The Nexus between Financial Development and Economic Growth in Pakistan: Role of Foreign Direct Investment and Market Capitalization

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Abstract

This study explores the association of financial development, market capitalization, foreign direct investment, human capital, and economic growth in Pakistan. Utilizing the Autoregressive Distributed Lag (ARDL) model, the analysis draws on data spanning the period from 1995 to 2023. The main objective is to check how financial development influences the economic growth of Pakistan. The outcomes show that market capitalization and foreign direct investment have positive and substantial effects on growth in the long run. Human capital also positively influences the growth of the economy. Pakistan should strengthen capital markets, attract FDI, and invest in human capital to boost growth. Sustainable financial policies are also needed to mitigate long-term adverse effects from rapid financial development. The study results emphasize that policymakers must expand economic growth by reducing regulatory barriers, strengthening capital markets to boost investor confidence, and attracting FDI through robust protections for foreign investors to ensure a high return. Additionally, investment in human capital, particularly through education policies that provide skills and training to the labor force, is essential for sustainable development.

Keywords: *Economic Growth, Financial Development, Market Capitalization, ARDL, Pakistan.*

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Introduction

Financial development is an essential for the growth and overall achievement of any economy. Financial development becomes cause of progress and improvement of financial sector of an economy, encompassing its capacity to foster growth and drive innovation within the economy. This process underscores the sector's critical role in supporting sustainable economic advancement (Asteriou & Trachanas, 2024). The constancy of financial sector of a state is very crucial to achieving real economic goals (Oncel et al., 2024). The importance of the financial field plays a role in manifesting on many functions. Financial markets and financial institutes collect sources and redistribute these resources to investors. Investors and firms invest these resources to generate more finance and this creates more economic departments. The financial

sector pushes the firm's ability to invest sources and create finance (Manigandan et al., 2024; Zhang & Hou, 2014; Nasir et al., 2021). Economic stability and financial stability are the same as the two sides of a coin (Nasir et al., 2023). Financial progress has a crucial role in boosting economic growth of an economy and better allocating the resources of a country. Increase investment and create the employment opportunities (Nasir & Soliman, 2014). Many studies focused on the financial institution design and emphasized their framework (Behera et al., 2024; Zheng et al., 2024). Studies recommended many therapies and rules to report the tasks of financial uncertainty. The main attention forces the financial area to link with other sectors for better resource allocations. The role of financial expansion is integral to complexities of economic growth (Kay, 2018). The affiliation of financial advancement and development was empirically examined long before and after the worldwide financial crisis. For example, (Wang et al., 2021) extended consideration of the finance plays in fostering development and growth. (Wang et al., 2024) explored the connection of financial markets and economic expansion, demonstrating a significant impact. Economic growth is very crucial for a country's development and progress (Sibt-e-Ali et al., 2018; Ali et al., 2022; Asghar et al., 2024).

It describes the rise in goods and services production derived from the many macroeconomic and institutional factors. In Pakistan financial development, market capitalization, FDI, and human capital are key indicators of growth and contribute very much. FD shows the extension of financial institutions and credit facilities for investors and the efficiency of financial markets. Credit facilities promote investments and innovation in the economy and depend on the financial institution's efficiency. Market capitalization shows the total value of market capital traded by public and private level. The external source of capital is foreign investment because technology, human capital, skills, and health facilities are transferred from one country to another country and play a crucial role in productivity. Pakistan is an underdeveloped economy and faces a maximum problem in these indicators due to an unstable political situation weak rules and regulations and scarcity of human capital. A country's sustainable growth reflects its strong financial system and factors of efficiency a developing country needs more focus on financial institutions for more investment opportunities (Cheng et al., 2021; Ishfaq et al., 2024; Iram et al., 2024; Asghar et al., 2024). Financial field has a normative impact on growth in central and high-income states and an adverse impact on low-income states (Havranek & Horvath, 2015). Recent studies emphasized the role of a country's smooth of growth and underscored the varying impact of the financial sector based on this development level. A central argument is that the performance of any sector is more closely tied to its internal efficiency and competence than to the overall level of national development. (Singh et al., 2023) naturally, an effective financial sector shall pay more well to development than a developing economic zone.

Another feature of financial growth is relationship is thought of as non-linearity in the connotation among the indicators. The previously recognized research exploring bonds between investment and progress primarily uses the linear context of investigation but does not interpret for nonlinearity. It is instinctive to debate the suggestion that the financial sector and economic growth not be continually lined. Several studies highlight the nonlinear relationship between finance and development, influenced by factors such as institutional quality, legal frameworks (Durusu et al., 2017; Trinugroho et al., 2021), and the level of economic development (Cong

Nguyena et al., 2019), suggesting that this relationship may vary across different stages of financial growth (Zeraibi et al., 2021; Bader et al., 2008). Financial development and growth has been a central reason in economic research from many years, yet the evidence remains mixed and often overlooks critical nonlinearities and threshold effects. Early studies, such as (Yang, 2019), advocated a straightforward "more finance, more growth" perspective, but subsequent research highlights the complexity of this nexus. For instance, (Asongu, 2013) found that while financial globalization initially boosted financial development, economic growth declined following the 2007–2008 global financial crisis, underscoring the fragility of this relationship. Similarly, (Bhanumurthy & Kumawat, 2020) noted that countries with lower levels of globalization often face environmental challenges and struggle with sustainable growth. (Levine, 2005) emphasized the role of efficient financial systems in channeling savings into productive investments, thereby enhancing resource allocation and driving growth. However, more recent studies, such as (Sahay et al., 2015), suggest that financial development contributes to economic progress only up to a certain threshold, beyond which it may hinder growth. Furthermore, (Law & Sing, 2020) argue that the impact of financial development on growth is contingent on institutional quality and broader economic factors. This study explores the interplay between financial management, foreign investment, market capitalization, and human capital in driving economic growth in Pakistan, highlighting the nuanced dynamics of financial development in emerging economies. Many studies are found to discuss the linkage of FD and economic growth but very rare studies focusing on market capitalizing, economic growth, and financial development. Recent studies specify the individual of growth in panel analysis. The association of these selected variables has not measured with current methodology and current data.

This study proposed in following sections: section 2 is about review of literature, part 3 including data sources and methodology, part 4 explained results and discussion and in 5 is about conclusion and policy implications.

Literature Review

The literature on financial development emphasizes its role in enhancing financial markets and institutions at both domestic and international levels, contributing to efficient economic activities and governance (Guro & Yadev, 2019; Moosa, 2023; Opoku et al., 2019; Solaymani & Montes, 2024; Levine et al., 2000). Some research, such as Demetriades and Law (2006), suggests a positive association between financial development and growth in developing economies, while Zhang et al. (2014) found that financial development boosts investment levels. However, the impact varies by country and income level, with Favara (2003) identifying a weak positive correlation in middle-income economies and Kandil et al. (2017) highlighting significant growth effects in China and India. Lin et al. (2016) stress the importance of financial improvements for sustained growth in China. The concept of a “Finance Curse” (Moosa, 2023) underscores the risks of rapid financialization, which can destabilize economies through excessive deregulation and disproportionate domestic credit allocation (Cushen, 2020). Sector-specific studies, such as Gruic and Schrimpf (2014), show varied impacts of banking sector development on growth, with Nasir et al. (2021) finding that while banking development negatively affects growth across all income levels, stock markets benefit middle-income economies, and bond markets positively influence both middle- and high-income countries. The

insurance sector generally contributes positively to growth. These findings manipulate the importance of considering country-specific financial sector characteristics, efficiency levels, and nonlinear dynamics, along with regime shifts, to comprehensively understand the finance-growth nexus.

The literature on financial development highlights the role of market capitalization as a critical indicator of financial sector growth, reflecting the total value of a firm's or country's market based on outstanding shares and current prices. Mukundi et al. (2013) explored this relationship in Kenya, demonstrating that while economic growth could persist even without significant market capitalization, private credit and bank loans positively influenced growth. Similarly, Sghaier (2023) examined the impact of financial development on Nigeria's economy from 1985 to 2014, finding that both banking sector variables and stock market expansion significantly enhanced economic growth. Cecchetti and Kharroubi (2012) identified an inverted U-shaped relationship between financial sector size and productivity growth across 40 countries, suggesting that excessive financial development can diminish total factor productivity (TFP). Other studies, such as Quaidoo (2011) and Nzomoi and Ikikii (2013), confirmed a positive association between stock market expansion, domestic investment, and GDP growth, while Bayar et al. (2014) established long-term cointegration between economic growth and market capitalization in Turkey. In Kenya, Ngugi et al. (2006) emphasized the role of capital markets in funding investments and improving productivity, echoing King and Levine's (1993) assertion that efficient resource allocation and savings systems are crucial for economic growth.

In Pakistan, however, the financial markets remain underdeveloped, with limited focus on market capitalization compared to foreign direct investment (FDI) and financial development. Hossain (2023) demonstrated the positive impact of financial market improvements on Pakistan's economic growth, while Khan et al. (2019) highlighted the role of financial sector enhancements in boosting production and reducing poverty. Iqbal et al. (2017) pointed out that efficient markets attract both domestic and international investments, yet Pakistan continues to struggle with political instability and regulatory challenges (Khan et al., 2019). Foreign investment, as noted by Despite this, the focus on FDI overshadows the potential of market capitalization as a growth driver. Human capital, another critical determinant of economic growth, remains underdeveloped in Pakistan due to low investment in education and health (Romer, 1990). Chaudhry et al. (2019) underscored the positive impact of human capital enhancement on economic growth, yet significant gaps persist. While extensive research exists on financial development, FDI, and human capital, the role of market capitalization in Pakistan's economic growth remains underexplored, highlighting the need for further investigation.

Source of Data and Methodology

In this we use time series data of economic growth, financial development, market capitalization, foreign direct investment and human capital and collect from World Development Indicator ranges is 1995 to 2023. Unit Root tests ADF and P Peran are used for the stationarity and results shows some variables are on level and some on 1st difference. Unit root test results show the mixed order of integration for this the study use the auto-regressive distributive lag (ARDL) model to analyze the selected model.

The following model is proposed in this study:

EG=f (FD, MC, FDI, HC)
Where,
EG=Economic Growth (Dependent Variable)
FD=Financial Development
MC=Market Capitalization
FDI=Foreign Direct Investment
HC=Human Capital

$$EG_t = \phi_1 + \phi_2 FD_t + \phi_3 MC_t + \phi_4 FDI_t + \phi_5 HC_t + \mu_t$$

In the above equation

In selected model, we mention $\theta_2>0$, $\theta_3>0$, $\theta_4>0$ and $\theta_5>0$. Here we considered economic growth, market capitalization, foreign investment and human capital coefficients like $\theta_2>0$, $\theta_3>0$, $\theta_4>0$ and $\theta_5>0$.

$$\Delta EG_t = \alpha_0 + \sum_{i=1}^{l} a_{1i} \Delta EG_{t-1} + \sum_{i=1}^{p} \alpha_{2i} \Delta FD_{t-i} + \sum_{i=1}^{q} \alpha_{3i} \Delta MC_{t-i} + \sum_{i=1}^{q} \alpha_{4i} \Delta FDI_{t-i} + \sum_{i=1}^{q} \alpha_{5i} \Delta HC_{t-i} + \phi\, EG_{t-1} + \phi_2 FD_{t-2} + \phi_3 MC_{t-3} + \phi_4 FDI_{t-4} + \phi_5 HC_{t-5} + \mu_t$$

Table 1: Variables Description

Variables	Measurement Unit	Symbol	Source	Expected Sign
Economic Growth	GDP (constant 2015 US$)	EG	WDI	
Foreign Direct Investment	FDI, net inflows (% of GDP)	FDI	WDI	+
Market Capitalization	Market capitalization of listed domestic companies (% of GDP)	MC	WDI	+
Financial Development	Financial Development Index	FD	OIC	+
Human Capital	School enrollment, primary (% gross)	HC	WDI	+

Results and Discussions

The descriptive stat explains the complete statistical overview of economic growth, market capitalization, financial development, foreign direct investment, and human capital. The mean values of economic growth are 2.74E+11, financial development 17.224, market capitalization 11.214, foreign direct investment 0.924, and human capital 74.858. The median values of economic growth are 2.61E+11, financial development 16.106, market capitalization 9.807, foreign direct investment 0.690, and human capital 74.196. The maximum values of economic growth are 4.00E+11, financial development is 24.168, market capitalization is

37.859, foreign direct investment is 3.035 and human capital is 88.538. The minimum values of economic growth are 1.63E+11, financial development is 11.960, market capitalization is -11.784, foreign direct investment is 0.309, and human capital is 63.471. The standard deviation values of economic growth are 7.55E+11, financial development is 3.329, market capitalization is 12.784, foreign direct investment is 0.769 and human capital is 7.439. The skewness values of economic growth 0.2000, financial development 0.706, market capitalization 0.366, foreign direct investment 1.781 and human capital are 0.218. The kurtosis values of economic growth are 1.863, financial development 2.358, market capitalization 2.650, foreign direct investment 4.888 and human capital are 2.129. The Jarque Bera values of economic growth are 1.453, financial development 2.410, market capitalization 0.660, foreign direct investment 16.254 and human capital are 0.948.

Table 2: Descriptive Statistics

	EG	FD	MC	FDI	HC
Mean	2.74E+11	17.224	11.214	0.942	74.858
Median	2.61E+11	16.106	9.807	0.690	74.196
Maximum	4.00E+11	24.168	37.859	3.035	88.538
Minimum	1.63E+11	11.960	-11.784	0.309	63.471
Std. Dev.	7.55E+10	3.329	12.784	0.769	7.439
Skewness	0.2000	0.706	0.366	1.781	0.218
Kurtosis	1.863	2.358	2.650	4.888	2.129
Jarque-Bera	1.453	2.410	0.660	16.254	0.948
Probability	0.483	0.299	0.718	0.000	0.622
Sum	6.58E+12	413.394	269.152	22.608	1796.606
Sum Sq. Dev.	1.31E+23	254.892	3759.172	13.601	1273.111

The correlation matrix describes the values of variables **Economic Growth (EG), Financial Development (FD), Market Capitalization (MC), (FDI),** and **(HC)**. **Economic growth** shows a strong positive correlation with human capital with 0.9545 value, indicating that economic growth is closely linked with improvements in human capital. Economic growth (EG) has a discreetly negative relation with FD 0.5474 value and a weak positive correlation with both market capitalization 0.1949 and foreign direct investment **at** 0.2664. Financial development is positively correlated with market capitalization 0.6949 and more strongly with foreign direct investment 0.8243. However, FD has a moderate positive correlation with human capital 0.3532. Market capitalization has a moderately positive correlation with foreign direct investment 0.5641, indicating that as market capitalization grows.

Table 3: Correlation Matrix

	EG	FD	MC	FDI	HC
EG	1				
FD	0.5474	1			
MC	0.1949	0.6949	1		
FDI	0.2664	0.8243	0.5641	1	
HC	0.9545	0.3532	-0.0031	-0.0997	1

The unit root test explains the results of Augmented Dickey-Fuller and Phillips-Perron tests. Economic growth, financial development, market capitalization and human capital become stationary at 1st difference in both test ADF and PP. Foreign direct investment become stationary at level in both tests.

Table 4: Unit Root Test

Variables Names	Augmented Dicky Fuller Test		Phillips Perran Test	
	Level Values	1st Differences Values	Level Values	1st Differences Values
EG	2.090 (0.9998)	-4.294 (0.0020)	2.0666 (0.9998)	-4.2216 (0.0024)
FD	-1.091 (0.7074)	-4.842 (0.0004)	-1.091 (0.7074)	-4.872 (0.0004)
MC	-2.771 (0.0745)	-6.391 (0.0000)	-2.774 (0.0739)	-6.391 (0.0000)
FDI	-3.043 (0.0415)	-3.834 (0.0004)	-1.867 (0.3427)	-3.708 (0.0087)
HC	-0.238 (0.9196)	-2.728 (0.0560)	-0.259 (0.9169)	-5.919 (0.0001)

Bound test use to describe the cointegration within dependent and independent variables. In ARDL model the results of bound test explain that the F value is greater than upper bound values and proves the long run cointegration between the selected variables and in this model.

Table 5: Bound Test Results

Statistics	Values	K
F-statistics	4.52	4
Significance Values	I(0) Bound Values	I(1) Bound Values
10%	2.43	3.55
5%	2.88	4.03
2.5%	3.27	4.46
1%	3.76	5.03

According to the selected model, economic growth is dependent on short-term results demonstrating the independent variable financial development coefficient is 0.002534 which describes an insignificance of relation on economic growth with a 0.1746 p value. Suggest it has a small impact in short time on growth of economic. Market capitalization coefficient value is 1.064350 showing a strong and positive impact on growth with p-value of 0.0008. FDI coefficient value is 0.024116 positive and significant impact on economic growth. Mean that one percent rise in foreign direct investment the EG will be increase at 0.024116 percent. The human capital and the coefficient is 5.494131 and positive significant relation with economic growth. Which mean that a 1 percent increase in human capital the human capital will be increase at 5.494131 percent in short run.

Table 6: Short Run Results

Variable Names	Coefficient	Std. Error	t-Statistic	Prob.
D(FD)	0.002534	0.001821	1.391836	0.1746
D(LMC)	1.064350	0.245369	0.356910	0.0008
D(LFDI)	0.024116	0.008967	2.689394	0.0131
D(LHC)	5.494131	2.590924	2.120529	0.0575
CointEq(-1)	-0.3312	0.1223	-2.7064	0.0140

In the table 7 long run results provides insights the affiliation between dependent and independent variables. The coefficient value of the variables describes the effect of dependent variable on independent variable. In the long period FD coefficient is 0.5121 and p value is 0.0001 statistically significant and positive impact on economic growth. Market capitalization coefficient value is 0.0645 and p value is 0.0000 which show the significant impact on economic growth and this shows that a proportionate change in market capitalization will accrue proportionate change in economic growth at 0.0645 percent. The coefficient value of foreign direct investment is 0.5483 and p value is 0.0109 which has significant and positive association with economic growth. Human capital coefficient is 2.055780 and significantly positively correlated with economic growth with 0.0287 p value. Which describe that a 1 percent increase in human capital the economic growth improves at 2.055780 percent in long run in Pakistan.

Table 7: Long Run Results

Indicator	Coef Value	Std. Error	t-Statistic	Prob.
FD	0.5121	0.1096	4.6687	0.0001
LMC	0.0645	0.0092	6.9812	0.0000
LFDI	0.5483	0.1942	2.8231	0.0109
LHC	2.055780	0.872235	0.356910	0.0287
C	29.518642	1.777295	16.608746	0.0000

The R square value 0.9956 shows that the model describes 99.56 percent variation in dependent variables. This value shows the wonderful goodness of fit of the model. The adjusted R square value is 0.9941 and this shows predictor in the model. The F-statistics value is 118.1920 which is very high and proposes that the whole model is highly significant. Durbin Watson value is 1.8506 and close to two demonstrating that there is no autocorrelation in the model. J.B value shows a 0.4287 value and p value is 0.8070 which describes residuals are normally distributed. The LM test value is 0.1581 and the probability value is 0.8554 representing that no evidence found of model misspecification.

Table 8: Diagnostic Test

Tests	Coefficients	P Values
R^2	0.9956	F.Stat=118.1920
Adj. R^2	0.9941	D.W=1.8506
J.B	0.4287	(0.8070)
LM	0.1581	(0.8554)

Hetero	0.7164	(0.6415)
Ramsey Reset	0.2416	(0.0532)

Note: The values in ( ) are p − values.

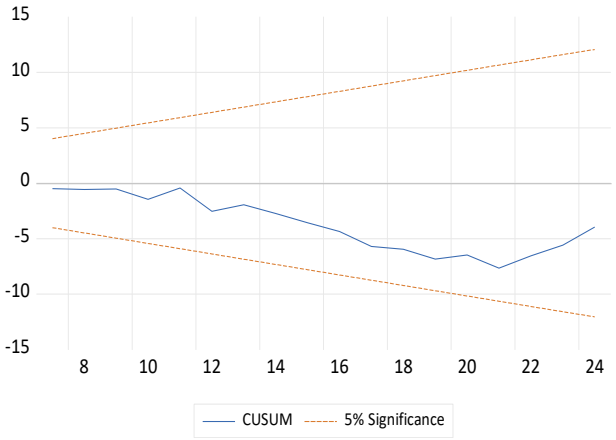

Fig. 1: CUSUM

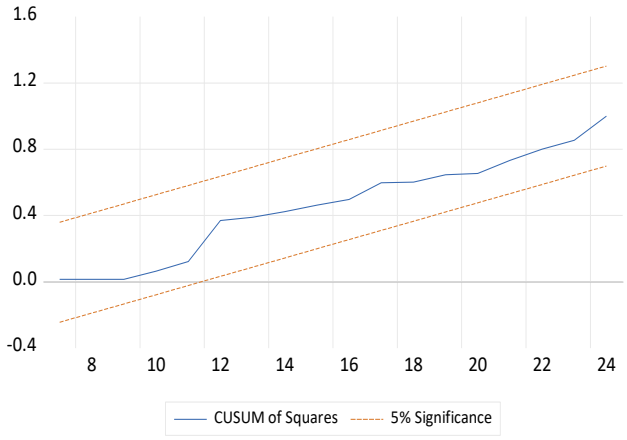

Fig. 2: CUSUMQ

Conclusion

This study investigates the relationship between financial development, market capitalization, foreign direct investment, human capital and economic growth in Pakistan. In this study autoregressive distributive lag (ARDL) model and time series data use the period from 1995 to 2023. This data is collected from the World Development Indicator (WDI). The finding of this study describes that market capitalization support significantly economic growth, and financial development positively impacts economic growth. Human capital and foreign direct investment also positively affected the economic growth. Policymakers and government officials promote market capitalization improve financial markets improve the banking system encourage investments. Invest in education and create skills, focus on skills education, and start training centers. Foreign direct investment positively impacts economic growth, so policymakers should carefully manage and optimize FDI to maximize its benefits.

More specifically, the findings of this study underscore the importance of targeted policies to enhance economic growth in Pakistan. The long-run impact of financial development on growth suggests the need for a more robust regulatory framework to address inefficiencies and manage systemic risks. Strengthening oversight and supervision of financial institutions is crucial to ensure transparency and reduce credit risks. Policies should encourage financial institutions to prioritize lending for productive sectors such as manufacturing, agriculture, and technology, which have a higher potential to drive economic growth. Additionally, implementing nationwide financial literacy programs would improve public understanding of financial products, thereby reducing market inefficiencies and fostering a more stable financial environment.

Market capitalization, which positively influences growth, highlights the need to develop and expand capital markets in Pakistan. Efforts should focus on fostering a vibrant stock market

by reducing barriers to public listings and enhancing investor protection laws to build confidence among domestic and international investors. Offering tax incentives for companies to list on stock exchanges and for individuals to invest in capital markets can further stimulate growth. Additionally, introducing innovative financial products such as green bonds and Islamic finance instruments would diversify market offerings and attract a broader range of investors.

Foreign direct investment (FDI) also plays a critical role in promoting economic growth by providing capital, technology transfer, and employment opportunities. To attract FDI, Pakistan must create an investor-friendly environment by simplifying bureaucratic processes, enhancing property rights, and reducing regulatory barriers. Establishing Special Economic Zones (SEZs) with targeted incentives such as tax holidays and infrastructure support can attract sector-specific investments. Strengthening bilateral trade and investment agreements with key foreign partners will also help attract strategic investments in high-growth sectors such as technology, energy, and logistics, while policies that encourage collaboration between foreign investors and local firms can enhance technology transfer and innovation.

Human capital, which significantly contributes to economic growth, requires increased investment in education and skills development, especially in science, technology, engineering, and mathematics (STEM) fields. Expanding vocational and technical training programs aligned with market demands will help reduce the skills mismatch in the labor market. Encouraging research and development (R&D) through grants and tax incentives can further enhance innovation and productivity. Public-private partnerships (PPPs) can play a critical role in improving access to quality education and training, ensuring that human capital development aligns with the country's economic growth objectives.

Finally, adopting sustainable financial policies is essential to balance financial development with economic stability. Policymakers should focus on promoting sustainable credit growth, reducing reliance on a few economic sectors, and encouraging diversification into emerging industries such as renewable energy, digital technology, and export-oriented manufacturing. Strengthening institutional quality through improved governance, reduced corruption, and enhanced rules and regulations will create a conducive environment for economic growth and foreign investment. Leveraging digital financial technologies (fintech) can also improve financial inclusion and increase access to credit, particularly for small and medium enterprises (SMEs), further boosting economic growth. By implementing these strategies, Pakistan can effectively harness the positive impacts of market capitalization, FDI, and human capital while mitigating the adverse effects of financial development, thereby achieving sustainable and inclusive economic growth.

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