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Financial Development and Economic Growth in Pakistan Evidence from Gross Capital Formation and Trade Openness

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ABSTRACT

Economic growth plays a vital role in the development of a country as it directly influences the standard of living. Higher economic growth leads to increased employment opportunities, higher income levels, and improved overall well-being. This study focuses on examining the relationship between financial development and economic growth in Pakistan, a developing country where the financial sector plays a crucial role in economic progress. The study incorporates key factors such as investment and trade openness, which are important determinants of economic growth. Investment reflects the level of capital formation for future development, while trade openness indicates the degree of a country's integration with the global economy. In Pakistan, financial sector development significantly supports small and medium enterprises (SMEs) by providing easier access to credit, thereby promoting job creation. Over time, financial institutions in Pakistan have undergone major reforms, including the introduction of digital banking, improved regulatory supervision, and expansion of modern financial services such as microfinance and mobile banking. These developments have strengthened the financial system and enhanced its capacity to support sustainable economic growth.

This study adopts a quantitative research design using time series data from 2000 to 2024. Secondary data is collected from the World Bank and other reliable sources. The study employs a deductive approach, with Gross Domestic Product (GDP) as the dependent variable, Gross Capital Formation (GCF) as a proxy for financial development, and trade openness as a control variable. The

Ordinary Least Squares (OLS) method is applied using EViews software, along with diagnostic tests to ensure model validity. The results indicate that financial development has a positive and significant impact on economic growth, while trade openness shows a weaker influence. Overall, the study concludes that strengthening the financial sector is essential for achieving sustainable economic growth in Pakistan.

KEYWORDS: Financial Development, Economic Growth, OLS estimation, Gross Capital Formation, Trade openness, Time series Data, Banking sector, Pakistan economy.

1. INTRODUCTION:

Economic growth plays an important role in development of a country as it affects the standard of living. Due to economic growth, more job opportunities are available to people and in response to this, income will increase and overall, well-being enhanced. Many economic experts believe that the financial system includes banks and stock markets, which has important role in economic growth. The purpose of these financial institutions is to collect the savings of people and provide funds to businesses for investment and expansion. When businesses get these funds, they will produce more goods and increase production which eventually helps the economy get stronger.

In Pakistan, the financial sector was not very developed in the past, but over time it has improved. Now, new facilities like mobile banking and digital payment systems are becoming more common. People are availing these financial services because they provide ease to their daily business activities. However, even with these improvements, Pakistan is still facing economic issues like slow growth and lack of investment. Because of this, financial literacy and study of whether financial development is helping the economy in actual is important.

This research focuses on relationship between financial development and economic growth in Pakistan. This topic is very important to study because Pakistan is a developing country and analyzing the role of financial development and how it affects the economy is important. It considers factors like investment and trade openness as they are important indicators that may influence economic growth. Investment shows how much money is being invested and used for future development, while trade openness shows how the country is connected with the rest of the world through trade. By studying all these factors together, this research tries to understand what really affects economic growth in Pakistan.

The long-term economic growth of a country depends on literacy, skills of its population and physical infrastructure. Efficient and effective use of these resources ensures that everyone has access to employment opportunities (Mehmood, 2020). Financial development includes improvements in banks or stock markets which play a very essential role in economic growth. When individuals invest in the stock market, businesses will grow and economy strengthens. In the past, financial institutions allocated funds by collecting household savings in pension funds and then converting them into investments for businesses. This process helped in economic growth by increasing investment opportunities.

In Pakistan, the development of financial sector can help small and medium enterprises by giving them easy loans because they create more jobs than large established companies. However, for these advantages to be fully realized, financial institutions need strict rules and regulations because weak financial policies cause serious problems. Therefore, strong supervision is important. (World Bank, 2023)

Over the years, Pakistan's financial institutions have implemented significant reforms to strengthen its stability and efficiency. It introduced the digital banking system, enhances supervision and adopted the modern financial services like microfinance program and mobile banking. These developments have helped Pakistan to create a more dynamic financial system capable of supporting sustainable economic growth.

Following are the research questions related to the study:

What is the impact of financial development on economic growth in Pakistan? How does gross capital formation affect economic performance? What is the relationship between trade openness and economic growth in Pakistan? To what extent does selected model explain economic growth in Pakistan?

1.1. Research Objectives

The main objectives of this study are:

- To explore how financial development and trade openness is linked with economic growth in Pakistan.
- To examine the role of banks and stock markets in supporting economic activities and investment in the country.
- To understand how financial development helps in supporting small and medium enterprises in terms of growth and employment opportunities.
- To evaluate the impact of financial development and trade openness on Pakistan's economic growth and stability overtime.

1.2. Research Hypothesis

H_0 = Financial Development has no significant impact on economic growth in Pakistan.

H_1 = Financial Development has a significant positive impact on economic growth in Pakistan.

H_2 = Trade openness has no significant impact on economic growth in Pakistan.

H_3 = Trade openness has a significant positive impact on economic growth in Pakistan.

CHAPTER 2

LITERATURE REVIEW

2.1. Theories on Growth and the Financial System

One of the major topics in economics is the financial sector and its link with a country's wealth, mostly emphasizing how new projects are funded by the markets and banks. Some experts trust that helping people save and invest causes the growth of financial system. Others believe that businesses demand banking services after the growth of the financial system. Researchers like Gurley and Shaw (1967) and Goldsmith (1967) claimed that economic growth leads to financial development. Levine and King emphasize that for funding productive investments, financial system is the most essential part. (Schumpeter, 1912; Levin, 1993) Financial development turns saving into investments that boosting growth (Jaden 1990, Beck et al., 2001). McKinnon (1973) specifically supported the "supply leading" view, while Robinson (1952) and Kuznets (1955) suggested that emergence of growing business is followed by financial development.

Researchers like Blackburn and Huang (1998) and Khan (2001) suggests that there is a two-way relationship between the economic growth and financial sector, where one supports the other to grow and influences each other at the same time. Historically this argument has raised questions like "Is

finance really the major driver or simply the result of success of the industries?”. Modern evidence supports that basic savings are being turned into potential investments by financial development to boost national growth. Some researchers find that the effect of financial development on growth in developing countries is still undefined (Kar, Nazlioglu & Agir, 2014; Ibrahim & Alagidede, 2018). Generally, the studies give mixed results about how financial development affects economic growth.

2.2. Using Investment to Measure Success

In order to show how much is being invested in a country’s future, we measure the financial health of the economy by using Gross Capital Formation (GCF). Modernizing banks (digital tools, mobile banking and microfinance programs) establishes a system that makes the economy to grow steadily. It is significant for SMEs in Pakistan because they get better loans that allows them to generate more jobs and expand more quickly as compared to larger companies. Previously, household savings were collected by the institutions to help grow by turning them into business investments. This process is important because without the financial means, physical infrastructure and population skills are not enough for the economy to grow in the modern era.

2.3. The Impact of International Trade

One of the crucial parts of economic growth is trade, but it depends on how better a country’s financial system is. Even though trade activities have an impact on Pakistan’s growth, but this impact can be weak at some times. Research suggests that for long term progress, strong financial system and heavy investment are more important than the trade alone. We have used trade openness as a control variable to make sure that the relationship between finance and growth is not biased. This variable shows how national GDP is influenced by the international participation.

2.4. Connecting Financial Access to National Wealth

Researchers look at how a country’s exports and production improve when trade and financial access work together. A better financial system reduces transaction cost for the individuals and makes the trading easier and more effective. Data shows that financial development and trade both are tied with the economic growth of Pakistan over a long term. Because of this, in order to increase national GDP, it is important to encourage investment and the use of banking services easier for the public. To ensure that these financial advantages lead to stability, strong rules and regulations are necessary. Better resource allocations make sure that every single person even those from small villages have access to employment opportunities. Ultimately, to achieve a sustainable economic growth in Pakistan, it is important to strengthen the financial sector of Pakistan.

CHAPTER 3

RESEARCH METHODOLOGY:

The research methodology involves three main frameworks:

3.1. CONCEPTUAL FRAMEWORK



The conceptual framework shows that financial development and trade openness have a direct relationship with economic growth. The arrows in the diagram represent these direct relationships, indicating that both variables directly influence GDP.

This study is based on Quantitative Approach design to analyze the impact of financial development on economic growth in Pakistan. The main purpose of using this design is to show the relationship variables through numerical data and statistical techniques. The study uses Time series data of Pakistan, which helps in understanding the behavior of economic indicators over a period of time. This type of design is appropriate for researchers to analyze the changes in economic growth which is related to financial development barometers. An Econometric model is applied to estimate the relationship among the selected variables. The data has been analyzed using E-view's software, which helps in running regression analysis and determining the significance of variables.

This study follows a Positivist Research Approach. This approach is used because it focuses on real and measurable data instead of personal opinion and assumptions. In this study, all variables are analyzed through statistical methods to accurate and credible results. Along with this, a Deductive Approach is also used. The study starts with existing economic theories related to financial development and then test these theories using data from Pakistan. The results are then used to confirm whether the theory holds true in selected context or not.

3.2. Variables Description

This study uses both Dependent variables and independent variables to analyze the impact of financial development on economic growth in Pakistan.

Variables	Description
Economic growth	The dependent variable of the study is measured by Gross Domestic Product (GDP). GDP is used as an indicator because it reflects the overall economic performance of the country.
Financial Development	The main independent variable of the study is Gross Capital Formation (GCF), which is used as a proxy for financial development. GCF represents the level of investment in the economy and plays an important role in increasing productive capacity and long-term economic growth.
Trade Openness	In addition, Trade openness is included as control variable in the model. It is used to capture the effect of international trade on economic growth and to ensure that the relationship between these two is not biased. All variables are taken on annual basis for the period 2000-2024 and are analyzed using consistent econometric framework.

3.3. Theoretical Framework

The theoretical framework of this study is built on the connection between financial systems and national production. It uses settled economic theories to explain how the chosen independent variables affects the dependent variable, which is GDP.

3.3.1. The Finance-Growth Nexus (Supply-Leading Hypothesis)

The main theory behind this research is the Supply-Leading Hypothesis. This theory, supported by economists like McKinnon (1973), suggests that the development of financial institutions like banks and stock markets acts as a stronger sign to economic growth. The logic is that when a country improves its financial sector, it provides the necessary "supply" of financial services that businesses need to grow. This study applies this idea by looking at how financial development in Pakistan creates a path for higher economic output.

3.3.2. Capital Accumulation Theory (The Role of GCF)

The use of Gross Capital Formation (GCF) as an important variable and is based on the Theory of Capital Accumulation. In macroeconomics, capital accumulation means building up assets such as machinery, buildings, technology, which help the economy produce more goods and services over time. This study follows the theoretical idea that financial development is only effective if it leads to physical investment. Therefore, GCF is used to show how saving and lending are turned into real investment, which then contributes to the growth of Gross Domestic Product (GDP).

3.3.3. The Open Economy Theory (Trade Openness)

The inclusion of Trade Openness is supported by the Open Economy Growth Theory. This theory explains that a country's growth doesn't only depend on its internal conditions but is also influenced by its connection with the global market. By trading with other countries, a country gets access to better technology and wider markets, which should increase GDP. In this study, trade openness is included as a control variable to ensure that effect of financial development on economic growth is measured while also considering the influence on Pakistan's international trade activities.

3.4. EMPIRICAL FRAMEWORK

Major sources of data include World Bank and various published research articles related to financial development and economic growth to ensure the reliability and completeness of data used in analysis. The study covers a time period of 2000-2024, which allows a comprehensive analysis of long-term trends in Pakistan's economy. This time period is selected to observe the influence of financial development in Pakistan. The study uses Secondary time series data, as all variables are observed over continuous period for country like Pakistan. This type of data is appropriate for econometric analysis.

Model Specification

To examine the impact of financial development on economic growth in Pakistan, the following econometric model is specified:

$$GDP = \beta_0 + \beta_1 GCF + \beta_2 Trade + \mu$$

Where,

- GDP = Economic growth (dependent variable)
- GCF = Gross capital formation (independent variable)
- Trade = Trade openness (control variable)
- β_0 = Constant term
- β_1, β_2 = Coefficients of variable
- μ = error term

3.4.1. Econometric Technique

This study uses the Ordinary Least Square (OLS) method to estimate the relationship between financial development and economic growth in Pakistan. OLS is widely used in econometric analysis and unbiased estimates of parameters when the classical assumptions are met.

The empirical analysis is carried out using EViews software, which is used to run regression analysis and obtain coefficient values along with their corresponding t- statistics and probability

(p-values) measures. The statistical significance of variables is checked to determine their impact on economic growth.

3.4.2. Diagnostic Tests

- Unit root test
 - Regression Analysis (OLS estimation)
 - Multicollinearity test (VIF)
 - Heteroskedasticity test (Breusch pagan Godfrey)

3.5. RESULT:

Unit Root Test (Augmented Dickey Fuller)

VARIABLE	PROBABILITY	DIFFERENCE
GDP growth	0.0111	Level
GCF	0.0303	Level
TRADE	0.0004	First Difference

Unit root test is done to check if the series is stationary or not. It helps in determining whether differencing is needed before modeling. It is checked through Augmented Dickey- Fuller test where, if (*p-value* is < 0.05) series is stationary.

Regression Analysis (OLS ESTIMATION)

VARIABLE	COEFFICIENT	T-STATISTICS	PROBABILITY
GCF	0.229181	8.146141	0.0000
D(TRADE)	0.206653	1.786459	0.0900
AR (1)	-0.542013	-2.060739	0.0533

Regression analysis is done to examine the relationship between dependent variable and one or more independent variable. OLS is common way to estimate regression coefficients. The T-statistics test whether coefficient is significant and it states that if (*t-statistics* is > 2) it is significant. The P-value tells us if (*p value* < 0.10) it is significant.

Model Summary Statistics

Durbin-Watson Statistics	2.120338
R-Square	0.742769
Adjusted R-Square	0.688615

Durbin Watson Statistics is done to check the autocorrelation in the model. It states that:

- If value = 2 then there is no autocorrelation.
- If value is >2 then there is negative autocorrelation.
- If the value is < 2 then there is positive autocorrelation.

R-square measures how well our regression model explains the variation in the dependent variable. If the R-square is above 60% model shows goodness of fit. Adjusted R-square improves R-square by adjusting for the number of variables in the model.

Multicollinearity test (Variance Inflation Factor)

VARIABLES	CENTRED VIF
GCF	1.797731
TRADE	2.019994
AR(1)	1.435129

Multicollinearity occurs when two or more independent variables are highly correlated with each other. One of the way to detect this is through VIF (variance inflation factor). If the centered VIF is < 5 , then there is no serious multicollinearity problem in the model.

Heteroskedasticity Test (Breusch-Pagan Godfery)

Prob. Chi Square	0.3280
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Heteroskedasticity occurs when the variance of the error term is not constant across all observations in a regression model. The Breusch-Pagan-Godfrey test is used to detect the presence of heteroskedasticity in the regression model. The Prob. Chi Square > 0.05 indicates that there is no issue of heteroskedasticity in the model.

INTERPRETATION:

The unit root test shows that GDP and GCF have probabilities of 0.0011 and 0.0303 and both are less than 0.05 which indicates that these variables are stationary at $I(0)$. Trade is non-stationary at level but becomes stationary at $I(1)$. $D(\text{trade})$ is used in the regression analysis to ensure stationarity. The regression analysis states that Gross capital formation has a positive and statistically significant effect on economic growth in Pakistan. The coefficient value of 0.229181 shows that an increase in GCF leads to increase in GDP. The T-statistic and P-value indicates that relationship is significant ($t = 8.15$, $p = 0.000$, $p < 0.10$), showing that investment plays an important role in economic growth. Whereas trade which is included as control variable shows a positive coefficient of 0.206653 indicating an increase in trade leads to increase in GDP. T-statistic suggest that trade is significant as the value is nearer to 2 for significance. For p value it shows significance as the value is less than 10% ($t = 1.79$, $p = 0.090$, $p < 0.10$). To ensure valid estimation, first variables were tested for stationarity, and the result showed that trade is non-stationary at level but becomes stationary at first difference. Therefore, the transformed form of trade was used in the regression analysis.

1. The regression model is estimated by including AR (1) term to correct for auto-correlation. The Durbin Watson statistic value of 2.120338 shows that there is no serious auto-correlation problem in the model, as value is closer to 2. The R-squared value shows that approximately 74% variation in economic growth is explained by independent variables included in the model. Overall shows goodness of fit in the model. Similarly, adjusted R-squared value of 0.688615 indicates that around 69% of the variation in economic growth is explained after adjusting for the number of variables.
2. The Variance Inflation Factor result shows that GCF and Trade both have values < 5 . This indicates that there is no multicollinearity problem among the explanatory variables.

3. The Breusch pagan Godfrey test shows a probability value of 0.3280 which is > 0.05 . This shows that there is no issue of heteroskedasticity problem in the model and the error variance is constant.
4. The base study uses ARDL approach to find the short run and long run relationship among variables whereas this study uses OLS regression and focuses on simpler relation. Despite the difference both studies highlight the importance of financial development in promoting the economic growth in Pakistan. The base study covers time period from 1979 to 2008 and this study uses more recent data from 2000 to 2024.
5. In both studies, financial development is found to have a positive impact on economic growth. In the base study, financial development indicators such as financial sectors show a positive impact in both short and long run. Similarly, in this study, gross capital formation also shows significant effect on economic growth.
6. There is difference in the role of other variables. Base study finds that real interest rates also have positive effect on economic growth, but impact was statistically insignificant. While in the present study, trade (used as a control variable) shows a significant impact on economic growth as compared to financial development.

CONCLUSION / POLICY RECOMMENDATION:

The study was conducted to examine the relationship between financial development and economic growth in Pakistan over the period 2000 to 2024. The study results indicate that the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, showing that financial development has a significant positive impact on economic growth in Pakistan. The result shows that financial development, which is measured through capital formation (investment), has a pivotal role in supporting economic growth. This indicates that improving investment can lead to improving overall economic performance of the country. Financial development also supports economic activity through banking sector and stock markets by improving the flow of funds which further helps the small and medium enterprises access to finance, which overall contributes to business growth and employment generation in economy.

In contrast, trade openness also show an influence on economic growth within the context of this study. Overall, study concludes that strengthening the financial sector, particularly by encouraging investment activities, can be beneficial for sustainable economic growth in Pakistan.

Following are the recommendations:

The government should promote gross capital formation (investment) as it has a strong positive impact on economic growth for better results. Policies should be introduced to encourage domestic and foreign investment in productive sectors of Pakistan. The financial sector should be strengthened to improve saving mobilization and efficient resource allocation.

For trade, government should improve commercial policies and export performance for long-term benefits of Pakistan. Pakistan needs to reduce trade tariffs so local industries can import raw materials and produce goods more cheaply. Secondly, non-tariff barriers (NTBs) such as lengthy inspections and paperwork should be reduced. For minimizing the transaction cost, streamlining the

custom clearance at ports will expedite the process. It can also expand access to international markets by signing trade agreements and infrastructure development.

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