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Impact of Market Capitalization, Market Size, Liquidity and Investment in Economic Performance of Pakistan

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	Abstract
<p>Shahid Munir* Department of Economics, Government Postgraduate College Kohat, 26000, Khyber Pakhtunkhwa, Pakistan Email: shahidmunirshahid@gamil.com</p> <p>Muhammad Wasil Shiekh Department of Economics, Government Postgraduate College Kohat, 26000, Khyber Pakhtunkhwa, Pakistan</p> <p>Aiza Khan Department of Economics, Government Postgraduate College Kohat, 26000, Khyber Pakhtunkhwa, Pakistan</p> <p>Haseena Bibi Department of Economics, Government Postgraduate College Kohat, 26000, Khyber Pakhtunkhwa, Pakistan</p> <p>Waheed Ullah Jan Department of Economics, Government Postgraduate College Kohat, 26000, Khyber Pakhtunkhwa, Pakistan</p>	<p>Stock markets perform a very crucial role in channelizing funds, improving resource allocation, and contributing to economic growth and development. This research analyzes the effect of investment, liquidity, market capitalization, and market size on Pakistan economic growth. The principal objective of this research is to explain how investment, liquidity, market capitalization, and market size can influence Pakistan's economic growth by utilizing time series data from 1995 to 2024. The study applies the ARDL framework to explore the long-term relationship among variables as well as their interaction in short term. We also perform various diagnostic tests such as (unit root, multi-collinearity, heteroscedasticity, normality, auto-correlation and specification bias) to evaluate the accuracy of the model. The outcomes of this research reveal that market capitalization, market size, and liquidity have direct and significant relationship with growth of Pakistan economy, however investment has an inverse association with Pakistan's economic growth due to the financial crowding out effect. The study provides significant policy recommendations on the role of stock market in economic performance of the country.</p>
Keywords:	Market Capitalization; Market Size; Liquidity; Economic Outlook



Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

Introduction

Economic growth is the main objective of many developing countries. Developing countries, such as Pakistan, are still facing persistent challenges in achieving sustainable economic growth (Ali et al., 2024; Nasir, 2024). Economic growth also depends on how a country allocates and mobilizes its financial resources (BAAFI, 2016). Financial markets play a crucial role because they connect investors and savers to allocate funds towards productive activities. In recent years, Pakistan's financial sector, especially its stock market, has become the focus for policymakers and researchers to understand how stock market indicators relate to the country's growth (Madura, 2015). Stock markets are key indicators of a country's economic development because they facilitate the mobilization of domestic resources for productive investment, leading to an increase in capital productivity (Akram & Akram, 2024).

This study is significant because it deepens the understanding of how stock market dynamics contribute to economic performance in a developing economy like Pakistan. Stock markets play a crucial role in mobilizing savings, rising liquidity, and allocating capital efficiently, which in turn supports long-run economic growth (Levine & Zervos, 1998; Beck & Levine, 2004). By empirically examining market capitalization, market size, liquidity, and investment, this research provides comprehensive evidence on the performance of Pakistan's financial market over an extended period (1995–2024). The findings highlight that market capitalization, liquidity, and market size exert a positive and statistically significant impact on economic growth, confirming the finance-led growth hypothesis for Pakistan. Conversely, the negative effect of investment on economic growth reflects structural inefficiencies and the presence of financial crowding-out effects, where inefficient public and private investment fails to translate into productive economic outcomes (Aschauer, 1989; Ahmad & Hamid, 2017). These results carry important policy implications for strengthening financial markets, improving investment efficiency, and fostering sustainable economic growth.

The novelty of this study lies in its integrated and updated empirical framework that jointly examines market capitalization, market size, liquidity, and investment in explaining Pakistan's economic growth using a long and recent time series dataset. While earlier studies have largely focused on isolated indicators of financial development and shorter sample periods (King & Levine, 1993; Shahbaz et al., 2016), this research addresses a clear gap by capturing both the depth and scale of the stock market alongside investment dynamics within a single ARDL framework. Moreover, the study contributes to the literature by explicitly identifying the inverse role of investment through the financial crowding-out effect, an aspect that has received limited empirical attention in the context of Pakistan. By incorporating extensive diagnostic testing and short- and long-run dynamics, this research enhances methodological robustness and offers fresh evidence for policymakers seeking to reform financial markets and improve the growth-enhancing role of investment in emerging economies.

This study fills the gap by separately examining how stock market investment, market capitalization, market size and liquidity influence economic growth of Pakistan

Literature Review

The relation between economic growth and development of stock market has been broadly analyzed, specifically in developing countries. Many studies recognized that stock markets can lead to long run growth by enhancing liquidity, promoting investment activities, and efficient capital allocation. The stock market indicators such as liquidity turnover, and market capitalization, are significant determinants of economic growth (Levine & Zervos, 1998), showing deeper and more active markets tend to support growth. According to the neoclassical growth model (Solow, 1956) economic growth is driven by capital formation and technological advancement. According to this framework, increases in capital stock via investment should lead to higher output levels. The endogenous growth theory (Romer, 1990), prolongs this framework by including human capital, innovation, and knowledge as crucial sources of sustained growth. These theoretical foundations propose that both magnitude and caliber investment are crucial for long term economic development. An effective financial system encourages economic growth by mobilizing funds into productive investments, which in turn supports technological innovation and entrepreneurship (Schumpeter, 1911). There are five specific channels through which financial system support economic growth: facilitating risk management, efficiently mobilizing and distributing resources, supervising managers and exerting corporate control, pooling saving from investors, and promoting trade of goods and services (Levine, 2005). These theoretical foundations provide a framework for examining how stock market indicators affect economic growth in developing countries.

Economic Growth and Stock Market Capitalization.

Stock market capitalization is quantified by total market value of all domestically listed firms. It serves as a key indicator of stock market progress. The theoretical link between economic growth and stock market capitalization goes through numerous mechanisms that have been recognized in the literature. A Larger stock markets provides opportunities for investors, risk diversification, reduce liquidity risk and ease capital mobilization for productive investments.

A study exploring the association between economic growth stock market development, indicates that development of banking and stock market liquidity significantly predict future of economic growth, improvement in capital formation and productivity, even after accounting for other factors known to affect growth (Levine & Zervos, 1998). However, the relationship among economic growth and market capitalization might vary between developing and developed countries because of structural changes. In the developing nations, the stock market progress has a limited impact on economic growth due to weak institutional structure and inefficient financial system (Naueur & Ghazouani, 2007). Another study demonstrates, there is direct long-term connection between economic growth of Pakistan and stock market development, demonstrating the development of stock market can promote economic growth and economic growth also facilitates stock market expansion (Shahbaz et al, 2008).

Economic Growth and Market Size:

Market size is frequently determined by the total listed domestic companies, reveals the depth of stock markets. A larger market size provides opportunities for firms to raise capital by issuing equity and allows investors to diversify their portfolios across a broader array of securities (Pagano, 1993). A study suggest that market size tends to increase with economic development, but the causal direction remains unclear. Economic growth and market development could be affected by various factors such as quality of institutions, property rights protection, efficiency of legal system, and the overall regulatory environment, rather than being directly caused by market size (Demirgüç-Kunt & Levine, 1996). Another study demonstrate that market size shows a positive relationship with the GDP expansion in basic two variable analysis, however the relationship becomes insignificant when other macroeconomic factors such as public expenditure, inflation rates, trade openness are considering. This indicates that market size is unlikely to be sufficient to determine economic growth (Khan & Qayyum, 2007).

Economic Growth and Investment.

Investment, evaluate through gross fixed capital formation, is considered a primary driver of economic growth. Classical growth models emphasize that capital accumulation through investment directly increases productive capacity and labor productivity, leading to higher output level (Solow, 1957). In developing countries, investment in human



Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

capital, infrastructure, machinery and technology is necessary for the structural changes and manufacturing of goods and services, which is mandatory for economic growth. Empirical findings show a direct correlation between economic growth and investment. In developing and developed countries the economic growth is significantly influenced by investment ratios. The strength of this impact relies on quality and type of investment (Blomstrom et al, 1996). However, the correlation between economic growth and investment is not always significant across all situations. The quality and efficiency of investment matter as much as the quantity, because unproductive investment or poorly allocated may contribute little to economic growth or even harm economic growth (Easterly & Levine, (2001). In Pakistan, several studies have observed dynamics between economic growth and investment. The empirical evidence indicates, both private and public investments enhance economic growth in Pakistan, However the strength of this relationship depending on macroeconomic conditions. During periods of macroeconomic stability and policy reforms, investment strongly exhibits a direct impact on economic growth, while during periods of instability the investment shows weaken impact on economic growth (Iqbal & Zahid, 1998).

Liquidity and Economic Growth:

Stock market liquidity measures how easily assets can be traded without changes in price. It serves as a vital factor of stock market development that is different from market size (Kyle, 1935). When the markets are liquid it encourages investors to adjust their investment according to the situation, lowering risk associated with holding long term investments. Highly liquid markets may promote speculation and short-term trading rather than supporting long term productive investment, which diverting the resources from productive uses. Excessive market liquidity may discourage investors to gather information about firm's long-term prospects because they can easily exit their positions (Stiglitz, 1989). This behavior weakens the informational efficiency of stock prices. In Pakistan, liquidity and its effect on economic growth concluding that improvements in liquidity have positive but modest effects on growth (Hussain & Chakraborty, 2012). Their results show that while liquidity contributes to Pakistan's economic growth, but its effect is weaker than in developed markets due to market imperfections and limited investor's participations.

Methodology

Data and variables:

This research utilizes annual time series data for Pakistan from the period of 1995 to 2024. The data were collected from the World Development Indicators (WDI, 2025). This study analyzes the effect of market capitalization, liquidity, investment and market size, on economic growth of Pakistan. In the research, the dependent variable is (GDP), measured in annual percentage (Kamran et al, 2018). The independent variables are, market size which is determined by listed domestic companies total (Eldomiaty et al., 2023). Market capitalization is quantified through the market capitalization of companies listed domestically, demonstrated as a percentage of GDP. Investment is estimated using gross capital formation, expressed as a percentage of GDP (Akram & Akram, 2024). Liquidity, measured by the aggregate value of traded stock, presented as a percentage of GDP (Nazir et al, 2010). The data sources and variable explanation are showed in Table 1.

Table 1. Variable Descriptions:

S. No	Variables	Abbreviations	Description	Sources
1	GDP	GDP	GDP was measured by GDP growth (annual %)	(WDI,2025)
2	Investment	INV	Investment was measured by (gross capital formation (% of GDP).	(WDI, 2025).
3	Liquidity	LIQ	Liquidity was measured by stocks traded and total value (% of GDP).	(WDI, 2025).
4	Market Capitalization	MC	Market Capitalization was measured by the market capitalization of companies listed domestically (%of GDP).	(WDI, 2025).
5	Market size	MS	Market size was measured by Listed domestic companies, total	(WDI, 2025).

Estimation Techniques:

Time series data contain various econometric problems, such as unit roots, normality, Multicollinearity, heteroscedasticity, autocorrelation, and specification bias. The Augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1979), was used to determine the stationarity of the variables. The Jarque Bera statistics (Jarque & Bera, 1980) was employed to investigate the normality of residuals. The Variance inflation factor (VIF) (O'Brien, 2007) is applied to check the multicollinearity among variables. The



Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

heteroskedasticity among the residuals was tested through the Breusch Pagan Test (Breusch & Pagan, 1979). To examine the autocorrelation among residuals, Breusch Pagan Test (Breusch & Pagan, 1979) was employed. Specification bias was inspected using the Ramsey RESET test (Ramsey, 1969).

Econometric Model:

$$GDP = \beta_0 + \beta_1 MC + \beta_2 MS_t - \beta_3 INV_t + \beta_4 LIQ + \epsilon_t$$

Whereas GDP = Economic Growth (Dependent Variable), MC= Market Capitalization, MS= Market Size, INV= Investment, LIQ= Liquidity

Result and Discussion:

The findings from ADF test reveals that Market Capitalization and economic growth, are stationary at level I (0). Whereas other variables, such as liquidity, market size and investment are stationary at the first difference, I (1). So, our model comprises aggregation of I (1) and I (0) variables. In table 2 the results are presented.

Table 2. Result of ADF Test:

Variables	At Level	Prob.	At First Difference	Prob.	Decision
GDP	-4.13	0.00	-	-	I (0)
INV	-1.65	0.45	-5.22	0.00	I (1)
LIQ	-1.98	0.29	-4.88	0.00	I (1)
MC	-3.71	0.01	-	-	I (0)
MS	-1.12	0.70	-4.95	0.00	I (1)

Diagnostic Tests:

Model validity was determined using several diagnostic. The normality test showed an F-statistic of 1.30 (p-value = 0.52), signifying that the residuals are distributed normally. Heteroskedasticity test provided an F-statistic (p-value = 0.47), showing constant variance in residuals. For autocorrelation, the F-Statistic was 1.52 and the p-value was 0.25, which shows that the residuals are not correlated. The specification bias provided an F-Statistic of 1.44 (p-value = 0.25), which signified that there is no specification bias. To assess the multicollinearity between variables, Variance Inflation Factors (VIF) were employed. The centered VIF values for all variables remained under the conventional threshold of 10. Specifically, LM_CAP had the lowest VIF value of 1.54, followed by LLIQUIDITY (1.93), LINVESTMENT (2.14), and LM_SIZE (2.82), respectively. The result of diagnostic tests are presented in Table 3.

Table 3. Diagnostic Tests Outcomes:

Tests	F-Statistic	P-value	Conclusion
Normality test	1.30	0.52	Residuals are distributed normally.
Heteroskedasticity	1.03	0.47	No heteroskedasticity.
Autocorrelation	1.52	0.25	No Autocorrelation.
Specification Bias	1.44	0.25	Model is correctly specified.
VIF Test Result			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
INV	36.25	2096.65	2.14
LIQ	0.20	12.37	1.93
MC	1.11	63.82	1.54
MS	29.30	9130.98	2.82
C	781.43	5865.84	NA



Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

ARDL Estimation Results:

The ADF test results present an aggregate order of integration, therefore we apply (ARDL) model (Pesaran et al, 2001). The ARDL is an econometric method applied to establish the long term linkages and short term dynamics between variables, when variables are stationary at I (0) and I (1). It provides efficient method for exploring long term and short-term correlations among variables. This model includes Bound Test to detect long run cointegration and provide Error Correction Term which calculates the speed at which system returns to equilibrium after short run turbulences. Owing to these advantages, the ARDL is widely preferred for analyzing dynamic relationships in the regression model. The ARDL bound test results, indicate an f-statistic is 26.79, which goes beyond the upper bound at 1% significance level, demonstrating strong long-term relationship between variables. The outcomes are presented in Table 4.

Table 4: ARDL Bound Test:

Test Statistic	Value	Signif	I (0)	I (1)
F-statistic	26.79	10%	1.9	3.01
K	4	5%	2.26	3.48
		2.5%	2.62	3.9
		1%	3.07	4.44

The long-term estimation results show, investment has inverse but significant impact on Pakistan's economic growth of Pakistan, which can be demonstrated by the financial crowding-out effect. The idea of crowding out was first introduced by Keynes (Keynes, 1936). Later, economists such as Tobin (1969), Stiglitz (1985), and Morck et al. (1990) expanded this theory to the financial sector, explaining that when the government and individuals invest their funds in the stock market rather than in productive sectors, GDP decreases. Particularly, 1% increases in investment lead to 16% decline in growth of GDP. In contrast, other indicators, market capitalization, liquidity and market size show a direct and highly significant impact on GDP, signifying that development of stock market influences the Pakistan's economic growth. More precisely, a 1% rise in liquidity, GDP increases by 0.6%, a 1% increase in market capitalization, GDP increases by 1.1%, and a 1% rise in market size increases GDP by 7%. In table 5 the outcomes are displayed.

Table 5: ARDL Long Run Coefficients:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Log INV	-16.80	3.39	-4.96	0.00
Log LIQ	0.62	0.11	5.71	0.00
Log MC	1.11	0.22	5.08	0.00
Log MS	7.18	1.42	5.07	0.00

After the estimation of long-term coefficients, the error correction term was calculated because it captures the short-run modification towards equilibrium. The short run outcomes demonstrate a positive impact of past economic growth on the present economic growth. Investment exhibits a significant and direct effect on economic growth. A 1% rise in investment, GDP increases by 10%. Liquidity shows an inverse but significant effect on economic growth, meaning that when liquidity increases by 1%, GDP decreases by 0.5%. This inverse relation can be recognized by financial crowding-out effect. While market size demonstrates significant and positive effect on economic growth in short run. The error correction term is negative and significant, showing that after a short-run disturbance the economy will returns to long term equilibrium. The coefficient of -1.92 suggests that approximately 192% of variation from long run will adjusted each period, implying a rapid adjustment toward long run stability. The results are summarized in table 6.

Table 6. ARDL Short run result:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (GDP (-1))	0.37	0.07	4.95	0.00
D (Log INV)	10.52	2.61	4.04	0.00
D (Log INV (-1))	21.77	3.66	5.95	0.00
D (Log LIQ)	-0.54	0.20	-2.71	0.02
D (Log LIQ (-1))	-0.79	0.23	-3.41	0.00
D (Log MS)	3.32	3.51	8.64	0.00
D (Log MS (-1))	10.03	4.19	2.40	0.03



Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

CointEq (-1) *	-1.92	0.15	-12.94	0.00
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Conclusion:

This research examined the impact of investment, liquidity, market capitalization and market size on Pakistan's economic growth from 1995 to 2024. ARDL approach is applied to explore long run connection and short run dynamics between stock market development and economic growth of Pakistan. This study reveals a complex relationship among Pakistan's economic growth and development of stock market. In long run liquidity, market size and market capitalization show direct effect on economic growth of Pakistan. However, this study reveals an important paradox regarding to investment in stock market. In long run, investment exhibits a significant and negative effect on Pakistan's economic growth. This result indicates the financial crowding out effect, in which the excessive funds are diverted from productive sectors into the stock market instead of real economic activities.

However, in short run investment and market size has a significant and direct correlation with economic growth of Pakistan. While liquidity exhibits negative and statistically significant relationship due to financial crowding out effect. The error correction term -1.92 suggest rapid adjustment toward long run equilibrium, with approximately 192% of deviation corrected each period, This study demonstrates that development in stock market can contribute to Pakistan's economic growth but when investment flow into productive sectors rather than remaining in stock market. This study fills an important gap by showing how different stock market indicators affects economic growth differently and policy makers must carefully manage how investment is allocated between stock market and real economic activities.

Policy Recommendations.

The policy and recommendations are given below, Securities and Exchange Commission of Pakistan (SECP) should create rules requiring companies that raise funds through stock market and use those funds for actual business expansion. Policymakers should establish a framework that connect stock market growth with productive economic activities. This includes establishing mandatory requirements for listed companies to reinvest a certain percentage of raised capital into productive assets. The government should encourage small and medium-sized enterprises (SME) contributes in stock market by simplifying listing procedures, reducing costs, and offering guidance for new firms that want to enter the stock market. This would strengthen overall economic activity. The government must ensure political stability and provide strong legal protection to attract foreign investment capital into stock market. The government should launch public awareness programs to educate investors about the advantages of holding long term stocks. The government should reduce taxes on stock market transaction and investment to encourage businesses and individuals to allocate funds in stock market.

Declaration of Competing Interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

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