assures the instrument's strength. Thus, the empirical findings support the choice of instrumental regression as an estimator and make the results satisfactory.

Table 4. Impact of institutional quality on FMD—2SLS results.

Variables	Panel-A	
	First Stage	Second Stage
	IQ_QoG	FD
	(1)	(2)
Instrument	−066 *** (−7.14)	
I.Q. (instrumented)		2.509 *** (6.377)
FDI	0.009 *** (3.01)	−0.748 * (−1.90)
INV	0.005 *** (4.99)	0.184 * (1.66)
INF	0.003 *** (6.80)	−0.659 *** (−7.21)
PFI	0.000 * (1.87)	−0.041 (−1.23)
I.R.S.	−0.001 ** (−2.44)	0.511 *** (6.33)
EER	0.001 * (1.95)	−0.107 ** (−2.03)
ECC	0.004 ** (2.39)	−0.230 (−1.01)
TRO	−0.000 (−0.07)	0.173 *** (6.68)
ECF	0.035 *** (5.49)	0.515 (0.48)
Constant	0.335 *** (4.74)	2.104 *** (10.56)
Fixed effects	yes	yes
Observations	544	544
Adj. R-squared	0.342	0.430
F-statistics	20.60	
Durbin		28.26[0.000]
Wu-Hausman		27.12[0.000]
Eigenvalue statistic		52.35

Note: This table shows institutional quality (IQ_QoG) on financial development. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. Numbers in quads are *p*-values corresponding to Durbin and Wu-Hausman tests. Panel-A, the main model, shows the first and second-stage regression results of the impact of institutional quality (IQ_QoG) on financial development.

As discussed in Section 3, we perform one of the robustness with the impact of alternative measures of institutional quality on financial development. In the first part of robustness, three alternative actions are considered in three panels; the results are corroborated in Table 5. Like the primary model, each panel is systematically estimated in terms of first and second-stage regression. The statistically significant and positive coefficient of institutional quality contends that the quality of institutions in emerging economies enhances financial market development (H1).

Table 5. Robustness with alternative measures of institutional quality—2SLS results.

Variables	Panel-B		Panel-C		Panel-D	
	First Stage	Second Stage	First Stage	Second Stage	First Stage	Second Stage
	IQ_ICRG	FD	IQ_WGI	FD	IQ_GCI	FD
	(1)	(2)	(3)	(4)	(5)	(6)
Instrument	−1.505 *** (−7.46)		−0.289 *** (−7.52)		−0.422 *** (−7.64)	
I.Q. (instrumented)		0.108 *** (6.588)		0.647 *** (9.837)		0.377 *** (6.348)
FDI	0.211 *** (3.31)	−0.790 ** (−2.11)	0.080 *** (6.58)	−1.960 *** (−4.29)	0.037 ** (2.01)	−0.185 (−0.53)
INV	0.092 *** (4.38)	0.255 ** (2.49)	0.013 *** (3.03)	0.556 *** (4.97)	0.037 *** (6.23)	0.366 *** (3.36)
INF	0.036 *** (3.43)	−0.503 *** (−7.45)	−0.004 (−1.05)	−0.178 (−1.43)	0.031 *** (3.34)	−1.139 *** (−5.86)
PFI	0.002 (0.34)	−0.004 (−0.13)	0.000 (0.47)	−0.012 (−0.38)	−0.001 (−0.60)	0.013 (0.43)
IRS	−0.018 (−1.44)	0.455 *** (6.32)	0.009 *** (3.67)	0.108 (1.35)	−0.006 (−1.25)	0.648 *** (7.21)
EER	−0.000 (−0.02)	−0.038 (−0.85)	−0.004 ** (−2.13)	0.013 (0.22)	0.003 (1.03)	−0.209 *** (−3.33)
ECG	0.039 (1.03)	−0.006 (−0.03)	−0.019 ** (−2.28)	0.173 (0.63)	−0.011 (−0.88)	−0.393 (−1.55)
TRO	−0.004 (−0.81)	0.186 *** (7.68)	0.003 *** (3.97)	0.157 *** (5.17)	0.005 *** (3.84)	0.226 *** (8.08)
ECF	1.122 *** (8.02)	−0.787 (−0.66)	0.355 *** (8.84)	−9.680 *** (−4.91)	0.295 *** (3.90)	−10.799 *** (−6.39)
Constant	12.133 *** (7.86)	1.533 *** (7.253)	−1.575 *** (−4.36)	5.807 *** (20.11)	1.973 *** (3.14)	4.266 *** (14.29)
Fixed effects	yes	yes	yes	yes	yes	yes
Observations	544	544	352	352	192	192
Adj. R-squared	0.326	0.466	0.576	0.654	0.535	0.672
F-statistics	22.29		39.64		18.80	
Durbin		26.32[0.000]		10.63[0.001]		1.31[0.252]
Wu-Hausman		25.14[0.000]		9.76[0.002]		1.22[0.271]
Eigenvalue statistic		58.29		56.54		55.35

Note: This table shows the robustness of the impact of alternative measures of institutional quality on FMD. Robust t-statistics are in parenthesis. **, and *** indicate level of significance at 5% and 1%, respectively. Numbers in quads are *p*-values corresponding to Durbin and Wu-Hausman tests. Like the main estimator (panel-A), panel-B to panel-D, respectively, capture the first and second stage estimation of the impact of IQ_ICRG, IQ_WGI, and IQ_GCI on FMD. Institutional quality is instrumented by the settler mortality rate.

The second robustness considers the impact of institutional quality (panel-A to D) on alternative measures of financial development. For this purpose, the study contemplates three bank-based measures of FMD and three stock market-based measures. Table 6 illustrates the robustness results of the impact of institutional quality on alternative traditional measures of financial development. Model 1–3 captures the effect of institutional quality on stock market-based measures. All these estimators are consistent with the leading results reported in Table 3, except for the last stock market-based measure of FMD (FD_STV), which does not satisfy the endogeneity test. However, it validates the strength of the instrument.

Table 6. Robustness with institutional quality (QoG) on various measures of FMD—2SLS.

Variables	Dependent Variable: FMD		
	Stock Market-Based		
	FD_MCP	FD_STV	FD_STO
	(1)	(2)	(3)
Instrument	−0.066 *** (−7.14)	−0.066 *** (−7.14)	−0.066 *** (−7.14)
IQ_QoG (instrumented)	8.819 *** (6.92)	9.968 *** (5.39)	−2.124 * (−4.14)
FDI	−0.063 ** (−2.24)	−0.144 *** (−3.53)	−0.069 *** (−3.04)
INV	−0.023 *** (−2.91)	0.011 (0.95)	0.042 *** (6.60)
I.N.F.	−0.029 *** (−4.44)	−0.059 *** (−6.26)	−0.012 ** (−2.24)
PFI	−0.006 *** (−2.68)	−0.005 (−1.41)	0.002 (1.22)
IRS	0.009 (1.53)	0.021 ** (2.47)	−0.001 (−0.21)
EER	−0.016 *** (−4.23)	−0.024 *** (−4.44)	−0.005 (−1.59)
E.C.G.	−0.029 * (−1.79)	−0.002 (−0.10)	0.029 ** (2.19)
TRO	0.005 *** (2.90)	0.007 *** (2.67)	0.001 (0.91)
E.C.F.	−0.200 *** (−2.58)	−0.555 *** (−4.94)	−0.290 *** (−4.64)
Constant	2.793 *** (5.33)	3.482 *** (4.58)	5.886 *** (13.89)
Fixed effects	yes	yes	yes
Observations	544	544	544
Adj. R-squared	0.286	0.301	0.304
Durbin	90.27[0.000]	63.21[0.000]	1.51[0.219]
Wu-Hausman	110.36[0.000]	71.76[0.000]	1.36[0.244]
Eigenvalue statistic	52.35	52.35	52.35

Note: This table shows the robustness of the impact of institutional quality (QoG) on the alternative traditional measures of FMD. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. Numbers in quads are *p*-values corresponding to Durbin and Wu-Hausman tests. Institutional quality is instrumented by the settler mortality rate. For brevity, only 2SLS results are reported here.

Table 7 shows the robustness of the impact of institutional quality (ICRG) on the alternative traditional measure of FMD, and results are consistent with that reported in the main analysis, as well as in the above Table.

Table 7. Robustness with institutional quality (ICRG) on various measures of FMD—2SLS.

Variables	Dependent Variable: FMD		
	Stock Market-Based Indicators		
	FD_MCP	FD_STV	FD_STO
	(1)	(2)	(3)
Instrument	−1.505 *** (−7.46)	−1.505 *** (−7.46)	−1.505 *** (−7.46)
IQ_ICRG (Instrumented)	0.387 *** (7.31)	0.437 *** (5.61)	−0.079 * (−1.77)
FDI	−0.067 ** (−2.50)	−0.149 *** (−3.77)	−0.068 *** (−3.01)
INV	−0.016 ** (−2.23)	0.019 * (1.72)	0.041 *** (6.59)
I.N.F.	−0.014 *** (−2.92)	−0.043 *** (−5.98)	−0.015 *** (−3.63)
PFI	−0.003 (−1.30)	−0.001 (−0.28)	0.002 (−0.87)
IRS	0.003 (0.67)	0.015* (1.93)	0 (−0.03)
EER	−0.009 *** (−2.90)	−0.017 *** (−3.53)	−0.006 ** (−2.25)

Table 7. Cont.

Dependent Variable: FMD			
Stock Market-Based Indicators			
Variables	FD_MCP	FD_STV	FD_STO
	(1)	(2)	(3)
ECC	−0.008 (−0.52)	0.022 −0.99	0.024* −1.95
TRO	0.007 *** −3.81	0.009 *** −3.36	0.001 −0.75
E.C.F.	−0.324 *** (−3.79)	−0.695 *** (−5.52)	−0.265 *** (−3.67)
Constant	1.057 * −1.85	1.519 * −1.81	6.241 *** −12.93
Fixed effects	yes	yes	yes
Observations	544	544	544
Adj. R-squared	0.303	0.326	0.319
Durbin	86.30[0.000]	59.83[0.000]	0.09[0.764]
Wu-Hausman	104.33[0.000]	67.32[0.000]	0.08[0.767]
Eigenvalue statistic	55.58	55.58	55.58

Note: This table shows the robustness of the impact of institutional quality (ICRG) on the alternative traditional measure of FMD. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. Numbers in quads are *p*-values corresponding to Durbin and Wu-Hausman tests. Institutional quality is instrumented by the settler mortality rate. For brevity, only 2SLS results are reported here.

Table 8 shows the robustness of the impact of institutional quality (W.G.I.) on the alternative traditional stock market-based measures of FMD. The findings are robust and consistent with that are reported in the main analysis.

Table 8. Robustness with institutional quality (W.G.I.) on various measures of FMD—2SLS.

Dependent Variable: FMD			
Stock Market-Based Indicators			
Variables	FD_MCP	FD_STV	FD_STO
	(4)	(5)	(6)
Instrument	−0.289 *** (−7.52)	−0.289 *** (−7.52)	−0.289 *** (−7.52)
IQ_WGI(Instrumented)	2.128 *** (8.10)	2.469 *** (6.01)	0.069 (0.28)
FDI	−0.148 *** (−5.00)	−0.247 *** (−5.33)	−0.053 * (−1.91)
INV	0.003 (0.47)	0.035 *** (3.05)	0.038 *** (5.57)
INF	0.007 (0.90)	0.002 (0.19)	0.001 (0.16)
PFI	−0.003 * (−1.69)	0.000 (0.13)	0.004 ** (2.26)
I.R.S.	−0.019 *** (−3.65)	−0.022 *** (−2.68)	−0.008 (−1.64)
EER	−0.001 (−0.22)	−0.001 (−0.20)	−0.004 (−1.04)
ECC	0.033 * (1.87)	0.071 ** (2.54)	0.018 (1.08)
TRO	−0.001 (−0.75)	0.003 (0.84)	0.006 *** (3.06)
E.C.F.	−0.501 *** (−3.91)	−1.369 *** (−6.84)	−0.875 *** (−7.25)
Constant	8.047 *** (8.20)	12.065 *** (7.85)	8.621 *** (9.30)
Fixed effects	yes	yes	yes
Observations	352	352	352
Adj. R-squared	0.410	0.441	0.460
Durbin	48.84[0.000]	29.42[0.000]	0.35[0.553]
Wu-Hausman	56.43[0.000]	31.41[0.000]	0.34[0.562]
Eigenvalue statistic	56.54	56.54	56.54

Note: This table shows the robustness of the impact of institutional quality (W.G.I.) on the alternative traditional stock market-based measures of FMD. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. Numbers in quads are *p*-values corresponding to Durbin and Wu-Hausman tests. Institutional quality is instrumented by the settler mortality rate. For brevity, only 2SLS results are reported here.

Table 9 incorporates the robustness of the impact of institutional quality (GCI) on the alternative traditional bank-based and stock market-based measures of financial development. The results are consistent with those reported in the main analysis.

Table 9. Robustness with institutional quality (GCI) on various measures of FMD—2SLS.

Variables	Dependent Variable: FMD					
	Bank-Based			Stock Market-Based		
	FD_BRM	FD_DCB	FD_DCP	FD_MCP	FD_STV	FD_STO
	(1)	(2)	(3)	(4)	(5)	(6)
Instrument	−0.422 *** (−7.64)	−0.422 *** (−7.64)	−0.422 *** (−7.64)	−0.422 *** (−7.64)	−0.422 *** (−7.64)	−0.422 *** (−7.64)
IQ_GCI (Instrumented)	0.697 *** (6.59)	0.793 *** (6.24)	1.013 *** (6.92)	1.262 *** (8.12)	1.743 *** (7.14)	0.354 * (1.94)
FDI	0.022 (1.55)	0.022 (1.24)	−0.000 (−0.02)	−0.046 ** (−2.17)	−0.043 (−1.28)	0.030 (1.21)
INV	0.013 *** (2.74)	0.001 (0.27)	0.018 *** (2.90)	−0.015 ** (−2.17)	0.034 *** (3.24)	0.061 *** (7.76)
INF	−0.010 (−1.22)	−0.040 *** (−4.11)	−0.051 *** (−4.50)	−0.071 *** (−5.92)	−0.054 *** (−2.88)	0.022 (1.57)
PFI	0.001 (0.90)	0.001 (0.83)	0.002 (1.05)	0.001 (0.31)	0.004 (1.49)	0.005 ** (2.16)
IRS	0.019 *** (5.03)	−0.000 (−0.00)	0.012 ** (2.28)	0.014 ** (2.46)	0.031 *** (3.53)	0.017 *** (2.64)
EER	0.007 *** (2.84)	−0.006 * (−1.80)	−0.012 *** (−3.41)	−0.014 *** (−3.68)	−0.010 * (−1.70)	0.007 (1.43)
ECG	0.012 (1.13)	−0.015 (−1.16)	−0.002 (−0.16)	0.018 (1.14)	0.016 (0.65)	−0.008 (−0.44)
TRO	0.007 *** (5.80)	0.005 *** (3.64)	0.006 *** (3.87)	−0.000 (−0.09)	0.007 ** (2.45)	0.008 *** (4.20)
E.C.F.	−0.668 *** (−9.43)	−0.801 *** (−9.41)	−0.444 *** (−4.53)	−0.075 (−0.72)	−1.286 *** (−7.87)	−1.284 *** (−10.51)
Constant	4.369 *** (8.65)	7.013 *** (11.55)	3.615 *** (5.17)	1.747 ** (2.35)	4.772 *** (4.09)	7.828 *** (8.99)
Fixed effects	yes	yes	yes	yes	yes	yes
Observations	192	192	192	192	192	192
Adj. R-squared	0.647	0.629	0.631	0.508	0.565	0.650
Durbin	0.48[0.488]	0.18[0.669]	1.72[0.190]	18.31[0.000]	4.13[0.042]	2.61[0.106]
Wu-Hausman	0.45[0.51]	0.17[0.682]	1.61[0.207]	19.15[0.000]	3.91[0.045]	2.45[0.120]
Eigenvalue statistic	58.41	58.41	58.41	58.41	58.41	58.41

Note: This table shows the robustness of the impact of institutional quality (GCI) on the alternative traditional stock market-based measures of financial development. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. Numbers in quads are p-values corresponding to Durbin and Wu-Hausman tests. Institutional quality is instrumented by the settler mortality rate. For brevity, only 2SLS results are reported here.

Culture and FMD—Moderation Effect

We report the results of the moderation effect of institutional quality and national culture on FMD in Table 10, corresponding to alternative measures of institutional quality, respectively. We systematically estimate the impact of culture on consecutive models. First, we examine the effect of culture on FMD in models 1, 3, 5, and 7 using an alternative measure of institutional quality. In the second step, we plugin the interaction of institutional quality and culture and their efforts in models 2, 4, 6, and 8. The interaction term shows that culture negatively moderates the institutional quality and finance nexus.

Table 10. Impact of the interaction of institutional quality and culture on FMD.

Variables	Dependent Variable: FMD							
	CUL	IQ:QoG*CUL	CUL	IQ:ICRG*CUL	CUL	IQ:WGI*CUL	CUL	IQ:GCI*CUL
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IQ	0.723 *** (3.19)	3.007 ** (2.33)	0.042 *** (3.90)	0.637 *** (3.51)	0.161 *** (5.49)	0.888 *** (5.47)	0.245 *** (8.24)	1.717 *** (7.34)
CUL	0.010 ** (2.11)	0.046 * (1.89)	0.013 *** (2.98)	0.049 *** (4.49)	0.005 *** (2.67)	0.003 *** (4.35)	0.014 *** (6.33)	0.115 *** (7.14)
IQ*CUL		−0.061 ** (0.16)		−0.349 *** (−3.37)		−0.014 *** (−4.55)		−0.028 *** (−6.34)
FDI	−0.012 (−0.74)	−0.012 (−0.75)	−0.012 (−0.78)	−0.014 (−0.88)	−0.024 *** (−3.84)	−0.023 *** (−3.73)	−0.015 ** (−2.20)	−0.016 ** (−2.48)
INV	−0.019 *** (−3.63)	−0.018 *** (−3.53)	−0.018 *** (−3.44)	−0.017 *** (−3.18)	0.008 ** (3.58)	0.006 *** (2.69)	0.006 ** (2.41)	0.003 (1.15)
I.N.F.	−0.018 *** (−7.57)	−0.018 *** (−7.53)	−0.017 *** (−7.37)	−0.017 *** (−7.17)	−0.004 ** (−2.54)	−0.004 *** (−3.17)	−0.010 ** (−2.15)	−0.012 *** (−2.85)
PFI	0.001 (0.69)	0.001 (0.71)	0.001 (0.96)	0.002 (1.01)	0.000 (0.47)	0.000 (0.08)	0.001 (1.20)	0.000 (0.25)
IRS	0.006 * (1.92)	0.006 * (1.92)	0.006 * (1.90)	0.006 * (1.93)	0.004 ** (2.14)	0.002 (1.25)	0.010 *** (4.12)	0.010 *** (4.81)
EER	0.005 *** (2.76)	0.005 *** (2.76)	0.005 *** (2.93)	0.005 *** (2.92)	0.004 *** (3.35)	0.004 *** (3.60)	−0.002 (−1.12)	−0.001 (−0.67)
ECG	0.052 *** (6.03)	0.052 *** (6.02)	0.052 *** (5.99)	0.052 *** (6.03)	0.003 (0.66)	0.001 (0.34)	−0.002 (−0.37)	0.001 (0.17)
TRO	0.001 (0.83)	0.001 (0.79)	0.001 (0.81)	0.001 (0.67)	0.002 *** (3.51)	0.002 *** (3.95)	0.003 *** (4.49)	0.003 *** (5.36)
ECF	0.142 *** (3.98)	0.144 *** (3.86)	0.120 *** (3.29)	0.129 *** (3.41)	0.014 (0.57)	−0.012 (−0.48)	−0.153*** (−4.35)	−0.171*** (−5.23)
Constant	1.707 *** (4.64)	1.842 ** (2.01)	1.656 *** (4.51)	2.641 ** (2.36)	2.763 *** (12.56)	3.140 *** (13.62)	3.093 *** (9.43)	−2.252 ** (−2.51)
Observations	680	680	680	680	440	440	240	240
Adj. R-squared	0.294	0.293	0.299	0.299	0.285	0.316	0.434	0.517
F	26.72	24.46	27.36	25.15	16.88	17.92	17.64	22.29

Note: This table shows the moderation effect of culture and institutional quality on the FMD of emerging markets. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. IQ*CUL is a moderation term that represents the interaction of culture and alternative measures of institutional quality, respectively.

Although 2SLS deals with the endogeneity, another way, however, to address the reverse causality is to take the lag of independent variables. We extended the analysis using one lag of control variables under the 2SLS setting, and the results are reported in Table 11. It shows that all measures of institutional quality foster FMD and these findings are consistent with the main estimation.

Table 11. Robustness with lagged model—2SLS.

Variables	Panel-A	Panel-B	Panel-C	Panel-D
	FD:IQ_QoG	FD:IQ_ICRG	FD:IQ_WGI	FD:IQ_GCI
	(1)	(2)	(3)	(4)
I.Q. (instrumented)	2.850 *** (4.95)	0.118 *** (5.41)	0.615 *** (6.30)	0.325 *** (5.83)
L.FDI	−0.026 ** (−2.23)	−0.025 ** (−2.30)	−0.044 *** (−3.84)	−0.007 (−0.87)
L.INV	0.005 * (1.73)	0.008 *** (2.74)	0.011 *** (4.03)	0.008 *** (2.93)
L.INF	−0.020 *** (−7.18)	−0.015 *** (−7.85)	−0.011 *** (−4.66)	−0.023 *** (−7.30)
L.PFI	−0.001 (−1.26)	−0.000 (−0.28)	−0.000 (−0.56)	0.000 (0.27)
L.I.R.S.	0.014 *** (5.84)	0.012 *** (5.84)	0.002 (1.14)	0.012 *** (6.07)
L.EER	−0.004 *** (−2.75)	−0.002 (−1.26)	−0.002 (−1.29)	−0.008 *** (−5.75)

Table 11. Cont.

Variables	Panel-A	Panel-B	Panel-C	Panel-D
	FD:IQ_QoG	FD:IQ_ICRG	FD:IQ_WGI	FD:IQ_GCI
	(1)	(2)	(3)	(4)
L.ECG	−0.009 (−1.25)	−0.001 (−0.14)	0.009 (1.34)	−0.001 (−0.12)
L.TO	0.004 *** (5.59)	0.005 *** (6.96)	0.003 *** (4.74)	0.004 *** (6.69)
L.EF	0.049 (1.54)	0.014 (0.41)	−0.194 *** (−4.37)	−0.145 *** (−4.51)
Constant	2.046 *** (9.67)	1.474 *** (6.35)	4.969 *** (13.69)	3.914 *** (15.32)
Observations	481	481	338	208
Adj. R-squared	0.0559	0.210	0.264	0.624

Note: This table shows the impact of all measures of institutional quality on FMD using one lag of control variables. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. Other than I.Q. all the variables are transformed to first lag, as shown by L. in this table. For brevity, only second-stage regression results are reported. Other than a lag setting for control variables rest of the specification is the same as was used in the main analysis in panel-A to panel-D.

Aligned with the suggestion of one of the referees, the effect of the global financial crisis of 2008 has been tested as a supplement to the analysis. The effect may be examined by either taking dummy for the 2008 financial crisis, or by separately estimating the relationship of core variables (pre and post) and comparing the results. To examine the effect of the 2008 financial crisis, a dummy variable for the 2008 crisis is included in our model and the results are reported in Table 12. The results show that the 2008 crisis has not changed the relationship between institutional quality and FMD. The effect of the crisis is also tested using pre- and post-comparison of the 2008 financial crisis and the findings are consistent with those of the main results (for brevity, only dummy variable results are reported here).

Table 12. Effect of Financial Crisis on institutional quality and FMD.

Variables	Panel-A	Panel-B	Panel-C	Panel-D
	FD:IQ_QoG	FD:IQ_ICRG	FD:IQ_WGI	FD:IQ_GCI
	(1)	(2)	(3)	(4)
IQQOG (instrumented with STM)	2.768 *** (5.45)	0.115 *** (5.96)	0.615 *** (7.97)	0.323 *** (5.97)
FDI _{t-1}	−0.030 *** (−2.83)	−0.028 *** (−2.94)	−0.042 *** (−4.68)	−0.005 (−0.60)
INV _{t-1}	0.004 (1.49)	0.007 *** (2.58)	0.008 *** (3.61)	0.007 *** (2.78)
INF _{t-1}	−0.018 *** (−7.56)	−0.013 *** (−7.98)	−0.009 *** (−4.82)	−0.023 *** (−7.59)
PFI _{t-1}	−0.000 (−0.50)	0.000 (0.60)	0.001 (0.88)	0.000 (0.47)
IRS _{t-1}	0.013 *** (6.29)	0.011 *** (6.25)	0.003 * (1.67)	0.012 *** (6.29)
EER _{t-1}	−0.005 *** (−3.45)	−0.002 ** (−1.98)	−0.004 *** (−3.79)	−0.009 *** (−6.38)
EG _{t-1}	−0.004 (−0.63)	0.003 (0.64)	0.018 *** (3.21)	0.002 (0.31)
TO	0.005 *** (7.51)	0.005 *** (8.95)	0.004 *** (7.46)	0.005 *** (7.15)
EF _{t-1}	−0.030 (−0.88)	−0.059 * (−1.69)	−0.280 *** (−7.18)	−0.156 *** (−4.97)
Financial Crisis Dummy	0.394 *** (8.11)	0.369 *** (8.79)	0.378 *** (11.55)	0.143 *** (3.55)
Constant	2.058 *** (10.90)	1.501 *** (7.29)	5.172 *** (17.51)	3.791 *** (15.12)
Observations	481	481	338	208
Adj. R-squared	0.245	0.370	0.538	0.644

Note: This table shows the effect of the 2008 financial crisis on the relationship of all measures of institutional quality on FMD using a dummy variable for the financial crisis. Robust t-statistics are in parenthesis. *, **, and *** indicate level of significance at 10%, 5% and 1%, respectively. For brevity, only second-stage regression results are reported which are consistent with the main findings. Other than a lag setting for control variables rest of the specification is the same as was used in the main analysis in panel-A to panel-D.

5. Discussion

The study considers La Porta, Lopez-de-Silanes, Shleifer, and Vishny [20] STM as an instrument for institutional quality in line with Acemoglu, Johnson and Robinson [78], and others who believe that it negatively influences institutional quality. This implies that policymakers need to consider the underlying association of STM with institutions during the policy formulation process. The empirical findings reveal that institution quality promotes FMD in emerging economies. The role of quality institutions is vital in rapidly growing emerging markets and for realistic estimation and policy inputs, policymakers, and researchers to consider the critical role of institutions [10,43]. The institutions that need to be enhanced need to ensure an economy's sustainable development [11,48].

Sustainable economic development may only be assured when the institutional framework is enhanced [11,30,43]. Overall findings are consistent with the strand of literature, for example, Smaoui, Grandes, and Akindele [37] show that bureaucratic quality positively explains the bond market development. Li, Maung, and Wilson [54] report that creditor rights positively influence equity market development. Law and Azman-Saini [52] confirm that in developing countries, institutions positively connect with banking sector development. Along the same lines, Yartey [2] indicates that institutional factors are essential stock market determinants among emerging economies; whereas, Yang [36] contends that democracy promotes financial development, particularly in the banking sector.

These results are consistent with previous literature on the paradigm that quality institutions enhance the FMD by having a check on corruption to prevent financial resources from being misused by officials at various levels [36–38]. The findings across alternative measures of institutional quality under panel-B to panel-D are consistent with the leading results and it is inferred that those alternative measures of institutional quality, in particular IQ_ICRG and IQ_WGI, are robust in explaining FMD in emerging economies. This shows that measures of institutional quality across various databases may be relied upon as found consistent in this study to explain financial markets development.

Interestingly, the overall results support the rationale of using the most comprehensive measure of FMD proposed by Svirydzenka [18]. This comprehensive index encompasses most of the attributes of the multidimensional financial system. The traditional measures lack in this regard and represent only a few attributes of the complex system [18]. Therefore, we suggest considering this measure of FMD as a relatively appropriate choice to overcome the limitation embedded with traditional measures used in the literature.

We find that culture is significant for FMD in emerging economies in accelerating the pace of development when included in the estimation process. The negative coefficient of moderation terms explains FMD negatively, which is consistent with the financial socialization theory. De Becker, De Witte, and Van Campenhout [69] attribute this negative effect of culture to financial literacy. Specifically, Ahunov and Van Hove [84] find that financial literacy is lower in countries with more power distance, while the opposite is true for individualism. It would appear that uncertainty avoidance is negatively associated with financial literacy, although the evidence is weak. Thus, it is imperative to consider the cultural factors to fully understand how this may affect the financial system. Emerging economies can provide an attractive culture to individuals and businesses to cultivate their potential through economic activities. This reveals that considering cultural values in policy matters helps the national culture to contribute to economic development through its interaction with institutions. As affirmed by Kwok and Tadesse [65], the role of culture is significant in shaping the financial system. Emerging markets have become the most attractive segment for multinational corporations and institutional investors due to lucrative opportunities. Paula Koch Koch, Crossan, and Jaworski [71] examine the effect of national culture on financial decision-making and conclude that national culture affects decision-making, specifically the selection of capital structure.

Further, to enlarge the benefits from such inflows, the critical role of culture should be part of the policy formulation process. Friendly culture is a bonus for expanding domestic or foreign investment. The empirical evidence suggests that emerging economies are

passing through a challenging phase, where there is a need to understand the cultural aspects and other indicators. The efficient financial market reduces information asymmetry and transaction costs, which makes them lucrative for financial transactions. High trading volume indicates that the business environment is growing faster, and entrepreneurs do not face financial constraints in launching innovative and technological units.

Emerging markets have undergone substantial reforms and reorganizations over the last few decades. For instance, the banking system, rules, and institutions have all been significantly impacted by the global financial crisis of 2008. Following that catastrophe, many nations restructured their institutions. Our model includes a dummy variable for the 2008 financial crisis to assess the impact of that crisis, and the findings demonstrated that the 2008 financial crisis itself is a significant effect but its implication on the link between institutional quality and the expansion of the financial market is noticeable. This is the case since both the financial markets and institutional improvements in both sectors have undergone significant reforms. The findings gain support from literature, for example, Boubakri, Mirzaei, and Samet [16], that uncertainty avoidance, collectivism, and power distance have a first-order effect on bank performance during the financial crisis. During the period between 2008 and 2014, Farooq and Amin [85] demonstrates that investments of firms headquartered in cultures with high power distance, high individualism, and high pragmatism (high uncertainty avoidance, high masculinity, and high indulgence) are significantly less (more) sensitive to their stock prices than investments of firms headquartered in their counterpart cultures. The impact of culture on managers and institutions influences financial choices. Individualism contributes positively to financial decisions, but uncertainty avoidance has the opposite effect [50]. The influence of cultural attitudes and the difficulty of enforcing financial commitments on economic progress appears to be minimal [64]. This implies that during the financial crisis the role of culture and its dimensions partly determine the direction of effect on the financial system, as the banking sector is relatively well managed compared with the stock market. The findings of this study imply that emerging countries should prioritize enhancing their institutional quality by re-evaluating the rules of law, government efficiency, and citizen participation as institutional variables coupled with considering the pivotal role of culture. Institutions in emerging countries should be strengthened through cultural promotion and efficient use of financial resources, according to these findings.

6. Conclusions and Policy Recommendations

Emerging markets are of great importance due to the rapid transformation of institutional and financial regulations, and it is imperative to study how financial markets' development responds to institutional quality. This article provides a discussion on institutions and their implication to foster FMD across 21 emerging markets. It is found that institutions enhance FMD in emerging markets. This may root in bureaucratic quality, law and order, control over corruption, enforcing property rights, and ensuring the voice and accountability may provide financial benefits to the stakeholders effectively and efficiently where asymmetric information and adverse selection may be minimized.

Understanding the cultural dimensions in this paradigm is vital to be understood and inculcated in policy agenda because it takes various channels to show its implication such as financial literacy, investment, and financial decision-making. Emerging economies can provide an attractive culture to individuals and businesses to cultivate their potential through economic activities. This reveals that considering cultural values in policy matters helps the national culture to contribute to economic development through its interaction with institutions. Culture plays an essential role in explaining financial activities; understanding cultural values leads to understanding the mechanism using different stakeholders' protected rights of creditors and investors. Conducive culture gives confidence to potential investors with a harmonized environment where uncertainty is relatively low. Such an environment opens new investment avenues for investors, which involves the entire financial system growing by speeding up the velocity of economic activities. It is

crucial to comprehend the connection between financial development and institutions, as the growth dividend from financial development can be boosted by strengthening institutions and understanding the culture. We argue that academicians, policymakers, and researchers need to understand the significant role of institutional and cultural dimensions in configuring an effective financial system.

This study is an endeavor to capture the effect of institutional quality and culture on FMD in emerging markets. Extending the analysis to the micro level may illustrate interesting country-specific input for policy agenda because cultural dimensions across each of the markets may not be the same.

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Appendix A. List of Emerging Economies

Brazil	Hungry	Philippines
Chile	India	Poland
China	Indonesia	Qatar
Colombia	Malaysia	Russia
Czech Republic	Mexico	South Africa
Egypt	Pakistan	Thailand
Greece	Peru	Turkey

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