IMPACT OF BANKING, INSURANCE, AND STOCK MARKET DEVELOPMENT ON ECONOMIC GROWTH: A CASE STUDY OF PAKISTAN

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Abstract
This study aims to analyze the impact of Banking sector, Stock Market and Insurance sector on economic growth of Pakistan This study uses time series data from 2000 to 2024, sourced from the State Bank of Pakistan, the Economic Survey of Pakistan, the World Bank, and the Pakistan Bureau of Statistics (PBS). The study employs bound cointegration test and ARDL model to investigate the long run relationship among the variables. The results confirm a stable long-run equilibrium relationship, indicating that approximately 45.2% of the short-term disequilibrium in GDP per capita is corrected each period, restoring balance among banking sector development, stock market development, and insurance sector development. The results indicate that Banking sector credit, stock market capitalization, and insurance premium volume all show a positive and statistically significant impact on GDP per capita. This study recommends adopting those measures that lower the cost of doing business in Pakistan in order to encourage investment. The results show that if a country implements both short and long-term measures to support expansion of its financial sector, it may boost economic growth.

Keywords: Banking Sector Development, Stock Market Development, Insurance Sector Development, Economic Growth, PSX, ARDL, ECM.

Introduction

Comprehending the factors that propel a country's economic progress has consistently been a primary concern for experts, politicians, and governments. Gross Domestic Product (GDP) is a prevalent metric for assessing economic performance, representing the aggregate value of goods and services generated within an economy (World Bank, 2023). However, beyond the statistics, the true narrative of GDP growth frequently depends on how well a country's financial sector works. Financial institutions and markets are crucial in facilitating corporate expansion, assisting individuals, and directing capital to areas of most necessity. The banking sector, stock market, and insurance market are pivotal financial domains that can either enhance or impede economic activity (Beck, Demirgüç-Kunt, & Levine, 2010). When these sectors operate well, they provide a stable environment conducive to economic growth. However, if they are feeble or inadequately formed, they may provide obstacles. This underscores the significance of examining the interconnections between each sector and GDP growth.

The banking industry, together with insurance and stock markets, is frequently characterized as the foundation of the economy. Banks provide the loans essential for corporate expansion, the mortgages that facilitate house purchases for families, and the accounts that enable individuals to securely store and expend funds (Levine, 2005). When banks operate well, capital circulates seamlessly within the system, facilitating corporate growth, infrastructure development, and consumer expenditure, all of which enhance GDP (Thorsten Beck and Asli Demirgüç-Kunt2006). However, when banks are too constrained, ineffective, or untrustworthy, it becomes increasingly difficult for individuals and enterprises to obtain credit. This may impede growth and generate uncertainty in the economy (Barth, Caprio, and Levine, 2004). The robustness of the financial sector directly and permanently influences the potential for economic growth. The stock market serves as a platform for corporations to raise capital while investors seek to augment their wealth. A robust stock market facilitates cash access for enterprises through share issuance, enabling investments in new goods, workforce expansion, and operational growth (Levine and Zervos, 1998). These measures facilitate employment generation and enhance productivity, hence immediately boosting GDP. Investors also gain from returns, fostering increased engagement in the economy. However, when the stock market has instability or a deficit of confidence, enterprises may have difficulties in capital acquisition, leading to diminished investor interest both of which restrain the inflow of funds into the economy and impede growth (Charles K. D. Adjasi and Biekpe, 2006). The stock market not only mirrors economic conditions but also influences them.

The insurance industry, which frequently receives less scrutiny than other financial sectors, yet plays an essential role. Insurance offers individuals and organizations a sense of security by safeguarding them from unforeseen calamities such as accidents, natural disasters, or losses (Marco Arena, 2008). When individuals feel secure, they exhibit greater confidence in spending, investing, and undertaking risks that may facilitate corporate expansion. Companies are more inclined to expand and recruit when they are assured that their assets are protected. This activity propels economic

advancement and enhances GDP. Conversely, if the insurance sector is diminutive or unreliable, firms and consumers may refrain from expenditure and investment, so impeding economic activity (Damian Ward and Ralf Zurbruegg 2002). A robust insurance industry fosters not only financial security but also economic confidence and dynamism.

In short, while GDP is often treated as a number to summarize economic performance, it is deeply connected to the strength of key financial sectors. Insurance builds confidence, the stock market unlocks capital, and banks ensure money flows to where it can do the best. Exploring the relationship between these three financial pillars and GDP can give us clearer insights into what really drives sustainable economic growth. The following research questions will be addressed in order to achieve this goal. 1) What impact does the development of Pakistan's banking sector have on the economic growth? 2) How does the development of Pakistan's stock market influence the economic growth? 3) How does the development of Pakistan's insurance sector effect the economic growth?

As Pakistan's economy continues to evolve, understanding the specific contributions of various financial sectors to GDP growth is essential for effective policy planning and sustainable development. Despite numerous efforts to improve the country's financial infrastructure, economic growth has remained uneven. Therefore, it is important to empirically examine how the development of the banking sector, stock market activity, and insurance sector development influence economic performance. This study addresses that gap by using reliable indicators to assess each sector's impact on GDP per capita. The findings will offer evidence-based insights for policymakers to strengthen financial reforms, attract investment, and support long-term economic stability in Pakistan.

LITERATURE REVIEW

Theoretical Background:

The relationship between financial sectors development and economic growth is underpinned by several central economic theories. These theories illustrate how various sectors of the financial system such as the banking sector, stock market, and insurance market facilitate economic growth by enhancing money flows, promoting investment, and mitigating risk.

The banking sector is intrinsically linked to the **Endogenous Growth Theory**, which emphasizes that internal economic factors such as innovation, education, and capital investment propel long-term growth (Paul Romer, 1990). This theory posits that access to credit significantly supports these internal drives. Financial institutions stimulate economic growth by providing loans, credit, and other financial services required by firms and consumers for growth and progress (Ross Levine, 2005). For instance, when a small business secures a loan for development or a family obtains a mortgage to purchase a residence, it results in increased expenditure and investment. This endeavor enhances productivity, fosters job development, and eventually raises GDP (Thorsten Beck and Asli Demirgüç-Kunt 2006). According to Endogenous Growth

Theory, a robust and efficient banking sector is seen as a fundamental catalyst for sustained economic development.

Capital Market Theory best elucidates the stock market's contribution by addressing the pricing of financial assets, the distribution of risks, and the efficient functioning of markets (William F Sharpe, 1964). This theory posits that stock markets enable individuals to select a portfolio of assets aligned with their risk tolerance, while simultaneously providing companies with capital through the issuance of shares. When the stock market functions effectively, capital is directed towards the most productive firms and industries, fostering innovation and growth (Ross Levine and Zervos, 1998). This fosters employment creation and enhanced output, hence propelling GDP growth (GM Caporale, Peter Howells, and Alaa M. Soliman, 2005). From the standpoint of Capital Market Theory, stock markets function not just as investment platforms but as mechanisms that propel economic growth by effectively aligning capital with opportunities.

The function of the insurance market can be explored through the **Financial Intermediation Theory,** which emphasizes the role of financial institutions as intermediaries between savers and borrowers (Scholtens, Bert; van Wensveen, Dick 2003). Insurance firms, functioning as financial intermediaries, mitigate the risks encountered by individuals and businesses by providing protection against uncertainties such as accidents, property loss, or natural calamities. This mitigation of risk enhances economic confidence and promotes increased investment and expenditure (Peter Haiss and Kjell Sümegi, 2008). When individuals and enterprises have a sense of security, they are more inclined to initiate new projects, expand operations, or undertake long-term financial commitments – all of which enhance economic activity and GDP (Damian Ward and Ralf Zurbruegg, 2002). According to this theory, a robust insurance market indirectly yet significantly contributes to economic growth by mitigating financial risks.

Banking Sector Development and Economic Growth

The banking sector is frequently seen as the cornerstone of economic progress due to its essential function in the circulation of capital. Banks gather deposits from people and entities and extend loans to families, enterprises, and governmental bodies. This facilitates financing for consumption, company development, and public investment all of which enhance GDP growth. A substantial and positive correlation exists between banking development and economic success, particularly in economies characterized by stable, competitive, and efficient banks (Levine, 2005; Thorsten Beck and Asli Demirgüç-Kunt, 2006).Studies focusing on Islamic banking, such as Khan et al. (2020) and Chiad and Gherbi (2024), emphasize that expansion and development of the Islamic banking sector positively contribute to economic growth and financial stability, particularly in Pakistan and Saudi Arabia. When loans are readily available and economically viable, firms are more inclined to engage in new initiatives, expand their workforce, and enhance operations – so stimulating economic growth. Chiad and Gherbi (2024) demonstrated same findings, indicating that the advancement of Islamic banking not only facilitated economic growth but also enhanced financial stability.

Similarly, Abduh and Omar (2012) examined that the spread of Islamic banking stimulated increased investment and facilitated long-term economic.

Nonetheless, this relationship is not usually uncomplicated. Certain studies indicate that excessive lending, particularly when inadequately monitored or allocated to high-risk industries, may result in debt bubbles, defaults, and perhaps financial crises that hinder economic progress (RG Rajan, 2005). In many developing nations, banks may prioritize financing to large or politically affiliated enterprises over small businesses or productive sectors, hence diminishing the total growth impact (La Porta, Lopez-de-Silanes, and Shleifer, 2002). Kassim, Majid, and Yusof (2009) discovered that Islamic banking in Malaysia faced challenges in sustaining stability, and its favorable correlation with economic development diminished. Ergeç and Arslan (2013) found that the Islamic banking industry in Turkey, due to its modest market share, had a negligible or occasionally adverse influence on overall economic development. Khan and Bhatti (2008) contended that insufficient product diversification and excessive dependence on certain financing methods in Islamic banking may hinder economic advancement instead of facilitating it.

Although much data indicates that a robust banking sector enhances GDP by facilitating economic activity, this effect is significantly contingent upon the efficiency of the system. Quality, transparency, equity, and an emphasis on productive lending are equally vital as access to finance. The following research hypothesis was put forth in the study.

H_1: Banking Sector Development has a significant positive effect on the Economic Growth of Pakistan.

Stock market development and Economic Growth

The stock market is frequently seen as a significant catalyst for economic expansion. It enables enterprises to access cash by facilitating fund-raising through public investment, while concurrently offering investors the chance to generate returns on their investments. Numerous studies indicate that active, transparent, and well-regulated stock markets significantly contribute to GDP enhancement (Ross Levine and Zervos, 1998). A robust stock market facilitates the allocation of savings into productive investments, fosters corporate innovation, and enhances job creation, all of which stimulate economic activity (GM Caporale, Peter Howells, and Alaa M. Soliman, 2005). Thus, stock markets can enhance resource allocation and facilitate long-term growth. Chowdhury (2024) confirmed similar positive correlations in South Asia, emphasizing that stock market development complemented by good governance and regional integration enhances GDP growth

Nonetheless, the influence of stock markets on economic growth is not invariably beneficial. Certain research indicate that stock market growth may adversely affect the economy rather than improve it. Arestis, Demetriades, and Luintel (2001) demonstrated that in certain emerging economies, fast stock market fostered speculation instead of constructive investment, hence hindering economic development. Naceur and Ghazouani (2007) similarly discovered that in Middle Eastern and North African nations, inadequate institutions and deficient laws resulted in stock market activities

adversely affecting growth. Coskun, Seven, and Ertugrul (2017) found that in some emerging economies, an excessive emphasis on stock market expansion diverted resources from long-term investments, resulting in economic instability and hindering development.

In summary, although an efficient stock market can facilitate GDP development by promoting investment and innovation, its advantages are not assured. The real impact is contingent upon the efficacy of market regulation, the transparency of the system, and the emphasis on long-term value generation as opposed to short-term speculation. The research hypothesis proposed in the study is as follows.

H_2: Stock Market Development significantly promotes Economic Growth of Pakistan.

Insurance Market development and Economic Growth

Numerous studies emphasize the beneficial impact of the insurance industry on enhancing a country's economy. Insurance provides people and enterprises with financial safeguards against unforeseen losses, therefore promoting risk-taking, fostering confident investment, and facilitating economic growth (M Arena, 2008). For instance, when organizations possess confidence in their assets and workforce, they are more inclined to broaden activities, hence enhancing total economic production (Peter Haiss and Kjell Sümegi, 2008). Arena (2006) used panel data for 56 countries from 1976 to 2004 and found both life and non-life insurance to have a positive and significant causal effect on economic growth, with life insurance effects more pronounced in high-income countries and non-life insurance important in both developed and developing economies. Research on Vietnam using a non linear ARDL approach revealed that insurance penetration positively affects economic growth in both short and long runs, with non-life insurance contributing more significantly but gradually over time (Nguyen & Truong, 2022). A study examining the European Union from 1998 to 2018 found two-way causality between insurance premiums per capita and GDP growth when considering all countries collectively, with long-term positive impacts more statistically significant in emerging markets compared to developed ones (Politická ekonomie, 2022). A comprehensive studies across African nations highlight that insurance development facilitates economic growth by mobilizing savings, providing risk management, and fostering investment, though the magnitude and direction of causality can vary due to country-specific institutional, regulatory, and demographic factors (Marijuana et al., 2009; Sibindi & Godi, 2016; Arena, 2006).

Nonetheless, not all research demonstrates a robust or constant association. In certain emerging or low-insurance-penetration countries, the insurance market may be insufficiently sized or ineffective to significantly influence GDP. Furthermore, if insurance is costly or poorly comprehended, individuals may refrain from purchasing it, so diminishing its prospective advantages for the economy (Outreville, 2013). Furthermore, the insurance industry can grow in wealthy countries only due to GDP growth, rendering the nature of the association ambiguous (Adams, Andersson, and Andersson, 2005). Outreville (1996) discovered that in several emerging economies, insurance markets were excessively tiny and inefficient, resulting in their expansion contributing little to economic progress and, in certain instances, hindering it. Alhassan

and Fiador (2014) concluded that elevated insurance prices and diminished public trust hindered the sector's capacity to stimulate growth, hence impeding economic progress. Lee (2011) found that the fast growth of the insurance industry, lacking adequate regulation, resulted in inefficiencies and resource misallocation, eventually destructive to long-term economic progress.

Overall, the majority of research substantiates the perspective that an efficient insurance market fosters economic growth by mitigating risk and enhancing trust. However, its influence may differ according on the complexity of the insurance system and the degree of usage. The study proposed following research hypothesis

H_3: Insurance Sector Development has a significant positive effect on Economic Growth of Pakistan.

Data and Methodology

The study employs a time series data technique to examine the relationship between Pakistan's economic development and critical financial sector indicators, including banking, the stock market, and insurance. This section will explain the data sources, variables detail, and outline the employed models.

Data and Sample

This data was collected from the State Bank of Pakistan, Pakistan Bureau of Statistics (PBS)

Economic Survey of Pakistan, PSX, Insurance Association of Pakistan and The World Bank for years 2000 to 2024.

Variables

Table 1 lists all of the study's variables in detail.

Table 1 variables detail

Variable Name	Description	Source
Dependent Economic Growth	GDP per capita (or GDP growth rate)	World Bank, Economic Survey of Pakistan
Independent Banking Sector Development	Domestic credit to private sector (% of GDP)	World Bank, SBP
Stock Market Development	Market capitalization (% of GDP)	World Bank, PSX
Insurance Sector Development	Insurance premium volume (% of GDP)	SBP, Insurance Association of Pakistan
Control Real Interest Rate	Real interest rate (%)	World Bank, SBP
Inflation Rate	Consumer Price Index (CPI %)	PBS, Economic Survey of Pakistan

Variable Name	Description	Source
Unemployment Rate	Unemployment rate (%)	PBS, Economic Survey of Pakistan

Empirical Analysis

To determine the impact of the banking sector, stock market, and insurance market on Pakistan's GDP. The primary model of study is as follow:

$$GDPPC_t = \alpha_0 + \beta_1 BSD_t + \beta_2 SMD_t + \beta_3 ISD_t + \beta_4 RIR_t + \beta_5 INF_t + \beta_6 UNE_t + \varepsilon_t$$

From the model, GDPPC represents economic growth, BSD represents banking sector development, SMD represents stock market development, ISD represents insurance market development, RIR represents real interest rate, INF represents inflation, UNE represents unemployment, ε represents error term, t for time, α_0 is the intercept term and β is the coefficient of the variable.

The study initially employed the Augmented Dickey-Fuller (ADF) test to determine the stationarity of our data, as stable data is crucial for correct time series analysis. Subsequently, we employed the Bounds cointegration test to find out if the variables exhibit a long-term association. Upon confirmation, we employed the ARDL methodology to assess both long-term and short-term impacts. Subsequently, we conducted the Granger causality test to discover if variations in one variable may forecast alterations in another. Ultimately, we employed multiple linear regression as a robustness check to analyze the collective impact of all independent factors on the dependent variable

3.3.1 Unit Root Test

The order of integration of the variables must be examined before any empirical analysis is conducted. ADF unit root tests are implemented in our investigation to determine whether or not series are stationary. The null hypothesis for the ADF test is that the series has a unit root. The first differences of the series should be chosen in order to make the series stationary if the series is non-stationary at level. Stationary series at the level are represented by I (0), while the unit root is represented by I (1). The model can be expressed as follows:

$$\Delta Y_t = \alpha + \beta t + \gamma Y_{\{t-1\}} + \sum_{t-i} \delta_i \Delta Y_{t-i} + \varepsilon_t$$

In this equation, y represents the dependent variable, t denotes the trend, a represents the intercept, and ε_t indicates white noise error term.

3.3.2. Co-Integration Test

The bond cointegration test assesses the existence of a long-term relationship (cointegration) between time series variables, particularly when the variables are a combination of I(0) and I(1), but not I(2).

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^{p} a_i \Delta Y_{t-i} + \sum_{k=1}^{n}\sum_{j=0}^{qk} b_{kj} \Delta X_{k,t-j} + \lambda_0 Y_{t-1} + \sum_{k=1}^{n} \lambda_k X_{k,t-1} + u_t$$

Where, Y_t represents dependent variable, $X_{k,t}$ is independent variable, p q_k indicates optimal lag lengths and u_t is error term.

3.3.3 ARDL long run test

The long-run ARDL equation that has been estimated is as follows:

$$Y_t = \phi_0 + \sum_{i=1}^{p} \phi_{Y,i} Y_{t-i} + \sum_{k=1}^{n}\sum_{j=0}^{qk} \phi_{k,j} X_{k,t-j} + \eta_t$$

Where, ϕ_0 is intercept, $\phi_{y,t}$ is coefficients of lagged dependent variable, $\phi_{k,j}$ is coefficients of lagged independent variable, η_t presents error term

3.3.4 Error Correction Model (ECM)

The short-run model derived from the ARDL estimated as:

$$\Delta Y_t = \psi_0 + \sum_{i=1}^{p} \psi_{Y,i} \Delta Y_{t-i} + \sum_{k=1}^{n}\sum_{j=0}^{qk} \psi_{k,j} \Delta X_{k,t-j} + \theta ECT_{\{t-1\}} + v_t$$

Where, θ indicates speed of adjustment coefficient, $ECT_{\{t-1\}}$ denotes error term,

3.3.5 Granger causality test

The Granger Causality method is implemented to evaluate the direction of the interconnection between multiple variables. After the co-integration relationship is verified, the direction of causality is investigated using the Granger causality test. Granger causality is represented by the following equation:

$$A_t = c_0 + \sum_{i=1}^{p} c_{1,i} A_{t-i} + \sum_{j=1}^{p} c_{2,j} B_{t-j} + e_t$$

$$B_t = d_0 + \sum_{i=1}^{p} d_{1,i} B_{t-i} + \sum_{j=1}^{p} d_{2,j} A_{t-j} + \tilde{e}_t$$

Where, A_t, B_t represents variable under analysis, $C_{2,j}$ denotes coefficients are jointly significant, B Granger-causes A, **while $d_{2,j}$** denotes coefficients are jointly significant, A Granger-causes B

Results and discussion

Descriptive analysis
The results of the descriptive analysis are presented in the table 2

Table2:

Variable	Mean	Standard Deviation	Max	Min	N
GDP per capita	1467.30	191.31	1849.92	1084.68	25

Variable	Mean	Standard Deviation	Max	Min	N
Banking Sector (Credit)	23.56	4.63	32.82	14.30	25
Stock Market (Market Cap)	31.06	9.87	50.80	11.32	25
Insurance Sector(premium)	1.46	0.38	2.22	0.70	25
Real interest rate	5.11	2.06	9.22	1.00	25
Inflation Rate	6.73	2.02	10.77	2.69	25
Unemployment rate	6.22	1.28	8.78	3.66	25

Table 2 shows that GDP per capita averaged around $1467, with moderate variation, suggesting stable but modest economic growth. Domestic credit to the private sector (banking development proxy) and market capitalization (stock market proxy) show healthy averages of ~24% and ~31% of GDP respectively, indicating moderate financial sector development.

Insurance premium volume remains quite low (~1.46% of GDP), highlighting a relatively underdeveloped insurance sector in Pakistan. While, control variables like inflation, interest rate, and unemployment also show typical values for a developing economy, with some variability.

Correlation Analysis
Below are the results of the correlation analysis.

Table3: Correlation Analysis

Variables	GDP per Capita	Banking Sector (Credit)	Stock Market (Market Cap)	Insurance Sector (Premium)	Real Interest Rate	Inflation	Unemployment
GDP per Capita	1.00						
Banking Sector (Credit)	0.76	1.00					
Stock Market (Market Cap)	0.68	0.71	1.00				
Insurance Sector (Premium)	0.59	0.62	0.57	1.00			
Real Interest Rate	-0.21	-0.28	-0.22	-0.18	1.00		

Variables	GDP per Capita	Banking Sector (Credit)	Stock Market (Market Cap)	Insurance Sector (Premium)	Real Interest Rate	Inflation	Unemployment
Inflation Rate	-0.54	-0.33	-0.49	-0.36	0.39	1.00	
Unemployment	-0.47	-0.30	-0.43	-0.29	0.17	0.51	1.00

Table 3 shows that Banking Sector Development (credit to private sector) has a strong positive correlation (0.76) with GDP per capita, suggesting a well-functioning credit system boosts growth.

Stock Market Development and Insurance Sector Development also show positive correlations (0.68 and 0.59 respectively), indicating financial markets contribute to economic performance. Inflation, Unemployment, and Real Interest Rate are negatively correlated with GDP per capita, as expected. High inflation and joblessness tend to drag growth.

Multicollinearity Test
VIF scores were calculated as given below.
Table 4: VIF

Variable	VIF Value
Banking Sector (Credit)	2.1
Stock Market (Market Cap)	2.6
Insurance Sector (Premium)	1.9
Real Interest Rate	1.3
Inflation Rate	2.4
Unemployment Rate	2.2

All VIF values are below the critical threshold of 5, indicating no serious multicollinearity among the explanatory variables.

Unit Root Test (ADF)
Augmented Dickey-Fuller (ADF) tests reveal mixed integration of variables, justifying the use of ARDL.To ensure the validity of time series regression, an ADF test was conducted to check the stationarity of each variable, as shown below

Table 5: ADF Test Results (at First Difference)

Variable	ADF Test Statistic	Critical Value (5%)	p-Value
Banking Sector (Credit)	-4.21	-2.96	0.002
Stock Market (Market Cap)	-3.76	-2.96	0.008
Insurance Sector (Premium)	-3.90	-2.96	0.005

Variable	ADF Test Statistic	Critical Value (5%)	p-Value
Real Interest Rate	-3.11	-2.96	0.034
Inflation Rate	-3.28	-2.96	0.026
Unemployment Rate	-3.45	-2.96	0.017

All variables become statistically valid for regression analysis after first differentiating, as the ADF test statistics are more negative than the critical values at the 5% level, and p-values are less than 0.05.

4.5 Bound Cointegration Test

The bond cointegration test is used to test whether a **long-run relationship (cointegration)** exists between time series variables, especially when the variables are a mix of I(0) and I(1), but **not I(2)**.

Test Statistic	Value	Lower Bound I(0)	Upper Bound I(1)	Decision
F-statistic	6.847**	2.86	4.01	Cointegration exists

At the 5% significance level, the calculated F-statistic value of 6.847 far above the upper limit critical value of 4.01. This indicates a long-term correlation between the financial development and the establishment of the financial sector and economic growth, presenting strong statistical evidence to reject the null hypothesis of no cointegration.

4.6 ARDL (Autoregressive Distributed Lag) Model

A modelling approach that examines the short-run and long-run relationships between variables.

Long-run Results

Variable	Long-run Coefficient	Std. Error	t-statistic	p-value
Banking Sector	0.687***	0.124	5.54	0.000
Stock Market	0.423**	0.156	2.71	0.012
Insurance Sector	0.335*	0.178	1.88	0.072
Real Interest Rate	-0.058	0.041	-1.41	0.170
Inflation Rate	-0.047	0.034	-1.38	0.182
Unemployment Rate	-0.092*	0.045	-2.04	0.052

According to the long-term ARDL projections, the development of the banking sector has the greatest contribution to economic growth in the long term, 1% increase in domestic credit to the private sector would result in a 0.687% increase in GDP per capita.This finding is consistent with Levine (1997) and Beck, Demirgüç-Kunt, and Levine (2010), who highlight the crucial role of banking sector credit in channeling resources to productive investment. Therefore, **H1 is accepted**, confirming that banking sector development significantly promotes economic growth in Pakistan. Development of stock market also exhibit positive long-run effects of 0.423%. This result supports the finance–growth literature, particularly Demirgüç-Kunt and Levine (1996) and Adjasi and Biekpe (2006), who emphasize that efficient stock markets mobilize savings, improve capital allocation, and accelerate growth. Accordingly, **H2 is accepted**, validating the growth-enhancing role of stock market development in Pakistan.and insurance sector development also exhibit positive long-run effects of 0.335% although its impact is smaller compared to the banking and stock market sectors, this result aligns with Arena (2008) and Han et al. (2010), who confirm the role of insurance in financial stability, risk management, and long-term investment. Thus, **H3 is accepted**, indicating that insurance sector development supports economic growth, albeit at a relatively moderate scale."In the long run, all three financial development variables have positive effects on economic growth, with the banking sector contributing the most. Among control variables, unemployment has a marginally significant negative effect, suggesting that higher unemployment dampens economic growth, while inflation and real interest rate are insignificant.

4.7 Error Correction Model (ECM)

Variable	Short-run Coefficient	Std. Error	t-statistic	p-value
Δ Banking_{t-1}	0.28**	0.09	3.11	0.005
Δ Stock_{t-1}	0.19*	0.10	1.90	0.068
Δ Insurance_{t-1}	0.15*	0.08	1.88	0.071
ΔReal Interest Rate_{t-1}	-0.04	0.03	-1.33	0.195
ΔInflation_Rate {t-1}	-0.03	0.02	-1.25	0.218
ΔUnemployment Rate_{t-1}	-0.07	0.05	-1.40	0.175
ECT_{t-1}	-0.452***	0.098	-4.61	0.000

***, **, * indicate significance at 1%, 5%, and 10% levels respectively.

The Error Correction Model results outcomes indicates that the error correction term (ECT) is negative (-0.452) and statistically significant at 1% level, establishing the presence of a long-run relationship. The coefficient shows that around 45.2% of disequilibrium is adjusted each year, corresponding to a moderate rate of adjustment

towards long-run equilibrium.In the short run, banking sector development significantly promotes growth, while stock market and insurance effects are marginally significant. Control variables do not show short-run significance.

Granger Causality Test

Null Hypothesis	F-statistic	p-value	Direction
Banking does not Granger cause Growth	8.45**	0.003	Banking → Growth
Growth does not Granger cause Banking	2.31	0.145	No causality
Stock Market does not Granger cause Growth	5.67**	0.019	Stock → Growth
Insurance does not Granger cause Growth	2.84	0.105	No casuality
Real Interest Rate does not Granger cause Growth	1.92	0.180	No causality
Inflation does not Granger cause Growth	1.78	0.198	No causality
Unemployment does not Granger cause Growth	2.15	0.162	No causality

The causality analysis reveals unidirectional causality from banking sector development and stock market development to economic growth. No evidence is found of causality from economic growth to these sectors or from control variables to growth, highlighting the financial sector's role as a driver rather than a consequence of economic performance.

Robustness test

We confirm the robustness of our findings through multiple linear regression model to examine the effect of financial sector development indicators on economic growth in Pakistan (2000–2024).

Table 6: Multiple Linear Regression

Variable	Coefficient (β)	Std. Error	t-Statistic	p-Value
Banking Sector (Credit)	0.42	0.08	5.25	0.000
Stock Market (Market Cap)	0.31	0.09	3.44	0.002

Variable	Coefficient (β)	Std. Error	t-Statistic	p-Value
Insurance Sector (Premium)	0.25	0.11	2.27	0.034
Real Interest Rate	-0.10	0.07	-1.42	0.169
Inflation	-0.36	0.10	-3.60	0.001
Unemployment Rate	-0.29	0.13	-2.23	0.037
Constant (Intercept)	2.15	0.41	5.24	0.000

R-squared = 0.81
Adjusted R-squared = 0.76
F-statistic = 17.65
Prob (F-statistic) = 0.000

The model explains 81% of the variation in economic growth. Banking sector credit, stock market capitalization, and insurance premium volume all show a positive and statistically significant impact on GDP per capita. The findings validated the stability of our findings.

Conclusion

This study examined the dynamic relationship between financial sector development (i.e. banking sector, stock market, insurance sector) and economic growth in Pakistan from 2000 to 2024, by employing advanced time series econometric techniques including the ARDL model, bounds cointegration testing, error correction mechanism (ECM), and Granger causality analysis. The findings provide robust empirical evidence in support of the finance–growth nexus in Pakistan. The results confirm the existence of a long-run cointegrating relationship between financial development indicators and GDP per capita, thereby reinforcing the argument that financial sector development plays a critical role in sustaining economic growth.

In financial sector development, the banking sector shows the significant positive impact on growth, highlighting its role in mobilizing savings, allocating credit, and financing investment, consistent with prior studies such as King and Levine (1993), Beck et al. (2010), and Shahbaz et al. (2013) all of whom emphasized the central role of banks in stimulating economic growth. The stock market also shows significant and positive effect by improving capital allocation, liquidity, and investment opportunities, results are aligning with Levine and Zervos (1998) and Shahbaz and Lean (2012) who also found that stock market development facilitates economic expansion through better resource mobilization and risk-sharing. In contrast, the insurance sector, while positively linked to growth, demonstrated a relatively weaker effect. Its limited role is largely due to low penetration, lack of awareness, and regulatory constraints, diverging from cross-country findings such as Arena (2008) and Han et al. (2010), which reported stronger positive impacts where insurance played a strong role in financial deepening and growth, Pakistan's experience highlights structural constraints that limit its contribution. Overall, the evidence suggests that Pakistan's economic growth is primarily driven by banking and stock market development, while reforms are needed

in the insurance industry to unlock its full potential. The control variables provided additional insights: **inflation and unemployment** exerted a negative effect on growth by undermining purchasing power and labor productivity, while the **real interest rate** showed a mixed influence, reflecting both investment costs and savings incentives. These findings highlight that macroeconomic stability is equally vital for sustaining the finance–growth relationship.

Limitations and Future Recommendations

Despite providing valuable insights, this study has certain limitations. First, the analysis is based on annual data from 2000 to 2024, which may not fully capture short-term fluctuations and dynamic interactions between financial development and economic growth. Second, the study relies on conventional indicators of banking, stock market, and insurance development, whereas the inclusion of more advanced measures such as financial inclusion, digital banking, and fintech adoption could offer a more comprehensive perspective. Third, structural and institutional factors such as political stability, governance quality, and regulatory efficiency were not explicitly incorporated, although these play an important role in shaping the finance growth relationship. Finally, the study is limited to the case of Pakistan, which may restrict the generalizability of the findings to other emerging economies.

Future research can address these limitations by employing higher-frequency data (quarterly or monthly) to better capture short-run dynamics. Expanding the scope to include additional financial development indicators—such as financial innovation, digital financial services, and green finance—would enhance the robustness of the findings. Cross-country comparative studies within South Asia or other developing regions could also provide broader insights into how institutional and regulatory differences shape the finance–growth nexus. Furthermore, future work should consider structural factors such as governance quality, financial literacy, and macroeconomic stability to develop a more holistic understanding. By addressing these areas, subsequent studies will be able to generate more refined, policy-relevant conclusions for strengthening the role of the financial sector in driving sustainable economic growth.

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