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# Assessing the Impact of Fiscal Policy on Economic Growth: A Case Study of Pakistan

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**ABSTRACT**

This paper aims to investigate the role of fiscal policy and some fundamental macroeconomic factors on the economy's growth in Pakistan from 1976 to 2023 by using the ARDL model to analyze both the short and long-term relationship. The study establishes employment and capital accumulation as pivotal growth enablers, inviting more investment in human capital and infrastructure. On the other hand, government expenditure and trade openness have ambiguous results, which once again cement the need for context-specific fiscal and trade strategies. The analysis also highlights Inflation as another challenge and calls for strong measures to enhance price stability. Although foreign direct investment has not brought in a strong positive image for the destination country, the overall stability in the model reinforces the reliability of these understandings. The last section of the study presents policy implications that should be helpful for policymakers seeking to promote sustained economic growth and add substantively to the emerging literature about mechanisms of economic development in emerging economies.



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## 1. Introduction

Promoting economic growth is one of the objectives of developing countries' development strategies, including Pakistan, as improving the population's living standard significantly depends on a stable fiscal and macroeconomic environment. Pakistan has been blessed with reasonably good growth rates in the last few decades; however, it has faced some significant challenges in its growth process, such as political instabilities, Inflation, and oscillating levels of investment. However, the growth rate could be retained by the measures announced by the government. However, the Gross Domestic Product (GDP) growth rate was 6.0 % in 2021, drastically declining to 0.29% in 2023 due to existent fiscal and external sector problems (World, 2023).

Such volatility must include the factors contributing to the economy's growth following Pakistan's conditions. Expenditure and revenue, one of the fiscal policy tools, is a government spending that can affect economic activity. As for the issue of fiscal effects in stimulating economic growth, opinion is divided. On another side of Keynesian economics, people claim that during the period of recession, the government should increase its spending because it leads to demand (Blanchard & Leigh, 2013), while on the other side, there are those people who consider that intervention is unproductive, because of inefficiency and diversion of capital (Barro, 1991). Various extents of government expenditure have uneven effects on growth in the case of Pakistan

and therefore require this study to undertake a more complex analysis that includes other factors in the macroeconomic environment.

The final prerequisite of economic development is the labor force with preferences for youths. The youth is an asset in Pakistan, having more than 60% of the population below 30 (UNDP, 2022). High ratios of LFPR may help raise economic development by upping productivity; thus, if the position does not bring about new and better employment prospects for the youth, it leads to underemployment and socio-political vices. Not only that, other variables like accumulation of capital, global trade of goods and services, FDI, or inflation also out rimes the growth as per the theoretical literature on the world economy. However, the long-term implications of these factors for Pakistan's economy are still not fully understood, let alone their specifics. With this background, this research examines the nexus between fiscal policy, labor force, capital accumulation, trade openness, FDI, Inflation, and economic growth of Pakistan. Specifically, the study seeks to answer the following questions:

The following research question has been developed from the above-identified research questions: (1) To what extent does government expenditure influence GDP growth in the long run in Pakistan? This paper includes the following questions: (2) The labor force's and capital's role in economic growth. Trade openness, FDI, and Inflation relate to which type of growth in Pakistan's economy? The importance of this study therein is its ability to make recommendations about policy interventions to improve the status of economically sustainable development in the country. This study utilizes the ARDL model and offers short-run and long-run correlation analyses of key macroeconomic factors and GDP growth. Understanding these relationships is crucial for policymakers as they strive to design interventions that stabilize and enhance economic performance in a country characterized by structural challenges and opportunities. The structure of this article is as follows: The next part provides a literature overview of the pertinent works, drawing attention to the research's theoretical and empirical underpinnings. After this, you will get a comprehensive explanation of the model, data, and used methodologies. After reviewing the relevant literature, the results section discusses the ARDL analysis's conclusions. Lastly, the report finishes by proposing policies and avenues for further study.

## 2. Literature Review

In the framework of established and developing economies, the link between fiscal policy and economic growth has been closely examined. Still, the research on these dynamics is broader; therefore, the particularities of Pakistan – particularly concerning government expenditure and its effects on macroeconomic determinants and long-term growth — remain underused. The present literature is also examined in this part to evaluate where this study fits into already published works and what research gap it seeks to close.

### 2.1. Fiscal Policy and Economic Growth

A study of fiscal policy as a tool that influences the level of development is a significant focus in the material on macroeconomics. Keynesian economists, including Blanchard and Perotti (2002), show that automatic stabilization benefits when a country's government increases spending during a recession to boost demand for goods and services. Thus, this viewpoint is justified according to empirical evidence in different organizations and environments. For instance, Afonso and Furceri (2010) advocated that government size and composition had an enormous impact on the economic growth rate, particularly within the OECD countries, though investments in infrastructural and educational equipment positively impacted the economy. However, other works suggest that large government expenditures may possess some types of inefficiency. According to Barro (1991), the government's current expenditure concerning GDP has a negative coefficient because it crowds out private investment to a certain extent. This non-linear relationship between fiscal policy and growth is especially valid for the developing world because of the unsound public expenditure delivery process, corruption, and susceptibility to debt management problems compared with the developed world (Tanzi & Zee, 1997).

Ahmed and Miller (2000) have shown some evidence that in the case of Pakistan, fiscal policy has had both positive and negative impacts on economic growth in different periods. However, such studies are inconsistent in modeling the actual interaction of fiscal policy with other key macroeconomic variables. Butkiewicz and Yanikkaya (2019) sought to understand the influence of institutional quality in government expenditure on economic growth. They observed that sound institution improves the gains achieved with government expenditure therefore

indicating that appropriate institution is fundamental in attaining the most out of the practice of fiscal policy. This supports the basic assumption that institutional quality is a strong mediator of fiscal policy effects. For instance, d'Agostino, Dunne and Pieroni (2016), the authors encounter a study in government expenditure, corruption and Economic growth. They continued to find that corruption substantially diminishes these growth implications of fiscal income; this means that the issue of good governance and accountability are fortunately important criteria in fiscal matters. This research informs the fiscal policy discussion by overlaying quality of governance on top of the respective economic outcomes. Eyraud et al. (2024) found credible fiscal anchors and sound policy frameworks to sustain fiscal performance in SSA during volatile periods.) They describe towards some defensive fiscal policies that can be set horizontal. Their analysis leads to a resistance fiscal policies that must look for cycles and instabilities while a country is targeting at sustainable stability and economic growth. Daoudi (2023) applied SVAR model on the Algerian economy which aim to analyse the role of fiscal policy in growth process, author stressed the need for both fiscal discipline and channelling public investment towards more structured growth potential. These findings highlight the need for primacy of fiscal policies which should be mindful of certain national economic factors if growth is to be realized sustainably.

## 2.2. Labor Force Participation and Economic Growth

The labour force participation rate (LFPR) and economic growth are fundamental components of macroeconomic research, with substantial empirical evidence highlighting their interactive dynamics. The labour force participation rate (LFPR) represents the percentage of the working population that is either employed or actively seeking employment. Improvements in the labour force participation rate (LFPR) are considered a fundamental source of strength, as a larger workforce enhances capacity, creativity, and demand. They identify the labour force participation rate as essential for sustained economic growth amidst shifts in demographic structures and technological advancements.

Dao et al. (2021) contend that variations in the labour force participation rate (LFPR) are attributable to the economic cycle, demographic factors, and employment structures. The assertion is that, typically, during periods of economic growth, the labour force participation rate (LFPR) tends to rise as more individuals gain employment in various industries. Conversely, recessions lead to worker demoralization, reducing the labour force participation rate (LFPR). Consequently, cycles exist that increase the necessity for stabilization policies related to labour markets and influence individuals' willingness to work during downturns. Eberstadt (2020) similarly emphasizes the ongoing declines in labour force participation rates, particularly among young adults in developed countries like the United States, as an indicator of underemployment within the working-age population.

Demographic factors significantly influence the level of LFPR. Outdated workforces lead to diminished capacities for economic growth in developed nations such as Japan and Germany, primarily due to ageing populations. Bloom, Canning and Sevilla (2003) review the demographic dividend, noting that a rapid increase in the eligible working age can enhance economic productivity, provided that employment opportunities are accessible. Conversely, in developing countries, especially those with significant youth populations, effective policies are essential to enhance education and training for labour force entrants and ensure their productivity. Youth employment outcomes are linked to education-employment equity, suggesting that investments in education can enhance long-term productivity and contribute to economic growth (ILO, 2023).

In addition to demographic factors, technological and structural economic changes significantly impact the labour force participation rate (LFPR). Participation can fluctuate over a typically defined period due to various factors, including shifts in demand for human capital from agriculture to industrial sectors and subsequently to service industries. Despite the emergence of new industries driven by automation and digitalization, traditional industries have experienced job losses, particularly affecting employees with lower educational attainment. Autor (2019) emphasizes the importance of lifelong learning activities and retraining to enhance employee resilience to emerging technologies in the workplace. Furthermore, outsourcing and trade liberalization have influenced the labour force participation rate by altering job market dynamics, thereby promoting export-based industries in competition with local businesses.

These changes are more conducive to policy interventions, as they are essential for sustaining and enhancing the aggregate labour force participation rate (LFPR). Implementing measures such as retraining opportunities for workers, improved access to affordable quality childcare, and flexible working arrangements will ensure the engagement of all employees, including older workers and those with childcare responsibilities. Policies implemented in pilot countries, such as Sweden and the Netherlands, have effectively maintained high labour force participation rates (LFPRs), contributing to corresponding economic growth stability, as noted by (OECD, 2018). Furthermore, addressing issues such as long-term unemployment and regional labour market imbalances may enhance human capital alignment (Sheets, 2024).

In summary, total employment rates reflect labour force participation rates, which indicate the frequency with which a society engages its productive capacity. Therefore, achieving economic benefits from elevated labour force participation rates necessitates governments to implement and consistently modify. It enhances employee engagement and contributes to developing a sustainable and inclusive economy.

A primary index of economic development is the labor force participation especially of the youths in a population. Several research studies show that high employment improves the growth of a country's economy as it increases the productivity of a country's human capital (Bloom, Canning, & Sevilla, 2003). Thus, Becker (1964) placed more importance on the human capital for developing nations through education and training centers on the factors that could enhance labor productivity. Let it also be recalled that, in Pakistan's case, the capacity of labor force participation to boost economic growth is particularly significant since the country has a relatively youthful population. However, few investigations on the fact that the participation of the youth force in the working population influences the growth of the Pakistani economy are at present. Malik, Shaheen and Yasmeen (2021) shed some light on this by stating that if further augmented by the proper employment generation policies, the labor force participation rates can potentially push the GDP growth rate significantly. However, the literature still lacks a complete study examining the relationship between labor force participation and all the above macroeconomic variables in a coherent setting.

### 2.3. Capital Formation, Trade, and Foreign Direct Investment

As postulated before, the role of capital formation in economic development is also justified by the theory of trench of Solow (1956), who concluded the investment in the physical capital. Levine and Renelt (1992) also supports this view by expressing that a direct causality exists between capital accumulation and the rate of economic growth cross-sections. Some related factors that we have explored when discussing the large impacts on economy particularly to the developing nations are; increase in capital, the system of Bretton woods and the FDI. What has been realized is FDI is essential in financing where sectors that are integral for the growth of the economy such as infrastructure, manufacturing and services amongst others get their finances from FDI (Moran, 2008).

For such a country like Malaysia for example, Investment, Trade and Capital formation are complementary and FDI as a signal to sustain economic growth and investment are complementary (Nawaz et al., 2020; Pegkas, 2015; Solarin & Shahbaz, 2015; Yimer, 2022). Trade openness is another important determinant of growth; Frankel and Romer (1999) show that a higher trade/GDP ratio is associated with higher growth. Based on the conclusion given above it is suggested that trade enhances market, technology as well as competition that enhance productivity. However, here, defining the role of trade in the context of growth, some uncertainty appears as Rodrik (2001) described, due to the differentiation of trade agreements and the disaggregation of exports and imports. It is for this reason that there are mixed results on trade openness in the economic growth of Pakistan; some scholars have advocated opening up trade for trade liberalization (Iqbal & Zahid, 1998), while others have discussed ill effects of liberalization of trade and the cost in the form of volatility and imbalance in the Pakistan economy (Kemal, 2007).

It also included here the Foreign Direct Investment or FDI, which is most deemed to benefit the host nation through technology transfers and shifts in better managerial methods (Borensztein, De Gregorio, & Lee, 1998). However, as we have seen in the literature on FDI in Pakistan, the picture is quite different. Khan (2007) stated that although FDI brings growth to the economy, it does so when the economic capacity of the host country to absorb such

investment exists. It has been observed that FDI has been less successful in Pakistan because of restricting policies, political instabilities, and poor communication infrastructure. Additionally, capital controls play a significant role in shaping the dynamics of FDI and capital formation. Restrictive capital controls can deter investment by raising borrowing costs and reducing profitability, while their liberalization typically fosters greater economic activity (Desai, Foley, & Hines, 2006). Although the synergy between capital formation, trade, and FDI generally supports economic growth, the potential downsides—such as diminished local entrepreneurship and risks associated with capital controls—underscore the need for balanced, sustainable economic policies.

### 2.4. Inflation and Economic Growth

A detailed discussion about the relationship between Inflation and economic growth has been carried out among many scholars. Moderation of such Inflation is thus not intellectually incompatible with economic growth; however, high rates dampen growth as it entails uncertainty and thus discourages investment besides the progressive erosion of the purchasing power of money Fischer 1993. For instance, Qayyum (2006) indicates a significantly negative relationship between Inflation and GDP growth, especially when the inflation rate is above the affordable rate in the case of Pakistan. Once more, however, it resurfaced that inflation targeting is the correct strategy for improving the macroeconomic-Lewellen balance and sustainable economic growth in the long run (Olugbenga Adaramola & Dada, 2020).

### 2.5. Research Gap

Nevertheless, there is a research deficiency in drawing the nexus of fiscal policy, labor force participation rate, capital accumulation, trade, FDI, and Inflation where such groups of variables are missing in evaluating the Pakistan Economy. Many previous investigations are likely to analyze the effects of separate variables simultaneously without paying attention to how these variables might affect each other in the short and long terms. Thus, the magnitudes of trade and FDI effects on the growth in the case of Pakistan remain inconclusive and need to be examined in more extensive and 'white box' models.

### 2.6. Contribution of This Study

Thus, to address the said shortcoming, the current study intends to use an Autoregressive Distributed Lag (ARDL) model to analyze the short-run and long-run mutual interaction between fiscal policy, labor force participation rate, capital accumulation, export and import, FDI, inflation rate, and economic growth in Pakistan. This research encompasses these variables within one framework and presents a better perspective on factors that influence the economic enhancement of Pakistan and valuable insight that can inform policy goals. It is believed that the conclusion of this study will enhance the ongoing discourse on the role of fiscal and trade policies in developing countries and establish solutions that can facilitate sustainable economic growth and development in Pakistan.

## 3. Model, Data, and Methods

### 3.1. Model

This study employs an econometric model to determine the long-term and short-term impacts of fiscal policy and other critical macroeconomic factors, with GDP per capita growth as the indicator of economic growth in Pakistan. The macroeconomic variables crucial to the model as growth predictors include government expenditure, employment, gross fixed capital creation, exports, foreign direct investment, and inflation. The standard representation of the Autoregressive Distributed Lag (ARDL) model for this research is as follows:

$$GDP_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 GDP_{t-i} + \sum_{i=0}^{q_1} \beta_1 GEXP_{t-i} + \sum_{i=0}^{q_2} \beta_2 LFPR_{t-i} + \sum_{i=0}^{q_3} \beta_3 GFCF_{t-i} + \sum_{i=0}^{q_4} \beta_4 TRADE_{t-i} + \sum_{i=0}^{q_5} \beta_5 FDI_{t-i} + \sum_{i=0}^{q_6} \beta_6 INF_{t-i} + \lambda ECM_{t-1} + \varepsilon_t$$

### 3.2. Data Description

The empirical analysis uses a panel dataset of annual time series data from 1976 to 2023 from the World Bank Indicators. The above-mentioned selected variables remain a part of fiscal policy and macroeconomic performance that provides an insight into some of the components that help determine GDP growth in Pakistan. Before explaining the results, explaining the variables employed in the given analysis will be constructive, as listed in Table 1.

**Table 1: Variables Description**

| Variables | Abbreviation | Description |
|---|---|---|
| GDP | $GDP$ | GDP per capita growth (annual %) |
| GEXP | $GEXP$ | Final consumption expenditures of the general government (growth rate per year) |
| LFPR | $LFPR$ | Gross labor force participation rate among individuals aged 15–24 as a percentage (national estimate) |
| GFCF | $GFCF$ | Gross fixed capital formation as a percentage of GDP |
| TRADE | $TRADE$ | Trade as a Percentage of GDP |
| FDI | $FDI$ | Net inflows of foreign direct investment as a percentage of GDP |
| INF | $INF$ | Inflation, GDP deflator (annual percentage) |

These variables were selected based on theoretical connection and available evidence in the empirical literature so it may cover all the significant factors affecting the economy's growth in Pakistan.

### 3.3. Methods

This study examines the effects of fiscal policy and associated macroeconomic variables on per capita GDP growth in Pakistan, employing the Autoregressive Distributed Lag (ARDL) model from 1976 to 2023. The Augmented Dickey-Fuller (ADF) unit root test will first be employed to assess the stationarity of each variable. Upon confirming the stationarity conditions, the ARDL model is selected for estimation due to its capacity to handle small samples and accommodate both I(0) and I(1) integrated series. The Error Correction Model (ECM) examines the short-term dynamics of the variables in question and the rate at which they converge to equilibrium.

## 4. Results and Discussion

This section presents the findings of the econometric research on the short-run and long-run effects of fiscal policy and macroeconomic variables on GDP per capita growth in Pakistan. The initial modeling phase entails a data summary (Table 2) to familiarize oneself with the dataset prior to analysis, followed by the unit root test results (Table 3) to ascertain the stationarity of the variables. The Bounds test, displayed in Table 7, is employed to ascertain the existence of a long-run link, while the short-run and long-run ARDL results in Tables 5 and 6 encompass the critical aspects related to economic growth within the context of Pakistan.

**Table 2: Summary Statistics**

| Variables | GDP | GEXP | LFPR | GFCF | TRADE | FDI | INF |
|---|---|---|---|---|---|---|---|
| Mean | 1.989 | 5.208 | 41.182 | 15.547 | 31.172 | 0.737 | 9.992 |
| Median | 1.872 | 5.663 | 41.755 | 16.041 | 32.341 | 0.571 | 8.995 |
| Maximum | 5.818 | 31.065 | 45.760 | 19.112 | 38.499 | 3.036 | 68.010 |
| Minimum | -2.970 | -10.213 | 17.900 | 12.000 | 21.460 | 0.062 | 0.922 |
| Std. Dev. | 2.044 | 8.246 | 3.871 | 1.781 | 4.283 | 0.632 | 9.518 |
| Skewness | -0.164 | 0.453 | -4.579 | -0.110 | -0.386 | 2.187 | 4.911 |
| Kurtosis | 2.632 | 3.710 | 28.606 | 1.853 | 2.292 | 7.833 | 30.234 |
| Jarque-Bera | 0.486 | 2.650 | 1479.083 | 2.726 | 2.194 | 84.967 | 1676.325 |
| Probability | 0.784 | 0.266 | 0.000 | 0.256 | 0.334 | 0.000 | 0.000 |
| Observations | 48 | 48 | 48 | 48 | 48 | 48 | 48 |

Descriptive statistics of the distribution and nature of the variables have been presented as summary statistics in Table 2. The mean GDP per capita growth is 1.989%, with a relatively high standard deviation of 2.044, indicating significant variability in economic growth over the period studied. Government expenditure (GEXP) shows a mean growth rate of 5.208% but with a wide range between -10.213% and 31.065%, reflecting periods of both contraction and expansion in government spending. The labor force participation rate (LFPR) is 41.182%, with a high kurtosis and negative skewness, indicating a highly leptokurtic distribution with shallow values. Gross fixed capital formation (GFCF), trade (TRADE), and foreign direct investment (FDI) exhibit moderate variability, with trade showing the highest mean at 31.172% of GDP. Inflation (INF) presents a significant skewness and kurtosis, with extreme values observed, highlighting periods of high inflationary pressure in Pakistan. The Jarque-Bera test indicates non-normality in the distribution of several variables, particularly LFPR and INF, suggesting the presence of outliers or heavy tails in these data series.

**Table 3: Unit Root Test**

| | Level | | First Difference | | Result |
|---|---|---|---|---|---|
| **Variables** | **t-stats** | **P-value** | **t-stats** | **P-value** | |
| GDP | -3.485 | 0.001 | | | I(0) |
| GEXP | -1.885 | 0.057 | | | I(0) |
| LFPR | -0.131 | 0.633 | -7.753 | 0.000 | I(1) |
| GFCF | -4.494 | 0.001 | | | I(0) |
| TRADE | -2.322 | 0.169 | -6.797 | 0.000 | I(1) |
| FDI | -1.783 | 0.071 | -4.753 | 0.000 | I(1) |
| INF | -6.562 | 0.000 | | | I(0) |

These stationarity qualities of the variables that were utilized in the analysis are indicated by the results of the unit root test that are presented in Table 3. It is unnecessary to use differencing to attain stationarity for GDP, GEXP, GFCF, and INF because they are all stationary at the level. This indicates they are integrated of order zero, I(0). On the other hand, LFPR, TRADE, and FDI are not stationary at the level, but they become stationary after first differencing, which indicates that they are integrated of order one, also known as I(1). Because of this mixed order of integration, the ARDL model is appropriate because it can support integrated variables at different levels, specifically I(0) and I(1).

**Table 6: Bound Test**

| **Statistic** | **Value** | **Significance Level** | **I(0)** | **I(1)** |
|---|---|---|---|---|
| F-statistic | 14.46509 | 10% | 2.12 | 3.23 |
| k | 6 | 5% | 2.45 | 3.61 |
| | | 2.50% | 2.75 | 3.99 |
| | | 1% | 3.15 | 4.43 |

Table 6 shows that the Bound Test findings strongly suggest that the variables in the ARDL model are related over the long term. For all four standard significance thresholds (1%, 2.5%, 5%, and 10%), the computed F-statistic of 14.46509 is substantially higher than the upper bound critical values. Take the 5% significance threshold as an example; the F-statistic produced is significantly lower than the upper bound critical value of 3.61. This discrepancy strongly rejects the absence of cointegration as a null hypothesis.

This finding is important since it affirms that the independent variables such as government expenditure, labor force participation, capital accumulation, foreign trade, FDI, and Inflation are expected to show a long-run co-integrating relationship with GDP growth in Pakistan. The fact that these macroeconomic variables have such a close long-term partnership indicates that any short-term deviations will return to their long-term growth path and strengthens the argument for these variables' importance in supporting sustainable long-term economic growth. Regarding applying econometric techniques for this undertaking, cointegration is coherent with

Pesaran, Shin and Smith (2001) suggestion that when the examined variables are of different integration orders, the long-run relations should be tested. This result indicates that the ARDL model is versatile in capturing short-run movements and long-run equilibrium relationships, making it helpful for policy consideration. For policymakers, the implication is clear: The governments have to use a stable and proper Economic policy, which has to be put into action with efficiency, and this efficiency cannot be achieved with much volatility resulting in the economy.

**Table 4: Shor Run Results**

| **Short Run Results** | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| C | -6.678 | 0.599 | -11.152 | 0.000 |
| D(GDP(-1)) | 0.358 | 0.099 | 3.617 | 0.002 |
| D(GEXP) | -0.018 | 0.024 | -0.740 | 0.469 |
| D(GEXP(-1)) | 0.109 | 0.026 | 4.136 | 0.001 |
| D(GEXP(-2)) | 0.072 | 0.020 | 3.584 | 0.002 |
| D(LFPR1) | 0.002 | 0.035 | 0.054 | 0.957 |
| D(LFPR1(-1)) | -0.233 | 0.055 | -4.236 | 0.000 |
| D(LFPR1(-2)) | -0.178 | 0.045 | -3.952 | 0.001 |
| D(LFPR1(-3)) | -0.174 | 0.039 | -4.523 | 0.000 |

| | | | | |
|---|---|---|---|---|
| D(GFCF) | 1.803 | 0.225 | 8.028 | 0.000 |
| D(GFCF(-1)) | 1.788 | 0.339 | 5.268 | 0.000 |
| D(TRADE) | 0.026 | 0.069 | 0.380 | 0.708 |
| D(FDI) | 0.555 | 0.482 | 1.151 | 0.264 |
| D(FDI(-1)) | -0.325 | 0.593 | -0.548 | 0.590 |
| D(FDI(-2)) | -1.534 | 0.510 | -3.007 | 0.007 |
| D(INF) | -0.036 | 0.017 | -2.093 | 0.050 |
| D(INF(-1)) | 0.119 | 0.021 | 5.722 | 0.000 |
| D(INF(-2)) | 0.041 | 0.016 | 2.597 | 0.018 |
| ECM(-1)* | -2.018 | 0.175 | -11.543 | 0.000 |

From the findings based on the estimation results in the table, which depicts the short–run ARDL model some of the effects regarding the various economic indicators for the GDP growth in Pakistan are as follows. First, the error correction term (ECM) = (-2.018) while the t- statistic= (-11.543), which is highly significant and less than 0.001. This points to a high level of coordination and an ability to quickly recover from a short-run shock to the GDP. However, a coefficient greater than -1 suggests possible over-adjustment, which might require further investigation.

The lagged difference in GDP is positive and significant, implying that past GDP growth positively influences current growth, consistent with the findings of Khan, Khan and Malik (2015), who noted that past economic performance tends to drive future growth through momentum effects in developing economies. Government expenditure (GEXP) shows mixed effects. While the contemporaneous term is insignificant, the first and second lags are positive and highly significant. This suggests a delayed positive impact of government spending on GDP, aligning with Keynesian economics, which posits that fiscal spending stimulates economic activity, albeit with some lag (Blanchard & Leigh, 2013; Blanchard & Perotti, 2002).

The labor force participation rate (LFPR) has a significant negative impact in its lagged forms, which may indicate that a higher participation rate, particularly among the youth, could initially strain the economy if not matched with adequate job creation, as highlighted in human capital theory (Becker, 1964; Goldin, 2024; Grossman, 2000). Gross fixed capital formation (GFCF) strongly influences GDP in the current period and in the first lag. This is consistent with the findings of Barro (1990, 1991), who emphasized the role of capital investment in driving long-term economic growth.

Trade and foreign direct investment exhibit mixed and largely insignificant short-run effects. The insignificance of trade is somewhat surprising and contrasts with the literature that often emphasizes the positive role of trade openness in growth (Frankel & Romer, 1999). The negative and significant effect of the second lag of FDI could indicate that not all FDI is growth-enhancing, especially if it leads to capital outflows or does not sufficiently integrate into the local economy (Alfaro et al., 2004; Nawaz et al., 2020; Pegkas, 2015; Yimer, 2022).

Inflation shows a mixed influence on GDP, with a negative contemporaneous impact but positive effects in subsequent periods. This could suggest that inflationary pressures initially hinder growth but, if managed correctly, may lead to higher output levels later, as inflation expectations adjust, aligning with (Ciobanu, 2020; Olugbenga Adaramola & Dada, 2020; Qayyum, 2006; Sargent & Wallace, 1981) policy ineffectiveness proposition. Overall, these results offer a nuanced understanding of the dynamics in Pakistan's economy, underscoring the importance of careful fiscal management and the need for policies that maximize the benefits of government spending and investment.

**Table 5: Long Run Results**

| **Long Run Results** | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| GEXP | -0.068 | 0.039 | -1.731 | 0.100 |
| LFPR | 0.172 | 0.054 | 3.216 | 0.005 |
| GFCF | 0.191 | 0.096 | 1.993 | 0.061 |
| TRADE | -0.094 | 0.038 | -2.503 | 0.022 |
| FDI | 0.035 | 0.192 | 0.184 | 0.856 |
| INF | -0.132 | 0.025 | -5.262 | 0.000 |
| R-squared | | | | 0.930 |
| Adjusted R-squared | | | | 0.879 |

| | |
|---|---|
| S.E. of regression | 0.890 |
| Durbin-Watson stat | 1.981 |
| F-statistic | 18.419 |
| Prob(F-statistic) | 0.000 |
| Breusch-Godfrey Serial Correlation LM Test: | 0.860 |
| ARCH | 0.138 |

The results of the long-run ARDL estimation offer important insights into the factors that have determined the rise of the GDP in Pakistan over the period that was investigated. The model appears to be a strong match, as indicated by the high R-squared (0.930) and modified R-squared (0.879) values. These values suggest that the model attempts to explain a considerable percentage of the variation in GDP growth. A conclusion corroborated by the Breusch-Godfrey Serial Correlation LM Test (p-value = 0.860) is that the residuals have no significant autocorrelation. The Durbin-Watson statistic (1.981) is near to 2, suggesting no autocorrelation in the residuals. It is statistically insignificant at the 10% level (p = 0.100) that the coefficient for government expenditure is negative (-0.068), although it is statistically significant. It would appear from this that, over time, the government's expenditures do not substantially impact the expansion of Pakistan's economy.

Contrary to the Keynesian idea, which proposes that higher government expenditure should boost economic growth, this outcome contradicts that notion. On the other hand, it is consistent with the findings of research such as Afonso and Furceri (2010), which discovered that in certain emerging nations, government spending could be inefficient or even detrimental to growth due to corruption or the misallocation of resources (Hodžić, Demirović, & Bečić, 2020; Tan et al., 2020).

The coefficient of the LFPR is 0.172, which indicates that it has a positive and significant impact on the growth of GDP (p = 0.005). A greater labor force participation rate, particularly among young people, can contribute positively to economic growth by boosting the economy's productive capacity (Juhn & Potter, 2006). This finding is consistent with the research, highlighting that a higher labor force participation rate can benefit economic growth. This highlights the significance of policies that encourage increased participation in the labor market and the creation of new jobs (Moeini & Daei-Karimzadeh, 2021; Wijaya et al., 2021).

Indicating that capital investment plays a substantial role in promoting long-term economic growth, the coefficient for GFCF is positive (0.191) and marginally significant (p = 0.061). This suggests that the influence of capital investment is significant. This is consistent with the classical economic theory and empirical research that highlight the significance of investing in physical capital to boost productivity and growth (Solow, 1956) and these studies also verifies this (Ciobanu, 2020; Pegkas, 2015; Yimer, 2022).

Trade openness demonstrates a significant and negative effect on the expansion of the gross domestic product. This result may appear contradictory because trade is frequently associated with positive growth impacts, such as access to wider markets and the transfer of technology (Frankel & Romer, 1999). Based on this, it would be reasonable to argue that the expansion of nations like Pakistan, for instance, was not assisted by trade in the sense that it resulted in the dismantling of indigenous manufacturers or an increase in the percentage of T&L. It is needed to carry out additional research in order to provide evidence for this result.

In a surprising turn of events, the coefficient of foreign direct investment (FDI) is positive but insignificant, which indicates that FDI does not affect Pakistan's economic growth over the long term. Foreign direct investment (FDI) in Pakistan may be funneled into industry sectors with low forward connections or may only be marginally linked to the domestic economy. Both of these possibilities are possible explanations for this phenomenon.

The Inflation has been negative and statically significant to the GDP growth with a coefficient estimate of -0.132 with p < 0.001. This supports the conventional wisdom in the literature that inflationary environments are particularly adverse for growth through increased uncertainty, lower investment, and a gradual erosion of the purchasing power of money (Fischer, 1993; Olugbenga Adaramola & Dada, 2020). These long-run results show the cointegration and

dynamic causal interlinkages between Pakistan's fiscal policy, trade, and GDP. Consequently, the results depict that labor participation rate and capital accumulation are crucial in growth.

However, the government expenditure and trade openness are either mixed or are even harmful. This demonstrates why most Inflation and other macro-economic variables should ideally be at their long-run steady state. These outcomes are consistent with other studies in the economics literature that point to context dependency and governance quality as crucial determinants of the impact of fiscal and trade policies.

**Table 7: Ramsey RESET Test**

| **Ramsey RESET Test** | | | |
|---|---|---|---|
| **Test** | **Value** | **df** | **Probability** |
| t-statistic | 1.144566 | 18 | 0.2674 |
| F-statistic | 1.310031 | (1, 18) | 0.2674 |
| Likelihood ratio | 3.091128 | 1 | 0.0787 |

Table 7 presents the results of the Ramsey RESET test, which are crucial for assessing the general specification and functional form of the econometric model employed in this work. As an analogy, the t-statistic for t-tests is 1.144566.

Furthermore, the F-statistic for F-tests is 1.310031. Such an F-statistic has a 0.2674% chance of occurring when using a chi-square distribution. The accurate specification of the Zanzibar model was thus not rejected. The likelihood ratio test yielded a result of 3.091128 with a p-value of 0787, placing it at the same significance level as the previous result (ten percent).

The lack of these significance levels in these tests confirms that the chosen ARDL model employed in this study is specified correctly with no evidence of omitted variable bias or erroneous functional forms. This is a conclusion because it suggests that the specified relationships of the independent variables to the rate of GDP growth do not need any alteration and the addition of other terms into the context of the model above. Thus, the findings indicate that the selected functional form and the set of variables allow for capturing the economic dynamics under consideration. Thus, concerning the econometric analysis of this model, the definition and estimation stand as promising approaches toward making the proper inference.

The other benefit of correct specification is that in addition to being free from biases and consistent, it also offers more accuracy concerning the analysis and inference made on the given model. We obtained a score of zero by evaluating specification errors through the Ramsey RESET test, thus implying the validity of the estimated coefficients in that model specification problems do not impact them but are real and, as such, have been derived from real economic relations. This finding concurs with the prevailing opinion in the econometric literature that the Ramsey RESET test is appropriate to avoid producing unbiased or misleading results, as highlighted by Ramsey (1969).

Thus, the confirmation of the study that the model is well specified adds to the validity of the findings and the recommended policy implications for the determinants of economic growth in Pakistan. This adds credibility to the model because it can generate reliable forecasts of long- and short-run factors affecting the GDP growth rate.

## 5. Conclusion and Policy Recommendations

This study examines the influence of fiscal policy and significant macroeconomic variables on Pakistan's economic growth from 1976 to 2023, employing an ARDL model. The findings demonstrate that labor force participation and gross fixed capital development are essential long-term growth drivers. These variables' beneficial impacts underscore the need to invest in human capital and infrastructure. The varied effects of government expenditure and trade openness indicate that, although these factors are significant, their influence is contingent upon the wider economic and institutional framework.

The detrimental effect of trade on GDP growth necessitates reevaluating trade policies to guarantee their positive contribution to the economy. The pronounced inverse correlation between inflation and growth highlights the necessity for stable pricing strategies. The minimal effect of foreign direct investment indicates that FDI requires improved integration into the local

economy. The model's resilience, validated by diagnostic tests, bolsters the reliability of these conclusions. Policymakers should prioritize enhancing labor participation, capital accumulation, and sustaining inflation at controllable levels.

Additionally, it necessitates a contingent strategy regarding the fiscal and trade policies essential for Pakistan's economic framework. These precise measures can facilitate sustainable economic development in the nation. Subsequent studies ought to examine the impacts across other sectors and the moderating role of institutional quality on these policies. Based on the analysis, some of the important policy implications for catalyzing economic development in Pakistan are as follows. First, the labor force participation rate should increase through youth employment and female workforce engagement, available childcare services, and other pro-working policies.

Second, there is a need to have access to more finance, which can be achieved by encouraging more private sector participation through tax incentives and increasing investment, particularly through infrastructure, which has a bearing on productivity. Third, price stability is required; measures against Inflation and competent management of budget deficits should accompany these. Fourth, there needs to be a strategic reappraisal of trade policies. This is where the government should look for changes in the structure of the terms of trade, export diversification, and, wherever appropriate, partial protectionism for important domestic sectors.

The last one is the aspect of spending wisely, which is almost an aspect that would want to indicate that government or ministries should never spend their money; and the economic growth segments, including education, health, and energy. It is argued that such specific policies can efficiently leverage the established growth segments and address the issues mentioned within the scope of the study.

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