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Effects of Financial Development on Economic Growth in Pakistan: Does FDI Matter?

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Abstract: *This research focuses on the effect of Financial Development (FND) on economic growth, of Pakistan. Time series data from 1980 to 2024 is used in this study and Auto Regressive Distribution Lag (ARDL) technique is used to estimate the regression result. GDP growth, Foreign Direct Investment (FDI), domestic credit to private sector by bank, are the variables used in this study. Long run relationship is found between FND and economic growth. The long run coefficient results indicate that FND and FDI alone are negatively associated with economic growth. However, interaction of FND and FDI possesses significant positive effect on economic growth. This study suggests that FND and FDI are the important factors to solve the pertained low economic growth issue of Pakistan. As a policy recommendation, this study invites to follow the creditable policies for inviting FND and FDI due to having a significant potential for favouring economic growth.*

Key Words: Financial Development, Economic Growth, ARDL

Introduction

FND is a way that develops a deeply, secure, successful, and comprehensive system of finance. This entails increasing the availability of financial services accessibility, encouraging the growth of a variety of economic institutions, and guaranteeing the stability and regulatory supervision of these organizations (The World Bank, 2023) It is believed that encouraging stability in the economy, advancement of the economy, and poverty reduction all depend heavily on FND. According to the International Monetary Fund (IMF) FND is essential to fostering stability and economic advancement. FND is crucial to a country's total stability in the economy. The financial sector has emerged as a result of the founding and growth of companies along with institutions that facilitate large growth in the economy, and the elimination of poverty (Guru & Yadav, 2019). To know the relationship between financial market development and economic growth, scholars have gained supplementary insights on the correlation between finance and growth, as well as a more audacious assessment of the causative connection. Investigations conducted at the business, sector, and cross-national levels collectively indicate that the degree of FND significantly contributes to economic growth. FND is the expansion and advancement of a nation's banking organizations and mechanisms, with in a nation, risk administration, allocation of capital, and growth in the economy are all made possible by FND. FND raises growth in the economy, lowers poverty, and raises human standards of living. Advancements in finance have been essential to the nation's economic growth. To evaluate the state of financial services and comprehend how FND affects both the growth of the economy and the decrease of poverty, it is imperative to have an accurate indicator of FND. According to

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Asian Development Bank, FND comes before growth in the economy and promotes it by introducing novel goods and programs, Schumpeter (1961).

Positive effect of FND in developing world is the availability of strong banking and financial markets, in especially, may encourage a greater amount of both local and foreign participation and FND also shows positive effect in developed countries with better growth in the economy by supplying better ways for distributing capital, developed banking systems may promote growth in the economy through promoting greater investing, greater efficiency, and general growth in the economy.

Economic growth issue is still there. Heavy flow of capital from the banking sector seems to be less expressive in deepening unemployment pressures and also poverty is not reducing to the significant level even at the back of reasonable statistics of economic growth. By this study, the intension is to locate the relationship between FND and economic growth thus the study is significant because these variables, promote economic and growth in the economy while opposing measures undermine development. IMF member nations collaborate with one another and with additional global bodies to carry out these tasks. According to IMF Projects, the growth rate of Pakistan economy in 2023 is faster economic growth for Pakistan is 2.5% in 2023. And Pakistan's GDP increased by $376.53 billion, 8.12% increase from 2021-22, and $348.26B, a 15.92% increase from 2021-22 and $300.43B, a 6.38% decline from 2019-20, and $320.91B, a 9.89% decline from 2018-19.

In present study, FND and FDI are conceptualized together since both are welcomed to address the issue of economic growth. FND enables companies to grow outdoors by raising the utilization of both labour and capital, as opposed to shifting the more expensive technologies beyond by projecting a boost in worker efficiency and cost. In 2023, Pakistan's net GDP declined to $340.64B.

Table 1

Economic Growth and Financial Development Percentage in Pakistan

Year	Economic Growth (GDP) %	Financial institution index %(FND)
2010	-0.65	0.25
2011	0.60	0.25
2012	1.66	0.26
2013	2.80	0.26
2014	3.20	0.26
2015	3.38	0.26
2016	4.26	0.26
2017	3.05	0.26
2018	4.53	0.26
2019	0.86	0.27
2020	-2.97	0.27
2021	4.55	0.27
2022	4.19	0.27

Table 1 shows that economic growth of Pakistan in 2010 was negative -0.65, in 2013 it recovered and reached the level of 2.80. By 2016, economic condition further improved and turned to 4.26. In 2017, economic growth was again down to 3.05. In 2020, economic growth was -2.97 which indicates that it decreased into negative figure and, in 2022 again it got recovered and reached at 4.19. In 2010 financial institution index is collected from IMF in which development was 0.25 with the passage of time FND increasing year by year financial institution index 2014 that was 0.26, and in 2017 financial institution index was 0.26, in 2019 that financial institution index was 0.27 improve, in 2021, financial institution index 0.27 in 2022.

Section I is written for the Introduction. Section II, III, and IV are elaborated on Literature Review, Methodology, and Results and Discussion. And Section V gives a brief Conclusion and Policy Recommendations.

Literature Review

Christopoulos and Tsionas (2004) used panel unit root testing and panel co-integration for investigating the long-term relationship among financial depth and economic growth. The findings revealed that depth and development of resources extra variable determine a single equilibrium connection that suggests financial depth and economic growth have causal connections in a direction. This was attained through employing the OLS model to change long-run relationship data collected from ten countries that are developing.

The main objective of the study of Zia et al. (2024) was to examine how Pakistan's economic growth is impacted by FDI, inflation, interest rates, and currency rates. Data from 1970 to 2022 was used in the study. Using an Auto Regressive Distributed Lag (ARDL) model, the study examined the immediate and long-term effects of macroeconomic factors on Pakistan's economic growth. The Augmented Dickey-Fuller (ADF) unit root test was used to check for stationarity in this model. The long-term relationship between the variables was confirmed using the ARDL bond test. There results showed that inflation and the real interest rate have a negative and insignificant effect on economic growth, FDI and the exchange rate have a positive and significant impact over the long term.

Gries et al. (2009) used the influence test and the Hsiao-Granger Model to look at the research and discovered that trade openness and financial strengthening contributed to the economic development of Sub-Saharan African countries, whereas financial deepening had no beneficial impact. As a consequence, the researchers decided that trade policy was unable to promote economic growth either.

Naeem et al. (2024) Studied the industrialized economies which showed that relationship between economic growth and green FND is positive. Nevertheless, due to developing nation, Pakistan included is less intrigued by this particular problem. Naeem et al. (2024) used time-series data analysis on economic growth and green FND from 1990 to 2022. The study's findings showed that there was a correlation, both short- and long-term, between economic growth and green financial growth. Multivariate and bi-variate co-integration results indicated that economic growth has a long-term important relationship with all these parameters. Investment in green jobs, green health coverage, and green energy in green production are all impacted by green employment. There is a direct and dynamic relationship between economic growth and other green characteristics in short and long term.

According to Dhrifi (2015) and Abida et al. (2015), financial breakthroughs have significant impact on the economies with low incomes. The connection between FND and economic growth has been shown by qualitative investigations on the connection between poor and both growth triangle components and FND and disparities (Honohan,2004.; Odhiambo, 2009; Azra, et al. 2012; Uddin, et al. 2013; Quartey,2005). Panel data and the GMM model were utilized to display the beneficial connection between economic growth and FND to highlight potential advantages of economic freedom. The findings underlined the need to maintain the monetary adjustments that have been made since the mid-1980s and to increase the efficiency. Financial institutions are not meant to promote savings and investments as a means for achieving long-term economic expansion. The researchers have additionally discovered that while innovations in the banking sector increased the distribution of income disparities in low- and middle-income countries, they decreased disparity in high-income ones (Shamim et al., 2014).

Desbordes and Wei (2017) examined the empirical method to trace secondary effects of FND on FDI resulting from the influence of FND on net output, as well as the different immediate effects of FND on FDI. FND has significant favourable effects on FDI in nations that are developing, development, and where acquisitions and mergers are not less frequent due to their directly monetary policy stances and indirect promotion of manufacturing activities. Their total economic implications can be frequently comparable since FND has varied both direct and indirect implications on many different FDI sectors and categories.

Rahman et al. (2020) applied the Markov Switching Model to see the way FND promotes the growth of the economy in Pakistan. For the purpose to investigate whether the development of finance promotes the growth of the economy in Pakistan, Rahman et al. (2020) employed Odedokun (1996) Development Theory. This Study highlighted that in Pakistan, FND helps promote growth. It also suggests that in low-growth and fast-growing governments, the manner that the economy adjusts to FND is different because financial markets account for non-banking financial institutions, equity, and bond markets. Odedokun (1996) also

confirmed that trade openness and government expenditures have positive impact on economic growth while labour force exerts a negative impact on economic growth.

Tariq et al. (2020) employed a threshold-based regression model. The study focused on the regressive connection between financial growth and economic development in Pakistan over 1980 to 2017. The fundamental concept of quantitative regression is the total of quadratic result reduction. The end result suggested that FND have a beneficial effect on the growth of the economy. The outcomes suggested there is a U-shaped connection among financial growth and economic development in Pakistan and that economy growth react in different ways to the development of finance. Employees, physical assets, spending by the government play a role in growth in the economy. Openness to trade and the rate of inflation have little effect on economic growth. The irregular connection between the development of finance and economic expansion in Pakistan has been strengthened by quantitative regression analyses. Moreover, King and Levine (1993) and Levine and Zervos (1998) ultimately reached an understanding that growth and finance have a beneficial relationship, but Fisman and Love (2002) indicated an analogous connection between FND, firms, and industries correspondingly.

Similarly, Osei & Kim (2023) investigated the relationship between growth impacts and foreign direct investment in the financial sector. Regression research shows that one important factor impacting the structure of integration unions is FND. The results of the study also demonstrated that there is heterogeneity and a threshold impact in the connection between growth and FDI which highlights the "vanishing" along with the "kick-in" implications of FND. Hosted societies need to maximize the advantages of FDI through the introduction of policies aimed at both drawing more FDI while improving local financial standards.

Methodology

Data Source

This study sights that FND and FDI play an important role in the economic growth. For the analysis dependent upon secondary data, the time series data is collected from World Development Indicator (WDI), International Monetary Fund (IMF) and Pakistan Economic Survey from 1980-2024.

3.2 Model Specification

The Multiple form of general regression model is given in Eq. [1].

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots\ldots\ldots + \beta\eta X\eta + \mu \quad (1)$$

$\alpha = intercept$

$\beta = coefficient$

$\mu = error\ term$

The abbreviation form and operational definitions are given in Table 2.

Table 2

Measurement of Variable Description

Variable	Short form of variable	Operational Definition Measurement	Source
GDP growth (annual %)	GDPG	It's the annual growth rate of a country's economy adjusted for inflation, measured in a standard currency. It captures the value of all goods and services produced, excluding subsidies and depreciation.	WDI
Foreign direct investment, net inflows (% of GDP)	FDI	FDI measures the net investment flow into a foreign economy, representing ownership stakes of 10% or more. It includes equity, reinvested earnings, and other capital, divided by GDP.	WDI
Domestic credit to private sector by banks (% of GDP)	DCPSB	Banks' domestic lending to the private sector represents the funds lent to businesses and individuals by banks, including loans, securities purchases, and trade credits. It establishes a repayment obligation and excludes central banks.	WDI

Variable	Short form of variable	Operational Definition Measurement	Source
Financial Institutions Depth Index	FND	IMF's Financial Institutions Depth Index is like a map, showing how good a country's financial system is. It helps countries make their financial systems better, so everyone can have more opportunities for banking and investing, leading to prosperity.	WDI & IMF

Empirical analysis

Unrestricted ARDL Model

Equation

$$GDP_t = \alpha + \beta_1 FND + \beta_2 FDI + \beta_3 FDI \times FND + \beta_4 DCPSB + \mu_t \quad (2)$$

Long Run Unrestricted ARDL Model

The purpose of the research is to assess the stationary patterns of the variables using the unit root test in order to find out the long-term relationship between variables. Cointegration, also can be proven to exist using the ARDL model if a variable shows stationary patterns at different integrated levels, such as I (0) or I (1).

$$GDPG = \alpha + \beta_1 GDPG_{t-1} + \beta_2 FND_{t-1} + \beta_3 FDI_{t-1} + \beta_4 FDI \times FND + \beta_5 DCPSB_{t-1}$$
$$+ \sum_{i=0}^{\rho 1} \delta_1 \Delta GDPG_{t-i} + \sum_{i=0}^{\rho 2} \delta_2 \Delta FND_{t-i} + \sum_{i=0}^{\rho 3} \delta_3 \Delta FDI_{t-i} + \sum_{i=0}^{\rho 4} \delta_4 \Delta FDI \times FND + \sum_{i=0}^{\rho 5} \delta_1 \Delta DCPSB_{t-i} + \mu_t \quad (3)$$

Where.

β_1 = long run multipliers

δ = short run dynamics parameters

Δ = first diffrence

μ_t = error term

Long run coefficient found by following equation

$$GDPG = \alpha + \sum_{i=0}^{\rho 1} \eta 1\, GDPG_{t-i} + \sum_{i=0}^{\rho 2} \eta 2 FND_{t-i} + \sum_{i=0}^{\rho 3} \eta 3 FDI_{t-i} + \sum_{i=0}^{\rho 4} \eta 4 FDI \times FND_{t-i} + \sum_{i=0}^{\rho 5} \eta 5 DCPSB_{t-i} + \mu_t \quad (4)$$

α = coefficient

η = long run parameter

μ = error term

If the smaller bond value is greater than the F-statistics value, then an extended relationship is not conceivable. Building the short-term relationship with ECT happens next after building the long-term relationship. The following equation (5) represents the short-term relationship by ECT in its functional form Model.

Short Run Coefficient Estimation Model

This can be achieved by employing the Error Correlation Technique (ECT). There are following equation represent the specified version of the ECT.

$$\Delta GDPG = \alpha + \sum_{i=0}^{\rho 1} \lambda 1\, \Delta GDPG_{t-i} + \sum_{i=0}^{\rho 2} \lambda 2 \Delta FND_{t-i} + \sum_{i=0}^{\rho 3} \lambda 3 \Delta FDI_{t-i} + \sum_{i=0}^{\rho 4} \lambda 4\, \Delta FDI \times FND_{t-i} + \sum_{i=0}^{\rho 5} \lambda 5 \Delta DCPSB_{t-i} +$$
$$\omega ECT + \mu_t \quad (5)$$

λ = show short run parameters

In which

GDPG= GDP growth

FND= Financial institution depth index

FDI=Foreign direct investment

DCPSB=Domestic credit to private sector bank

μ_t = Error term

$\beta_1, \beta_2, \beta_3, \ldots\ldots\ldots \beta_n$ are the coefficient, α is an intercept, and μt is the error term of the model. In equation (2) GDPG is dependent variable and FND, FDI, FND×FDI DCPSB are the control and main independent variable.

Sensitivity Analysis

This study evaluates the validity of various tests that were carried out on the models. Breusch-Godfrey Serial Correlation LM Test, Breusch-Pagan-Godfrey Histogram heteroscedasticity Test, Ramsey RESET

Evaluation, Histogram-Normality Test, and CUSUM Squared are some of the tests that are included under this group of tests.

Results and Discussions

The objective of this study is to succinctly and clearly explain the economic growth outcome of FND and FDI. The description of the results is provided in the following section.

Descriptive Statistics

Descriptive statistics, an instance of statistical model, describe and explain the key features of a sample or dataset. In alongside measurements of central tendencies such as mean, maximum, and minimum. It also indicates the computation of measurement of variation such as range, variance, and standard deviation. This allows for an improved understanding of the data.

Table 3

Descriptive Statistic

	DCPSB	FDI	FDI×FND	FND	GDPG
Mean	21.12	0.80	0.08	0.09	4.77
Maximum	29.79	3.04	0.38	0.12	10.22
Minimum	13.80	0.10	0.01	0.07	-1.27
Std. Dev.	4.43	0.64	0.07	0.01	2.22
Skewness	-0.21	2.15	2.59	0.82	-0.14
Kurtosis	1.87	7.42	9.60	3.97	3.26
JB	2.61	68.14	126.26	6.49	0.26
Prob	0.27	0.00	0.00	0.04	0.88

Table 3 represents the descriptive analyses of the selected variables. The mean value of FDI×FND and of FND alone is quite close to each other. Wider dispersion is found at all the variables however, FDI×FND have minimum deviation from its mean value, which Standard Deviation is taken into an account. The skewness track of -0.21 implies that the DCPSB dataset for the chosen time is negatively skewed. The value of FDI, FDI×FND, FND, are 2.15, 2.59 and 0.84 are located to be positively skewness.

Each variable's peakiness is determined via the Kurtosis. The value of DCPSB is less than 3 which show the distribution of these variable is platykurtic. Whereas rest of the variables are positioned to be leptokurtic. The standard deviation of a variable's normal and non-normal variability is called Jarque-Bara. Findings show that DCPAB and GDPG are normally distributed.

Table 4

Pair-wise Correlation Result

	DCPSB	FDI	FDI×FND	FND	GDPG
DCPSB	1.00				
FDI	0.02	1.00			
FDI×FND	0.01	0.99	1.00		
FND	-0.10	0.71	0.76	1.00	
GDPG	0.10	-0.19	-0.15	0.00	1.00

Correlation

The statistical association between two or more variables is referred to as correlation which is given in Table 4, and it measures how strongly the variables are related to one another. Correlation is often measured using a correlation coefficient, that falls from -1 to 1. When both variables move in the same direction, there is a perfect positive link, shown by a correlation value of 1. The variable in an ideal negative correlation takes the opposite direction and has a coefficient of -1. DCPSB is found to have weak correlation with rest of the variables. However, FDI and FND are found to be significantly correlated.

Empirical Analysis

The only method that is frequently used to stratify data on the risk factor under study is empirical analysis. In order to do this, the data must be divided into groups or strata according to particular traits or variables. For each stratum, the estimated risk of an event of interest is used to test the hypothesis on its association. Three particular tests are addressed in the framework of the study: unit root test, an autoregressive distributed lag (ARDL) test, and bond test of cointegration.

Unit Root Test

A statistical method used to determine if a time series passes the unit root test. A unit root test reveals a series is non-stationary, indicating it does not display long-term trends before converging to a stable mean. In Table 5, Augmented Dickey-Fuller test results are given. To determine if the time series data is stationary or not, the Augmented Dickey-Fuller test is utilized. Some variables are stationary at level such as FDI, while other variables like; are stationary at 1st difference.

Table 5

Unit Root Analyses

Variable	Computed Statistic	t-Statistic	Conclusion
DCPSB	-3.60	-6.25	I (1)
FDI	-3.60	-4.36	I (0)
FND	-3.60	-5.23	I (0)
FDI×FND	-3.42	-4.15	I (1)
GDPG	-3.61	-6.83	I (1)

Bound Test of Cointegration

The Bound test of cointegration is a statistical model used to assess if a long-term relationship exists between variables of concern. The outcome is given in Table 5. To accomplish this, it is necessary to estimate an ECT that includes relevant variables and the initial difference.

The H_o or the coefficient on the first differenced variable, assumes that there is no long-term connection in the bound test. Cointegration occurs, establishing that there is cointegration between the variables, if the hypothesis H_o is rejected. To identify whether there is a long-term organization, the following linear model is developed:

Model: $GDPG = f(FND, FDI, FDI \times FND, DCPSB)$

ARDL Bound test

Sample: 1980 to 2024

***Ho*:** No long-run Relationship

Table 6

Test Result Bound ARDL

Test Statistic	Value	K
F-statistic	8.86	4
Critical values		
Significance	**I (0)**	**I (1) Bound**
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Cointeq. and the six independent variables have a long-run relationship, according to an ARDL Table 4.4 shows that bound test is performed on sample data. As the F-statistic of 8.868751 is higher than the upper bound of 4.01 at the 5% confidence level. Thus, the model demonstrates the presence of a long-run relationship.

Autoregressive Distribution Lag

In comparison to other econometric techniques, the ARDL model is considered the best when the variables have order of integration I (0) or I (0). It surpasses other analytical techniques in calculating the independent variable's short- and long-term effects, according to the study's objectives. This study constructs an additional linear model to test if both the cointegration and log-run form occurs.

Model: $GDPG = f(FND, FDI, FDI \times FND, DCPSB)$

The ARDL approach is utilized in this study by EViews for the purpose of calculation, and the findings are presented under in the Table 7. The ARDL model is used for estimating and analysing the individual variables along with their importance.

Table 7

Long-Run Results

Dependent variable (GDPG)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Pro.**
FND	-122.56	54.51	-2.25	0.04
FDI	-21.53	4.08	-5.27	0.00
FDI×FND	195.13	38.96	5.01	0.00
DCPSB	0.06	0.04	1.54	0.14
C	16.36	5.06	3.23	0.00

To check for the cointegration and long-term exists, the linear ARDL model is developed: The long-term coefficient of FND is -122.56 which is statistically significant. It demonstrates a negative correlation between FND and GDPG. One unit increase in FND causes GDPG to lower by -122.56 unit which is negative coefficient. Adu (2013) found that a single proxy of FND cannot suitably capture the impact of FND. Kose (2009) found the same results while analyzing how financial globalization affects economic growth while accounting for the effects of debt and FDI.

According to Svirydzenka (2016), FND is not an important predictor of GDPG. Improper use of liquidity also posts no effect on GDP (Shah et al., 2023). Coefficient of FDI is -21.53 which is statistically significant and demonstrates of a long-run relationship. This suggested that 1 unit increase in FDI will cause 21.53, unit decrease in GDP. It is less astonishing since foreign capital inflows like foreign debt also post negative effects on GDP if the funds usage is improper (Reinhart, 2010; Shah et al., 2023).

But in this study, long-run coefficient of FDI×FND is 195.13 and statistically significant with direct relationship over time with GDPG. Therefore, this study makes a mark to inspire that alone FND and FDI are less efficient in resulting economic growth. However, the together effect of both is significant and positive. Coefficient of DCPSB is insignificant however positive. The intercept of the model is statistically significant which ascertain that the omitted variables are of significant impact on dependent variable.

In recent, Cavallaro and Villani (2022), Cheng and Hou (2021), and Wen et al. (2022) pledged that financial development posts negative long-run effect on the economic growth of the advanced countries. The findings of this study thus are not blamed to indicate the same relationship since the financial mismanagement causes to vary economic growth in otherwise direction while financial development alone is taken into account (Cheng & Hou, 2021). The impacts can vary depending upon the potential of the recipient countries towards the adaptability of such finances (Cavallaro & Villani, 2022). To Wen et al. (2022), prudent lending practices do ensure the positive contribution of financial development towards the economic growth.

Table 8

Short-Run Results

Dependent Variable (GDPG)				
Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
D (GDPG (-1))	0.624	0.202	3.094	0.007
D(FND)	-187.986	89.518	-2.100	0.051

Dependent Variable (GDPG)				
Variable	Coefficient	Std. Error	t-statistic	Prob.
D (FND (-1))	-7.963	108.290	-0.074	0.942
D (FND (-2))	-206.954	120.519	-1.717	0.104
D (FND (-3))	360.576	105.375	3.422	0.003
D(FDI)	-4.197	4.624	-0.908	0.377
D (FDI (-1))	12.973	5.189	2.500	0.023
D (FDI (-2))	-0.189	5.708	-0.033	0.974
D (FDI (-3))	21.100	6.049	3.488	0.003
D(FDI×FND)	74.299	45.066	1.649	0.118
D (FDI×FND (-1))	-126.675	53.469	-2.369	0.030
D (FDI×FND (-2))	39.155	57.015	0.687	0.502
D (FDI×FND (-3))	-211.481	57.565	-3.674	0.002
D(DCPSB)	0.068	0.239	0.284	0.780
D (DCPSB (-1))	-0.384	0.302	-1.269	0.222
D (CPSB (2))	-0.296	0.180	-1.642	0.119
CointEq (-1)	-0.895	0.138	-6.502	0.000

The short run results are given in Table 8. the results show that the one-year lag value of GDPC is negative and statistically significant. Importantly, FND is found to post negative impact on GDPG at first difference. But the results are mixed when throughout the seirs of FND is viewed. For instance, at three years lag, the economic growth-related impact of FND is significant and positive, similar to FDI. Therefore, even the separate results of FND and FDI on GDPG are also not deniable to be positive towards GDPG in short run. It is important to note that the effects of FDI×FND are negative at one year and three years lag while having rest of the values to be statistically insignificant. The relationship between FND and economic growth is non-monotonic and regime-dependent in developing countries like Pakistan, Rehman et al. (2020). Coefficient of error term is also correctly specified and does show significant adjustment of disequilibrium.

Sensitivity Analysis

Sensitivity analysis is used to predict outcomes in the research findings to be valid. The present investigation focuses on the test's dependability that is performed on the framework of model, such as Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test: Breusch-Pagan-Godfrey, Histogram-Normality test Ramsey RESET test.

Breusch-Godfrey Serial Correlation LM Test: Model

Relating to a specific lag, represent "p" in the residual of a regression model Breusch-Godfrey test to be used when assessing autocorrelation of any order. Reference to Table 9, the *Ho* hypothesis holds that there is no serial correlation in the model estimation.

Table 9

Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test: Model			
F-statistic	1.53	Prob. F (9,8)	0.27
Obs*R-Squared	24.70	Prob Chi-Square (9)	0.20

Heteroskedasticity Test: Breusch-Pagan-Godfrey

A statistical framework known as Godfrey-Breusch-Pagan tests the relationship between the independent variable and squared residual is analysed using heteroskedasticity and the results are viewed in Table 10. The test includes regressing a squared residual on the independent variable and then testing the significance of the coefficient related to the independent variable. When a test produces a statistically significant result, heteroskedasticity may be present.

Table 10

Heteroskedasticity Test, Breusch -Pagan-Godfrey

Heteroskedasticity Tast, Breusch -Pagan-Godfrey			
F-statistic	0.47	**Prob. F (21,17)**	0.94
Obs*R-squared	14.33	**Prob. Chi-square (21)**	0.85
Scaled explained SS	3.10	**Prob. Chi-square (21)**	1.00

The specific happening of the F statistic has a value of 0.47 and 0.94 for the p-value. This measurement, in Table 10, is used to test the *Ho*, which is indicating that insufficient information exists to rule out the hypothesis that there is no heteroskedasticity.

Ramsey RESET Test

A tool for diagnosis used to look for potential basic form of model specification is the Ramsey RESET test.

Table 12

Ramsey RESET Test

Statistic	Value	df	Prob.
F-statistic	2.14	(3, 14)	0.14

Table 12 encourages to write that the regression model analysed with ARDL is correctly specified.

Histogram-Normality Test

The Jarque-Bera test of normality indicates that the data set is derived from a sample whose distribution is regularly distributed.

Figure 1

Jarque-Bera Test of Normality

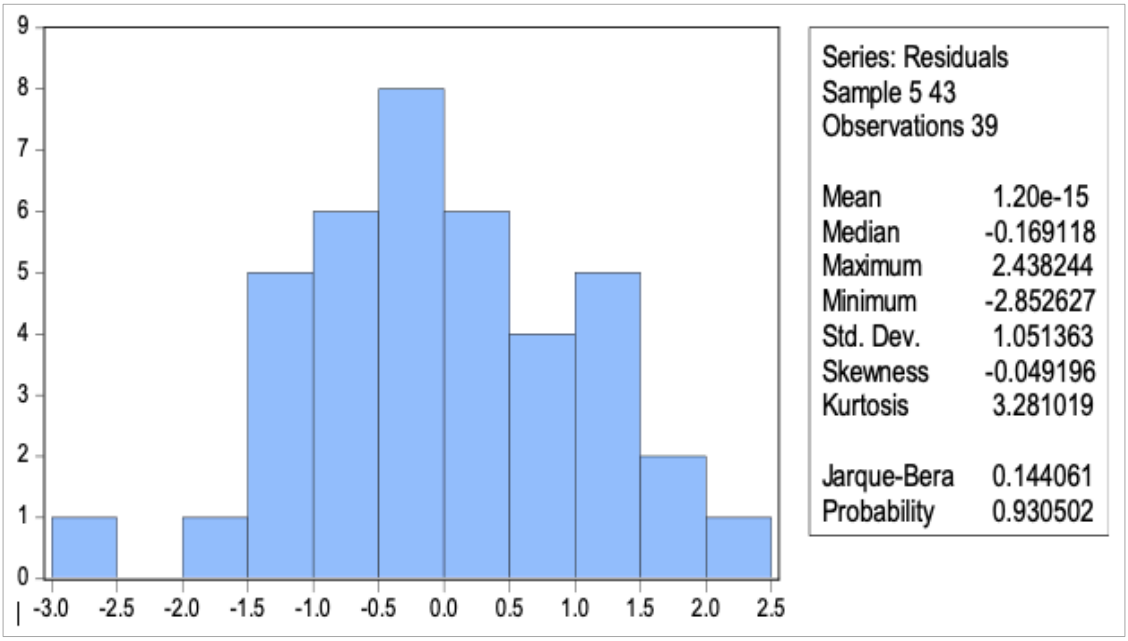


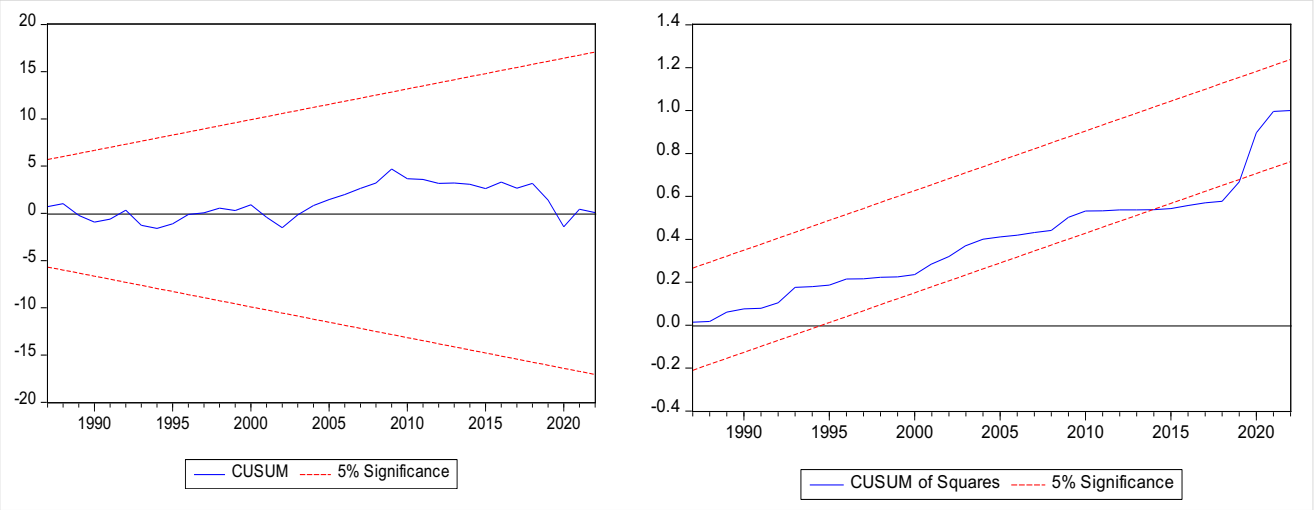
Figure 1 confirms that it is unable to rule out the hypothesis that the residual does, in fact, follow a distribution that is normal.

CUSUM Test and CUSUM Squared

A part of the diagnosis is CUSUM. Model enables the identification of the estimated values of parameters for both the long and short terms and the CUSUM graph is within the five percent significance range.

Figure 2

CUSUM and CUSUM of squares



In order to find whether that there is a structural break, CUSUM squared test is applied and shown in Figure 2. In addition, the H_o shows the structural stability of the coefficients. At each model, the CUSUM squared test reveals no evidence of such instability in the structure. The H_o is not rejected since the CUSUM squared sequence exists within the vital range. Each model's coefficients are hence stable and consistent.

Conclusion & Policy Recommendation

Conclusion

The present research focuses on how FND affects economic growth in the context of Pakistan. Time series data from 1980 to 2024 were used in this investigation. The ARDL approach is employed for data estimation.

In the prescribed ARDL model, long run coefficient of domestic credit to private sector bank has an insignificant relationship with GDPG. The ARDL model shows a statistically significant but inverse relationship between GDP growth and FND as well as FDI over the years. It is worth noticing that the combined effect of FND and FDI is significantly positive in long run. In the short run, coefficient FDI×FND has significant inverse relationship with GDPG. Therefore, it is concluded that the effects of FND and FDI are long-term traceable while economic growth is a matter of concern.

Policy Recommendation

To improve the beneficial effect of domestic credit on economic growth, the federal government should increase the efficacy of domestic credit. It is essential to create concentrated policies for attracting FDI to businesses with significant potential for creation of employment and economic growth. Policies that combat depressing economic growth should be implemented by the government in quick session of time for the long-term outlook of better economic status.

Throughout periods of recession, the government should implement temporary employment programs to mitigate the adverse impacts on GDP growth in-line with the FND and FDI. To foster employment elasticity to rapidly adapt to developments in the economy.

To ensure that foreign investments benefit local residents, the government needs to establish laws that relate FDI benefits to positive economic growth spell-outs in compliment with FND.

References

Abida, Z., Sghaier, I. M., & Zghidi, N. (2015). Financial development and economic growth: Evidence from North African countries. *Economic Alternatives, 2*(1), 17-33.

Azra, A., Dilawar Khan, D. K., Ejaz Ahmad, E. A., & Jan, W. U. (2012). Financial development and poverty alleviation: time series evidence from Pakistan. https://www.cabidigitallibrary.org/doi/full/10.5555/20133079903

Cavallaro, E., & Villani, I. (2022). Beyond financial deepening: Rethinking the fiance-growth relationship in an uneven world. *Economic Modelling*, *116*, https://doi.org/10.1016/j.econmod.2022.106009

Cheng, S.-Y., & Hou, H. (2022). Financial development, life insurance and growth: Evidence from 17 European countries. *The Geneva Papers on Risk and Insurance Issues and Practice, 47*(4), 835–860. https://doi.org/10.1057/s41288-021-00247-1

Christopoulos, D. K., & Tsionas, E. G. (2004). Financial development and economic growth: evidence from panel unit root and cointegration tests. *Journal of Development Economics, 73*(1), 55–74. https://doi.org/10.1016/j.jdeveco.2003.03.002

Desbordes, R., & Wei, S. J. (2017). The effects of financial development on foreign direct investment. *Journal of Development Economics, 127*, 153-168. https://www.sciencedirect.com/science/article/abs/pii/S0304387817300184

Dhrifi, A. (2015). Financial development and the "growth-inequality-poverty" triangle. *Journal of the Knowledge Economy, 6*(4), 1163–1176. https://doi.org/10.1007/s13132-014-0200-0

Fisman, R., & Love, I. (2003). Trade credit, financial intermediary development, and industry growth. *The Journal of finance, 58*(1), 353-374. https://doi.org/10.1111/1540-6261.00527

Gries, T., Kraft, M., & Meierrieks, D. (2009). Linkages between financial deepening, trade openness, and economic development: Causality evidence from sub-Saharan Africa. *World Development, 37*(12), 1849–1860. https://doi.org/10.1016/j.worlddev.2009.05.008

Guru, B. K., & Yadav, I. S. (2019). Financial development and economic growth: panel evidence from BRICS. *Journal of Economics, Finance, and Administrative Science, 24*(47), 113–126. https://doi.org/10.1108/jefas-12-2017-0125

Honohan, P. (2004). Financial development, growth and poverty: how close are the links?. In *Financial development and economic growth: Explaining the links* (pp. 1-37). London: Palgrave Macmillan UK. https://link.springer.com/chapter/10.1057/9780230374270_1

King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *The Quarterly Journal of Economics, 108*(3), 717–737. https://doi.org/10.2307/2118406

Levine, R., & Zervos, S. (1998). Stock markets, banks, and economic growth. *American economic review*, 537-558. https://www.jstor.org/stable/116848

Naeem, M., Hamid, K., Ahmad, W., & Rasool, F. (2024). Casual and dynamic linkage between economic growth and green financial development in Pakistan. *International Journal of Business and Economic Affairs, 9*(1), 28-39. https://doi.org/10.24088/IJBEA-2024-91003

Odedokun, M. O. (1996). Alternative econometric approaches for analysing the role of the financial sector in economic growth: Time-series evidence from LDCs. *Journal of development economics, 50*(1), 119-146. https://doi.org/10.1016/0304-3878(96)00006-5

Odhiambo, N. M. (2009). Interest rate reforms, financial deepening and economic growth in Kenya: an empirical investigation. *The Journal of Developing Areas, 43*(1), 295-313. https://doi.org/10.1353/jda.0.0044

Osei, M. J., & Kim, J. (2023). Financial development and the growth effect of foreign direct investment: Does one size fit all? *International Economics, 173*, 276–283. https://doi.org/10.1016/j.inteco.2023.01.001

Quartey, P. (2008). Financial sector development, savings mobilization and poverty reduction in Ghana. In *Financial development, institutions, growth and poverty reduction* (pp. 87-119). London: Palgrave Macmillan UK. https://link.springer.com/chapter/10.1057/9780230594029_5

Rahman, A., Khan, M. A., & Charfeddine, L. (2020). Financial development–economic growth nexus in Pakistan: new evidence from the Markov switching model. *Cogent Economics & Finance, 8*(1), 1716446. https://doi.org/10.1080/23322039.2020.1716446

Shah, A. A., Younas, R., Junaid, K. M., & Iqbal, M. (2023). Attaining economic growth through financial development and external debts: evidence from emerging economies. *Research Journal for Societal, 5*(1), 224-240. http://dx.doi.org/10.56976/rjsi.v5i1.58

Schumpeter, J. A., & Swedberg, R. (2021). *The theory of economic development*. Routledge. https://doi.org/10.4324/9781003146766

Tariq, R., Department of Management Sciences, COMSATS University, Islamabad, Pakistan, Khan, M. A., & Rahman, A. (2020). How does financial development impact economic growth in Pakistan?: New evidence from threshold model. *Journal of Asian Finance Economics and Business*, 7(8), 161–173. https://doi.org/10.13106/jafeb.2020.vol7.no8.161

Uddin, G. S., Sjö, B., & Shahbaz, M. (2013). The causal nexus between financial development and economic growth in Kenya. *Economic Modelling*, 35, 701-707. https://doi.org/10.1016/j.econmod.2013.08.031

Wen, J., Mahmood, H., Khalid, S., & Zakaria, M. (2022). The impact of financial development on economic indicators: a dynamic panel data analysis. *Economic Research-Ekonomska Istraživanja*, 35(1), 2930–2942. https://doi.org/10.1080/1331677x.2021.1985570

Zia, A., Ali, M. Z., Jamil, M. N., Mukhtar, Z., Yaqub, K. Q., & Javed, K. (2024). The impact of financial monetary economic variables on economic growth. *Kashf Journal of Multidisciplinary Research*, 2(01), 1–18. https://doi.org/10.71146/kjmr185