



## The Role of Macroeconomic Factors in Shaping Financial Development: Evidence from Pakistan

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### Abstract

This study aims to empirically examine the relationship between key macroeconomic factors—financial development, inflation, interest rate, trade openness, and exchange rate—and their influence on FD in Pakistan. By analyzing the period from 1993 to 2023, the research seeks to provide a comprehensive understanding of how these variables interact and impact financial development in the country. The study utilizes secondary time series data gathered annually in Pakistan between 1993 and 2023. The data for all variables was sourced from the World Bank. An Ordinary Least Squares (OLS) analysis was employed due to its optimistic and holistic perspective, which is critical for this investigation. The study examines the correlation and regression analyses to determine the relationships between financial development and the selected macroeconomic variables. The correlation analysis revealed a moderate positive correlation (0.523) between FD and the selected macroeconomic variables. The regression analysis provided that inflation and TO have a positive effect on FD. On the other hand, EXCR and INTR have a negative effect on FD. Furthermore, the study identified a unidirectional causal relationship between inflation rate, TO, and FD, whereas a bidirectional causal relationship was observed between INTRs, EXCRs, and FD. The findings of this study have significant implications for policymakers in Pakistan. Understanding the positive impacts of inflation and TO, as well as the negative impacts of INTRs and EXCRs, can help in formulating strategies to foster FD. Policymakers can use these insights to create a more conducive environment for financial growth by adjusting macroeconomic policies accordingly. This study contributes to the existing literature by providing empirical evidence on the role of macroeconomic factors in shaping FD in Pakistan over a span of three decades. It highlights the importance of considering multiple economic indicators and their interrelationships to understand FD comprehensively. This research also lays the groundwork for future studies to explore these dynamics in other developing and emerging economies.

**Keywords:** Financial Development (FD), Inflation (INF), Interest Rate (INTR), Trade Openness (TO) and Exchange Rate (EXCR)

### 1. Introduction

The development of the fiscal area has become increasingly important to policymakers and researchers in recent decades to manage long-term monetary growth. A strategic initiative in current production development paradigms considers the stock market expansion and banks as a pre-condition for emerging and underdeveloped nations. In endogenous growth models, financial growth is proclaimed to positively contribute to firm evolution. Bedjabeng and Agyapong (2019) argued that the financial industry development would be critical for accelerating financial progress as a significant source of economic growth. They argued that the financial sector development could be a significant catalyst for economic growth. Several channels of finance have been implicated in the enhancement of development in the past, according to the authors of the study. Among these are the transformation of risk, the enhancement of good corporate governance, the eradication of information asymmetries, the provision of optimum allocation of projects, the encouragement of technological enhancement by highlighting successful procedures and products, and the monitoring of managers. Previous research by Abubaker and Kassim (2018) suggests that effective financial institutions are imperative for attaining desired goals which directly contribute to the development of actual output.

Previous studies have competing theoretical argument about the FD in the developing countries including Pakistan, market-based theory, theory of financial services, finance law theory, and bank-based theory. In order to develop the financial sector of emerging nations, a number of policies and financial reforms have been adopted. Among their rules, there is an agreement that legal and institutional transparency must be emphasized. Legal and institutional frameworks are vital to establishing a positive relationship between the legal environment and financial growth Sabir (2019). Legal and institutional frameworks are vital to establishing a positive relationship between financial growth and the legal environment Sabir (2019). This also offers a unique opportunity for empirical research into the institutional influences that drive the development of the banking sector. The development of economic zones contributes significantly to fiscal evolution, which cannot be denied. Therefore, developing countries' financial sector can be boosted by discovering, improving, and understanding various factors.

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The literature has widely documented the determinants of financial sector growth, and some macroeconomic factors include real GDP (Gross Domestic Growth) and inflation rate. The economic growth represented by GDP is a vital factor that increases economic boost by lifting the interest regulation and saving mobilization. Literature on endogenous growth also points out that economic growth determines financial intermediation. Emerging countries that witness higher economic growth demand advanced systems of finance so that they can fulfill the needs of firms and households to channel their savings. The argument was supported by the study conducted by Cizo (2020), who further pointed out that advanced RGDP (real GDP) per capita leads to more financial services as more households' demand services from banks. Several other studies have supported the relationship between growth and finance. Besides, the inflation rate works as a basis to impact the monetary sector due to the disturbances in the activities of monetary intermediaries and monetary markets Yao and Haris (2019). Volatile and high inflation may also hamper financial growth by deteriorating complications of asymmetric information and lowering the real return on assets. If the inflation rate becomes high, it reduces the efficiency of savings, decreasing the fund accumulation of the entire financial system. If there is an increase in TO, domestic markets' ability to produce for the international markets becomes high.

In addition, some empirical research stated that TO increases the volume of bank acclaim by enhancing the requirement for short- and long-term finances. Another study by Alexiou and Vogiazas (2018) illustrated that the simultaneous opening of trade and financial sectors brings financial growth. Some other dynamic support for monetary growth includes financial and trade directness. Current research supports the evidence that liberalization of finances assists monetary stability and outcomes by improvement in competition, technological progress, and efficiency. The fact cannot be denied that increased financial directness reinforces rivalry in the credit marketplace by easing the reserves of borrowers from the domestic market and worldwide monetary essentials. Countries having more financial openness increasingly experience financial growth. Furthermore, it has become empirically evident that both trade and financial openness are pre-conditions regarding the financial sector development (Uddin (2018)). In most cases, the openness of capital accounts plays a role in financial growth, especially in stock markets and equity for emerging and less developed market nations. Despite these factors, sufficient literature on legal systems and institutions for developing the financial sector is available. Sound institutional quality and the legal system ensure the legal protection of creditors and investors, considering the overall financial system.

A study by Eldomiaty (2020) confirmed that organizations remain at the highest regarding the most frequently quoted causes of FD. Improved working of determinants identifies the development, and it has successfully gauged the consideration of emergent economists for the past few years. This paradigm shift is attributed to insufficient financial restructuring programs Khan and Kouser (2021). Hence, the role of institutions is important in specifying property rights to protect the rights of borrowers and creditors, and they are the ones facing the disadvantage of enforcing contract terms that were previously agreed upon. Protection from strong elite institutions and property rights can help defend underprivileged revelries by guarding the interests of marginal stockholders against better-informed managers/stockholders. Typically, TO refers to the country's inward or outward orientation. This openness is a metric of economics made as a country's ratio in terms of sum trade. The linkage between output and trade has not yet been identified in theoretical terms Ellahi (2021). No doubt, foreign investment and trade have an essential influence on per capita income, GDP, and financial growth. Since trade and foreign direct investment are two main components of financial growth, FDI has an essential role in boosting the economy. It has been stated that inflation is a slow increase in the price level of products and services, and it is measured as a percent change in expense to the average consumer of getting a fixed bundle of services or commodities at a certain time. In an economy, the general rise in the price of products and services is mostly calculated by the directory of customer price and creator price index since goods cost rise, then the dollar price falls.

Inflation is the rate at which the price level for products and services increases. Financial sector development positively affects economic growth as inflation of high trend delays the financial market performance Khan and Kong (2020). GDP per capita paves the way for financial sector development in Pakistan. Some key indicators in the country include money supply and the total level representing the country's FD. For the country, the INTR is the driving force that boosts the economy. INTR variations affect overall FD. It is the rate at which the bank borrows funds in the short-term range from the Bank of Federal Reserve Khalfaoui (2015). It is a fixed percentage charged by different banks for each other, particularly for the funds' usage. The rate of funds is one of two INTRs decided by the federal government, and the other is the rate of discount that is paid or charged for the money usage. An INTR is often expressed as a yearly principal percentage and is calculated by dividing the interest amount by the principal amount. It changes because of inflation Huang (2010). The INTR and inflation rate affect FD significantly, both overall and in the short run. Previously, borrowing from the government had Government significantly influenced the development of money. Hence, banks must regulate cash reserves downwards as financial organizations must decrease interest. Furthermore, this is calculated by having an annual prime rate.

FD and its institutional determinants have been discussed widely among economic regulatory authorities and researchers regarding interaction with actual development Yao and Haris (2019). Before formulating financial liberalization policies, it is considered a profound requirement to be taken into consideration. An unstable and

underdeveloped financial system decreases the financing opportunities of an economy. Hence, institutional determinants play a crucial role in defining the financial health of emerging nations. This argument was strengthened by the research conducted by Matar (2018), who tried to capture the influence of various institutional and macroeconomic factors on FD. The current study will investigate a few institutional determinants, including INTR, EXCR, TO, and inflation, to see how they affect FD in Pakistan. The research is an extension of the body of previous literature. Previous research only spoke in terms of developed countries or compared different countries. The present research fulfills the gap by considering the economy of Pakistan (a developing economy). So far, no such study has been conducted in Pakistan, so it will be the first time that the institutional determinants affecting the FD of Pakistan have been investigated (Shabbir, 2018). Moreover, the studies have not considered the combined impact of INTRs, EXCRs, TO, and inflation on FD.

The study aims to investigate the Institutional Determinants of FD in the Pakistan region. To study the impact of Inflation, INTR, TO, EXCR on FD. The study investigates the impact of institutional determinants on Pakistan's FD. The research may uncover some additional factors, too, and later, they will become capable enough to conduct more extensive research relating to the topic. Hence, the research would be helpful for policymakers in formulating financial policies. They would learn which factors increase hurdles in boosting Pakistan's economic performance. Once the problem is highlighted, they will identify the type of measurements to be adopted to develop a sound and robust financial system. Furthermore, the research will suggest removing a vulnerable and immature financial system.

## **2. Literature Review**

### **2.1. Theoretical Background**

Previous studies have competing theoretical argument about the FD in the developing countries including Pakistan, market-based theory, theory of financial services, finance law theory, and bank-based theory. In order to develop the financial sector of emerging nations, a number of policies and financial reforms have been adopted.

### **2.2. Market-Based Theory**

It focuses on the crucial role of efficient financial markets in fostering economic growth and FD. Stable and moderate INTRs, low inflation, and consistent EXCRs reduce uncertainty, encouraging investment and savings. TO enhances market efficiency by introducing competition and new investment opportunities. The theory posits that efficient financial markets ensure optimal resource allocation. Hence, macroeconomic stability is essential for promoting FD.

### **2.3. Theory of Financial Services**

The theory of financial services emphasizes the importance of financial institutions in providing critical services such as savings, investment, and risk management. For these institutions to function effectively, moderate inflation and stable EXCRs are necessary. INTRs affect the cost and demand for financial products like credit. Increased TO demands more robust financial services to handle international transactions. FD is thus driven by the capacity of financial institutions to adapt and meet market needs.

### **2.4. Finance Law Theory**

Finance law theory underscores the significance of a strong legal framework in fostering FD. Effective regulations ensure stability, transparency, and fairness in the financial system, protecting the value of financial contracts from inflation. Stable EXCRs and well-regulated INTRs contribute to trust and stability in financial markets. Legal systems that support TO through enforceable agreements and property rights create a favorable environment for trade and investment. This theory highlights the importance of legal infrastructure in maintaining financial stability.

### **2.5. Bank-Based Theory**

Bank-based theory argues that banks play a central role in FD by mobilizing savings and allocating capital to productive investments. Controlled inflation helps maintain the real value of banks' assets and liabilities, enabling them to function efficiently. Stable EXCRs support international trade and investment, enhancing banks' cross-border services. Reasonable and stable INTRs allow banks to offer more loans and attract deposits, which supports economic activities. Increased TO requires banks to expand trade-related services, thereby promoting FD.

## **2.6. Empirical Review**

### **2.6.1. Inflation and Financial Development (FD)**

Inflation refers to the progressive increase in the price of products and services in a country Shabbir (2018). When there is an increase in the general level of process, each currency unit buys fewer products or services in comparison. In short, it reduces the purchasing power of money. FD and inflation are the key factors that have an enormous influence on the economies of world countries. The interaction between these factors has been an issue in many developing countries. It has always been a concern for researchers to find out about inflation as it unfavorably influences development. According to Yang (2019), a disproportionate price increase with expanding pattern costs in macroeconomics is considered inflation. Studies have shown that inflation enormously impacts the financial sector and its growth. Moreover, inflation also affects low-income individuals Yang (2019). Inflation and economic development are considered pivotal issues in underdeveloped countries.

Numerous investigations have focused on the relationship between inflation and the financial market, but some focus on the effects of inflation and economic development on growth models. Some studies also try to find the direct relationship that both these factors share. After so many studies, the link between the variables cannot be found. A complete clarification has yet to be provided. For example, according to Hami (2017), inflation turns portfolio allocation from money to capital assets, leading to lower investment returns. However, it still has a positive effect on FD. Increased price variability and inflation are correlated with Hami (2017). It leads to vulnerability about investments in future projects. Because conservative investment decisions are made, which leads to lower investments and monetary growth. The country's balance of payment is impacted by inflation, which makes exports costly. It interacts with the tax system and influences acquiring and loaning choices. Because of that, firms allocate additional resources to deal with inflation. The research by Batayneh et al. (2021) investigated the issue and found a negative relationship between inflation and the economic growth of Pakistan, with the help of education, fertility, and death rates. The research aimed at finding evidence of a relationship between inflation and development. Research has found that growth falls sharply during high inflation crises and recovers whenever inflation descends.

H1: Inflation significantly impacts financial development.

### **2.6.2. Interest Rate (INTR) and Financial Development (FD)**

It is the driving force to boost a country's economy. Interest rate variations affect overall financial growth. It is the rate at which banks usually borrow funds from the Bank of Federal Reserve for less than a year Takyi (2013). Interest is the expense of borrowing money from someone else. The creditor is a receptive field while the borrower pays it Takyi (2013). Interest is computed as a proportion of a loan (or deposit) amount and is paid toward the lenders regularly in exchange for using their resources. It is the driving force to boost a country's economy. INTR variations affect overall financial growth. It is the rate at which banks usually borrow funds from the Bank of Federal Reserve for less than a year Takyi (2013). Monetary turbulence is more intense in industrialized countries, which has a knock-on impact by causing INTR changes in the global financial system and escalating costs of developing in other economies. Many empirical investigations on development and INTRs conclude that INTRs negatively influence expenditure considerably. Mohsen and Rezazadeh Karsalari (2017) suggested a profound association between private sector investment with inflation and INTRs over a 6 % per annum boundary. Geng and N'Diaye (2016) use Asian information to demonstrate that a 100-point increase (bps) in the real INTR reduces business investment by 0.5 percent of GDP (GDP).

According to Wang and Yu (2017), on the quantitative front, support of the bond yields liberation hypothesis shows a massive upgrade in economic competitiveness but not in expenditure quantity or savings amount. One thing that is apparent from the data is that effective and established fiscal discipline is required in conjunction with macroeconomic stability. The sector is critical to the effectiveness of the interest income. Furthermore, Wang and Yu (2017) state that, Intriguingly, the partnership between INTR liberalization and wealth creation has decided to focus on the endogenously or classicism growth theory; however, given the notable roles played by organizations in the economic strength of developed and emerging markets, this research examines the governmental growth theory. Again, it was obvious that most preliminary experiments were done based on a regression model, in which the link between bonds yields liberalization, as a kind of deregulation, and economic development was explored directly rather than systematically.

Considering Pakistan's demographic, Nasir and Khalid (2014) examined Pakistani savings and designs to leverage from 1971 to 2003, employing series data for the period. They conclude that the budget deficit, spending on infrastructure, and INTRs are minor predictors of saving. Furthermore, the return on state investment has a trivial effect on saving. On the other hand, current govt spending, high income, Economic growth, and growth in remittance maximize saving. They also argue that state loans and overseas savings have a positive but minor impact on development, but domestic investment and INTRs have considerable positive effects on investment Nasir & Khalid. (2014). Even though many scholars feel that INTRs are a key determining factor of savings and investments, religious beliefs have a significant impact. The latter would influence a shareholder's desire to save and his reaction to advantages given for saving (e.g., interest income). As a result, government entities in Islamic nations should avoid imitating the economic plans of non-Islamic countries by placing disproportionate emphasis on INTRs Çiftçioğlu and Almasifard (2016).

H2: Interest rate significantly impacts financial development.

### **2.6.3. Trade Openness (TO) and Financial Development (FD)**

It is the financial metric designed to be related to the sum trade of an economy. In short, it is the inward or outward orientation of an economy. Trading openness has been an unmistakable part of policy advice for developing countries throughout the previous few decades. It has been a fundamental part of globalization. It helps with the growth of foreign trade and other socio-economic variables by increasing interaction or integration of the economic system. It is associated with the creation of internationalization, the promotion of labor and products, and the creation of related development and business exercises. According to Shahzad et al. (2017), reducing all types of taxes like import and export duties, taxes, and shares to get free goods and services across the country is done through TO. The link between trade and economic growth is an open question that needs to be answered.

Abeka et al. (2021) developed an Endogenous Growth Theory to find the answer to this question. Which, through dynamic gain, leads to higher growth. According to this theory, TO leads to receptiveness to advancement in efficiency and technology, innovation, and resource allocation.

Cetin et al. (2018) also proposed that innovation, transfusion, and resources are the three sources that help in economic growth. With the help of TO and these three sources, the country's development can be enhanced. For example, for an open economy, it is easier to get factors from foreign than from a closed economy. It also leads to better allotment of assets. Forces of comparative advantage help an open economy to specialize and work in the area with better variable enrichments. As a result of working in better variable enrichments, the sector's productivity goes up, along with an increase in exports. It leads to a boost in growth. The research shows that activities related to investment and TO have a positive and significant effect on the development of Pakistan. Policies of TO enhance the trade flows in Pakistan. This research also shows that an increase in human and physical capital leads to growth in GDP Lawal et al. (2016). The government should take some measures to enhance both these capitals. To promote the economic development of the country.

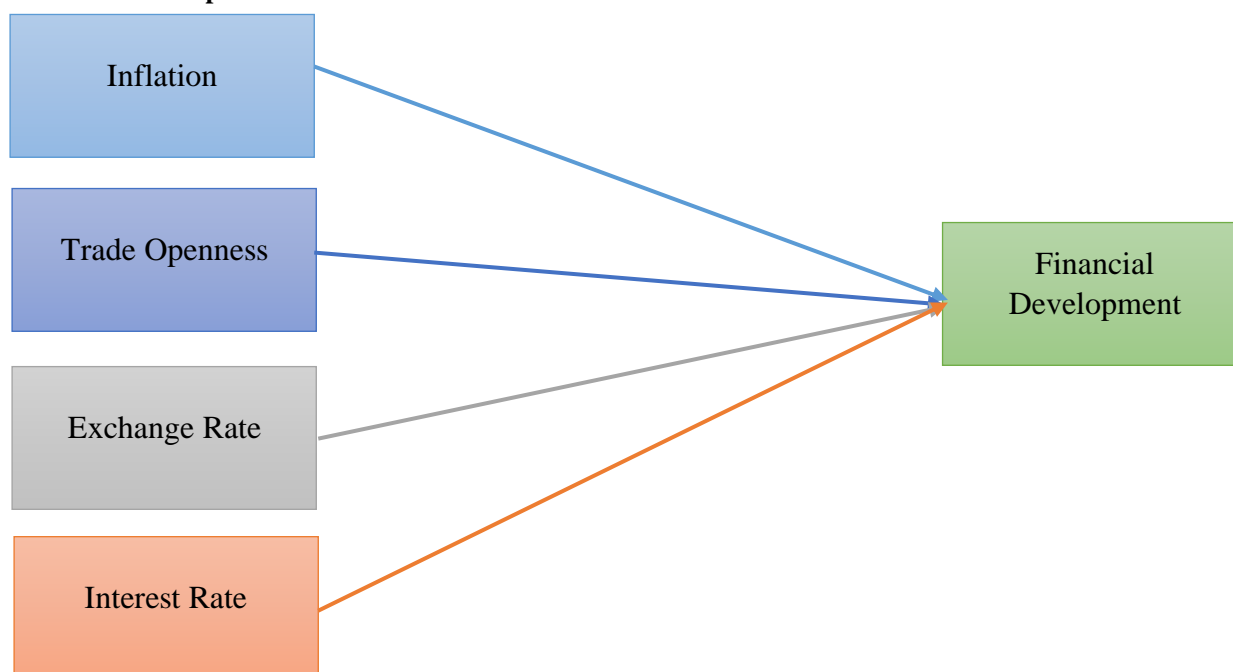
H3: TO significantly impacts the FD.

#### 2.6.4. Exchange Rate (EXCR) and Financial Development (FD)

An EXCR is the overall cost of one money communicated regarding another cash (or gathering of monetary forms). The swapping scale is a significant financial variable for economies like Australia that effectively participate in worldwide exchange. The relationship between EXCRs and FD is crucial and complex. EXCR stability is widely recognized as vital for attracting foreign investment, which plays a significant role in fostering FD (Levine, 1997). Stable EXCRs mitigate currency risk, thereby promoting cross-border trade and investment (King & Levine, 1993). On the other hand, EXCR volatility introduces uncertainty, which can deter investment and hinder the growth of financial markets (Rajan & Zingales, 1998). Additionally, stable EXCRs support the banking sector by reducing risks associated with foreign currency transactions (Demirgüç-Kunt & Maksimovic, 1998). Empirical evidence suggests that countries with stable EXCRs tend to exhibit more developed financial systems (Aghion et al., 2009). Thus, maintaining EXCR stability is a critical policy consideration for countries seeking to enhance FD.

H4: EXCR significantly impacts FD.

### 2.7. Conceptual Model



**Figure 1: Conceptual Model**  
Source: Authors Own Creation

### 3. Methodology

The chapter highlights the methodology adopted to investigate the institutional determinants of FD. Due to this, Pakistan's economic development facets have been considered the study's predictor variables. The independent factors are institutional determinants such as inflation, INTR, TO, and EXCR, and the dependent variable is the financial sector of Pakistan. Typically, the chapter helped the researcher formulate a transparent and detailed action plan to investigate the hypothesis's validity and authenticity. If the action plan is clear, it would further help to seek solutions and answers to the research questions found in chapter one of the study. Thus, it is vital for the

researcher to detail methodology and other data collection patterns that further help to enhance research credibility. The chapter took assistance from Research Onion given by Saunders in 2007 to lay out a proper methodology plan for the research Sahay (2016). The research onion shown below comprises layers such as research philosophy, design, approach, time, and data collection methods to be selected for research. Additionally, the chapter focused on the study population, sample size, ethical considerations, and limitations of the researcher.

### 3.1. Research Design

The research is secondary, quantitative and explanatory research. The past 31 years of data taken from Pakistan's financial sector have been collected directly from World Bank sources. Researchers have found this method to be the most dependable due to the authentic and detailed results obtained, keeping in view the institutional determinants for empirical evidence (Mathew, n.d.). The research aims to investigate the institutional determinants of FD in Pakistan; it used quantitative research to analyze the findings using quantitative processes such as unit root, correlation, regression, and Granger Causality to evaluate the model's validity. This study type is chosen because it is backed by robust empirical evidence from numerical data and facts. In turn, the facts added value to the research's credibility.

### 3.2. Research Approach

There are two approaches of research including deductive and inductive. This study used deductive which start from the theory, make the hypotheses, generalize them and then end in the testing these hypotheses via different research techniques.

### 3.3. Research Model

This research aims to study the impact of INF, IR, TO, and ER on FD. The research model equation of this model is

$$FD = \alpha + \beta_1 INF_t + \beta_2 INTR_t + \beta_3 TO_t + \beta_4 EXCR_t + e$$

Where FD stands for financial development, and it is the dependent variable, whereas the independent variables are INF (Inflation), Interest Rate (INTR), Trade Openness (TO), and Exchange Rate (EXCR).  $t$  is the intercept. Beta stands for coefficient, and  $e$  is the error term.

### 3.4. Data Collection

The current research is interested in using annual frequency time-series data from 1993 to 2023 in Pakistan to conduct an empirical investigation. Since the figures are available from 1993 onwards on the Central Bank of Pakistan website, World Bank, and trading economics web page, the study chooses 1993 as the starting point to get valid results that are useful in the present. Furthermore, the data was extracted from Pakistan's financial statistics, and the GDP number was taken from WDI (World Development Indicators). Moreover, all government spending data and inflation rates have been taken from the Central Bank of Pakistan's website. Each indicator of the financial industry of Pakistan has its own strengths and weaknesses when used alone to measure the development of the financial sector. Nevertheless, the researcher has made a conglomerate index to get a sound and robust pointer. For instance, each variable value will be transformed using an equation of regression, and later, the impact will be analyzed by changing one or more variables. The researcher will also highlight which variable has the most intensive effect on the financial sector of Pakistan via empirical analysis. The number game is intense and requires a huge focus to predict the country's financial future. Hence, the study ensures the stationarity of variables by sound and robust conduct.

The institutional quality of determinants was measured using WDI (World Development Indicators). This is further composed of six main measures: corruption control, Rule of Law, regulatory quality, the effectiveness of government, and political stability of the country. These are the measures considered while analyzing the increase or decrease of the values. We have aggregated all the independent variables to get one predictor of institutional factors by taking an average to see the combined influence. The reason for including some economic variables is to reduce the potential for spurious results. Here, the inflation rate is considered as the policy variable. Some other control variables are also included to isolate the relationship between the intermediation of the financial industry of Pakistan, governance, and liberalization of the financial sector. The GDP rate is the macroeconomic indicator that determines the development of the financial sector based on hypotheses and regulatory rules. Once the data from the past 31 years is collected, Eviews will be used as an essential research component in quantitative study types. With the help of EViews, data collection methods and tools are used to gather data reliably and consistently. No doubt, the data collection process in this research demands in-depth financial knowledge and focus on getting the desired study outcomes in the end. The data from the past has been analyzed using EViews and critical analysis.

### 3.5. Statistical Technique

As discussed above, the data collection process is detailed, and figures for the past 31 years of all independent variables are taken from the Central Bank of Pakistan, the World Bank website, and others discussed above. Once the data is gathered, it must be arranged, organized, and analyzed using the most famous financial software, EViews. Several quantitative and statistical procedures and tests were conducted to evaluate the validity of the hypotheses given in Chapter One. These include essential tests like regression analysis, correlation, descriptive statistics, analysis of normality, and reliability testing.

Typically, regression analysis used in the EViews software is a statistical process that the researcher undertakes to investigate and evaluate the unit change influence of the predictor variable on the dependent variable (Bolshakova, 2021). An equation will likely be formed to collectively check the impact predictor variables. The regression analysis has determined the relation among a variety of constructs. It is beneficial because it is composed of independent variables such as TO, inflation, INTR, investment rate, and EXCR, and their combined influence on Pakistan's FD is vast and can be quantified using the regression interpretation.

#### 4. Data Analysis

##### 4.1. Descriptive Analysis

In this case, we have annual data, and these descriptive statistics help explain these five variables. An average value is described by a means. Values at the top of the data set represent the highest values. Similarly, the values that are minimum indicating lowest values in the set of the data set represent. Standard deviation tells the variation in the set of the data. Table 1 shows the FD (FD) has a mean value of 21.22, a minimum value of 14.58, a maximum value of 28.6; similarly, the standard deviation of 4.36, and total observations of 31. The independent variables, the average value of inflation is 8.46, its maximum value is 20.29, and the minimum value is 2.53, and the standard deviation is 4.01, the Mean of INTR is 9.63, its maximum value is 20.29 and its minimum value is 2.53, and standard deviation value 4.01. The average value of TO is 29.46, its maximum value is 35.68, its minimum value is 24.59, and the standard deviation of TO is 3.031. The EXCR mean is 74.58, its maximum value is 162.91, the minimum value is 23.80, and the standard deviation is 38.80. Here, the total observation of this dataset is 31.

**Table 1: Descriptive Statistics**

	FD	INF	INTR	TO	EXCR
<b>Mean</b>	21.220	8.467	9.630	29.468	74.585
<b>Maximum</b>	28.600	20.290	20.000	35.680	162.910
<b>Minimum</b>	14.580	2.530	-3.760	24.590	23.800
<b>St. Dev</b>	4.366	4.012	5.488	3.031	38.804
<b>Observations</b>	31	31	31	31	31

Note: FD=Financial Development; INF= Inflation; INTR= Interest Rate; TO= Trade Openness; EXCR= Exchange Rate

##### 4.2. Unit Root Test

The stationary analysis is performed through a unit root test; only one test is conducted for this analysis. This unit root test checks whether the trend trend exists in the variable's dataset. Based on the annual dataset, I'm Pesaran and Shin test (2003) on the penal. Table 2 specifies the m Pesaran and Shin test results for the unit root test of "FD" FD, Inflation rate, INTR, TO, and EXCR. This result shows that all the variables are non-stationary at level I (0) because of p-value > 0.05 except for the inflation rate, and all variables are stationary at first differences I (1) because of their P-value.

**Table 2: Unit Root**

Variables	I m pesaran and shin test			
	I (0)		I (1)	
	C	C&T	C	C&T
<b>FD</b>	0.603	0.639	0.006	0.039
<b>Inflation Rate</b>	0.112	0.002	0.000	0.000
<b>INTR</b>	0.760	0.369	0.000	0.000
<b>TO</b>	0.210	0.500	0.000	0.000
<b>EXCR</b>	0.999	0.390	0.002	0.002

Note: FD=Financial Development; INF= Inflation; INTR= Interest Rate; TO= Trade Openness; EXCR= Exchange Rate

##### 4.3. Regression Analysis

The table below contains the following statistics: Prob value, coefficient, F-statistic, Durbin Watson, and R squared adjusted. An independent variable FD is correlated by its sign with a dependent variable (coefficient value). A positive coefficient value shows the extent to which the independent variable is related to the dependent variable, and a negative value shows how little it affects the dependent variable. Using the t-statistics, we can describe the relationship between an independent variable and a dependent variable. Depending on the independent variable, the dependent variable may be negatively or positively affected. Durbin Watson defines autocorrelation in a model as the amount of variance defined by independent variables over the dependent variable. The adjusted R square is the measure of variance defined by independent variables over the dependent variable. The fitness of the whole model is described by the F-statistics. Using the t-statistic, you can see the independent variable's individual effect on the dependent variable Table 3 shows the OLS regression results.

The inflation rate t-stat is 2.32, which shows that the inflation rate positively impacts FD and the INTR t-stats value is -2.17, which has a negative effect. The value of TO positively affects FD. Similarly, the EXCR t-stats value is -2.83, which indicates that it hurts FD. The dependent variable FD P-value (Prob-value) describes an

independent variable as having a significant impact on the dependent variable. The P-value must be less than 0.05, meaning the independent variable significantly impacts the dependent variable. So, the inflation rate P value is 0.007, the INTR p-value is 0.008, the TO p-value is 0.009, and the EXCR p-value is 0.008, which is less than 0.05, which means they significantly impact Pakistan's FD.

The coefficient's value describes the independent variable's relationship with a dependent variable, either negative or positive. Hence, the value coefficient of the inflation rate shows that if the inflation rate is changed by one unit, then the FD of Pakistan is changed by 0.256. Also, the INTR value tells us that if it changes by one unit, Pakistan's FD will lead to a change of -0.231. TO shows that if TO changes by one unit, then the FD of Pakistan will lead to a positive change by 0.276. The EXCR tells us that if it increased by one unit, Pakistan's FD changed by -0.081. Adjusted R square is 69.70, which means that the above model is 69.70% significant and accurate in predicting the FD of Pakistan. The inflation rate, INTR, TO, and EXCR help to accurately predict the FD of Pakistan, which is up to 69.70%. The Durbin Watson shows the correlation in this model, which is 0.523. The f-stats (prob) describes the fitness of the whole model, and its value is 0.000027.

**Table 3: Ordinary Least Square Regression**

<b>Dependent Variable: FD of Pakistan</b>			
<b>Variables</b>	<b>Coefficient</b>	<b>T-stats</b>	<b>Prob.</b>
<b>C</b>	17.283	1.995	0.056
<b>Inflation Rate</b>	0.256	2.322	0.007
<b>INTR</b>	-0.231	-2.177	0.008
<b>TO</b>	0.276	2.143	0.009
<b>EXCR</b>	-0.081	-2.836	0.008
<b>Adj R2</b>	0.697		
<b>D.W stats</b>	0.523		
<b>F-stats (prob)</b>	0.000		

*Note: FD=Financial Development; INF= Inflation; INTR= Interest Rate; TO= Trade Openness; EXCR= Exchange Rate*

#### 4.4. Granger Causality Analysis

This panel Granger causality test analyzes the direction of causality between the dependent and independent variables. We determine that the causality analysis of this study model is on lag 2. For this Granger causality test in other software, researchers usually use a significant range of 0.05, but in this research, we consider a substantial range of 0.10 and interpret its results on this basis. According to Table 4 below, the outcome of the Granger causality test shows a unidirectional causal relationship between the inflation rate, TO, and FD. INTRs and EXCRs have a bidirectional causal relationship with economic growth.

**Table 4: Result of Granger Causality**

<b>Null Hypothesis</b>	<b>Obs</b>	<b>F-Statistic</b>	<b>Prob.</b>
INF does not Granger Cause FD	31	1.65677	0.2118
FD does not Granger Cause INF		1.72257	0.2000
IR does not Granger Cause FD	31	0.57882	0.5682
FD does not Granger Cause IR		4.15178	0.0283
TO does not Granger Cause FD	31	0.35428	0.7053
FD does not Granger Cause TO		0.35877	0.7022
ER does not Granger Cause FD	31	1.15677	0.3314
FD does not Granger Cause ER		0.33089	0.7215

*Note: FD=Financial Development; INF= Inflation; INTR= Interest Rate; TO= Trade Openness; EXCR= Exchange Rate*

## 5. Discussion

The results supported by the previous studies results and developed hypotheses. The results accepted H1 reveal that the inflation rate significantly impacts Pakistan's FD. The inflation rate has a Prob value of 0.0070, significantly impacting Pakistan's FD. For example, according to Hami (2017), inflation turns portfolio allocation from money to capital assets, leading to lower investment returns. However, it still has a positive effect on FD. Increased price variability and inflation are correlated with Hami (2017). The results accepted H2 reveal that the INTR significantly impacts Pakistan's FD. An INTR with a Prob value of 0.0089 means the INTR substantially affects Pakistan's FD. INTR variations affect overall economic growth. It is the rate at which banks usually borrow funds from the Bank of Federal Reserve for less than a year Takyi (2013). The results supported H3 reveal that TO has a significant impact on Pakistan's FD. TO with a Prob value of 0.0093 means TO significantly impacts Pakistan's economic growth. According to Shahzad et al. (2017), TO reduces taxes, such as import and export duties, taxes, and shares, to get free goods and services across the country. The link between trade and economic growth is an open question that needs to be answered. The results accepted H4 reveal that the EXCR has an



insignificant impact on the FD of Pakistan. EXCR with a Prob value of 0.0087 means the EXCR has a significant effect on the economic growth of Pakistan. According to Azam et al. (2022 c)

## 6. Conclusion and Recommendations

### 6.1. Conclusion

This research study examines the FD of inflation, INTR, TO, and EXCR in Pakistan by using the annual data from 1993 to 2023. Pakistan is imperative to the world economy since it has a significant trade and GDP ratio. Gokmenoglu and Rabiatal Adawiyah (2018), In this research, first run a unit root test, which describes whether a trend exists in the dataset or not, check its trend at level  $I(0)$  and then 1st differences  $I(1)$ . Our main findings that regression analysis through the OLS test we interpret that our model is appropriate with the random effect, and it describes that inflation rate, INTR, and TO have a significant impact on the economic growth of Pakistan and the EXCR has an insignificant effect as well that also support by the traditional theory which describes government investment. According to Keynesian theory, as the views of inflation pull demand, it raises public investment and the level of the prices of commodities, which improves the growth in the economy. The outcomes of the Granger causality test approve that inflation rate and TO have a bidirectional relation with FD.

### 6.2. Limitations

No matter what type of study, what time-period, or what irregular outcomes the researcher cannot control, limitations greatly influence the outcome. There is a major limitation to the study in terms of time. This is a quantitative research study where data is collected through secondary resources. However, the study did not collect data through interviews or open-ended questionnaires. There is no specified target population. The data is solely collected from Pakistan, with other developing countries being neglected.

### 6.3. Future Implications and Recommendation

As considered, the analysis results of this study recommended that Pakistan focus on more significant factors that may help to strengthen its economy. This study is expected to add more variety of contributions related to this crucial topic. However, new researchers evaluate this topic with further methodologies and techniques that will be more beneficial for this research. Furthermore, researchers should focus on the Granger causality test, which focuses on the effect or cause of Pakistan's economic growth. The new researcher must focus on studying more significant factors crucial for Pakistan's economy and activities. Furthermore, policymakers must talk about the problems of unemployment and inequality in the inflation rate. To address this issue of unemployment, policymakers should put so much energy into the policies that will increase the percentage of the middle-aged population pursuing jobs, particularly the talented young graduates produced every year in Pakistan. Policymakers should focus on their authorities who take care of their debts and their productive use for the performance of economic growth rather than reducing the economic growth of Pakistan.

This research study can be prepared in the future through additional and different variables that may explain more about the FD of Pakistan. This research can be done in the future with a larger sample size or a more significant number of years that must be included with Pakistan. This research study could be completed with more statistical methods to help interpret its newer results and be more in-depth. This research must be done with a more significant variable, which may help generate better results, and it may be more critical for the economy of Pakistan, which is most crucial for the world. This study should be finished through further significant factors, and that study can focus on one technique or may increase their period (years).

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