



Impact of Taxation and Political Stability on Economic Growth of Pakistan

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ABSTRACT

This study investigates the impact of taxation and political stability on economic growth in Pakistan. Analyzing GDP data from 1979 to 2019, measured in US dollars and converted to PKR, we assessed political stability using the Polity IV index and included both direct and indirect taxes in our examination. We formulated two hypotheses: one addressing the impact of political stability on GDP and the other examining the influence of taxation on GDP. A range of methodologies, including unit root tests, ARDL (AutoRegressive Distributed Lag) modeling, and error correction models, was employed to analyze both short-term and long-term effects. Our findings indicate a significant positive relationship between economic growth and both taxation and political stability. Effective direct and indirect taxation policies contribute meaningfully to GDP growth, while a stable political environment is crucial for economic development. To enhance these effects, policymakers should focus on developing progressive taxation strategies and ensuring political stability. This study provides essential insights for policymakers, economists, and government officials to improve tax collection practices and foster an environment conducive to sustainable economic growth.

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1. Introduction

The economic growth of any country is dependent on the resources and revenue generation capacity of the country, in order to meet the everyday expenditures and infrastructural needs. Generally, the resources required for all the activities are generated from a structured tax system. According to Omojimate and Iboma (2012), being a tool for macro-economic policy, tax determines the pace and level of economic growth. Tax is a sustainable and variable source through which governments can generate revenue as well as their macro-management and fiscal policy tools. It also serves as a potential tool for social and economic reforms. Adegbeie and Fakile (2011) stated that over the years, revenue generation from income tax mechanism has been under assessed. According to Babatunde and Ibukun (2016), the failure or success of any taxation system is dependent on the way it is being operated and the extent to which taxation policies and laws are being implemented and interpreted properly. The role played by tax in facilitating the growth of Pakistani economy has not been fully acknowledged and optimal taxing system is not realized efficiently that contributes to economic growth mainly due to the poor management. According to Arnold et al. (2011), government implements tax policies to contribute to long term economic growth of country. It helps in contributing to economic growth by increasing the revenues of government which invests in infrastructure and social developments in the country that fosters the employment opportunities and enhance economic growth within the country.

1.1. Problem Statement

Despite the crucial role of taxation in fostering economic growth, Pakistan faces significant challenges in optimizing its tax system. Low compliance rates, inefficient revenue administration, and a narrow tax base hinder effective revenue generation, ultimately impacting the country's ability to invest in essential services and

infrastructure. This study aims to explore the correlation between income tax changes and economic development in Pakistan to identify potential pathways for improvement.

Outbreak of covid-19 pandemic pushed economies around the world towards the lockdown, from 18th Mar'20 the government imposed lockdown across the nation which was relaxed later to some extent. Lockdown led towards the sharp fall in collection of revenue, falling by 16 percentage in April and 30.8 percentage in May as compared to previous year. However, after more relaxation in the lockdown restriction in June the quantum of falling was limited to 12 percentage. Revenue collection reached Rs.415billion during the month of June compare to last year. Federal board of Revenue has collected Rs.3.967trillion between June & July in 2020, as against Rs.3.826trillion received in last Fiscal year 2019 which reflects 3.9 percentage increase.

International Monetary Fund (IMF) had revised the revenue collection target for the third term to Rs.908 trillion from Rs.4.8 trillion due to sharp economic slowdown Covid-19 impact. Tax-wise breakdown for fiscal year 2020 showed that customs collection fell by 9 percentage that means around Rs.60.86 billion to reach. The decline was mainly attributed to falling imports. Meanwhile, income tax collection clocked in at Rs.1.48 4trillion in 2019-20 compare to last year that was Rs.1.424 trillion, an increase of 4.02 percentage have appeared. Sales Tax on goods raised by Rs.135.73 billion to Rs.1.597 trillion in fiscal year 2020 as compared to Rs.1.461trillion last year. While uplift of federal excise duty collection grew by Rs.14.759 billion to Rs.255.687 billion. The revenue generation of Pakistan has been lower than the other developing economies and there has been low tax-related effort for in terms of level or national development. Significant amount of challenges has been faced by the country to get its potential tax-revenue, thereby insufficiently fiscal policy margin for areas that can enhance growth such as education, social assistance, infrastructure and healthcare (Cevik & SCevik@imf.org, 2016). While the tax-to-GDP ratio reached to 11% (in 2015), increasing by 1.5 percent in three years; however, it is still lower than the emerging markets. The history of tax ratios development asserts the ineffective performance of state in revenue generation. Pakistan has great potential of mobilizing additional revenue through, where its capacity of 22.3% of GDP implying a gap of 11% (Cevik & SCevik@imf.org, 2016; ul Mustafa, Abro, & Awan, 2021). Even though, the capacity to generate tax revenue has increase to 0.49 from 0.43 in 2015, the country is still lacking behind from high income economies with an average of 0.76 and from developing economies by an average of 0.64 (Cevik & SCevik@imf.org, 2016). Low compliance of tax payments, weakness in revenue administration, narrow bases for tax, and extensive utilization of exemption and concession, in tax through under-reporting of formal income and informal economic activities lead to substantial losses in relation to the potential generation. Although a number of economies have these challenges Pakistan's situation is more complex due to the inter-governmental division in administration of tax system (Inam & Khan, 2008; Mansha et al., 2022). According to Gale and Samwick (2017), different economies have been focusing on amending its policies to foster the economic growth within countries. However, it has been noted that few studies have been conducted in Pakistan within this domain, therefore, this paper is intended to investigate the correlation between income-tax changes and economic-development of Pakistan.

1.2. Objectives of the Study

In the context of above problem statement, this study has the following research objectives:

- To investigate the impact of direct and indirect taxation on economic growth in Pakistan.
- To evaluate the role of political stability in enhancing the effectiveness of tax policies.
- To identify the challenges faced in the current taxation system and propose recommendations for improvement.

1.3. Significance of the Study

The following are the reasons for the significance of this study:

- i. For the Policy Implications: It provides insights for policymakers to design effective taxation strategies that could enhance revenue generation and promote sustainable economic growth.
- ii. For the Economic Development: By examining the relationship between taxation and economic growth; this study contributes to a better understanding of how improved tax policies can support national development objectives.
- iii. Academic Contribution: The study provides a new dimension of knowledge in the existing body of knowledge on taxation in Pakistan, offering a framework for future studies in this domain.

1.4. Research Questions

The following research questions are being considered in this research:

- i. What kind of relationship direct and indirect taxation and economic growth have in Pakistan?
- ii. What is the role of political stability have in influencing the effectiveness of taxation in promoting economic growth?
- iii. What are the barriers to effective tax compliance and administration in Pakistan?

This study is organized in a way that Chapter 1 (Introduction) presents the introductory part of this research. Chapter 2 (Literature Review) reviews the previous literature on taxation, and economic growth and highlighting key theories and findings. Chapter 3 (Methodology) describes the research design, data collection, and analytical techniques employed in this study. Chapter 4 (Empirical Results) presents the key findings from the analysis of data, econometric techniques and findings. Chapter 5 (Conclusions) summarizes the study's findings while addressing the research questions and provide actionable recommendations for the policy makers.

2. Literature Review

In order to streamline the existing literature with the topic in hand, some of the following recent studies show the complex relationship between taxation and economic growth, yielding diverse findings. Although the high tax rate for GDP redirects the need to increase sales tax, which is a negative impact to the poor (Ahmad, Ahmad, & Stern, 1991; Bird, 2013). Corporate tax can have the most negative and harmful impact on economic growth (Gordon & Li, 2005). Lutfunnahar (2007) identified the determinants of taxes and revenues for 15 other developing countries as well as Bangladesh through the analysis of the group's data for 15 years. These findings support the research findings presented by Poulson and Kaplan (2008) conducted a research by underscoring the significance of controlling for convergence, regional influences and regressively in isolating the impact of tax on economic growth. There is a diverse impact of taxation on cumulative economic activities, such as employment, investment, consumption as well as GDP (Lescaroux & Mignon, 2008). The GDP is one of the most commonly used factors for measuring economic activity; however, According to Poulson and Kaplan (2008) income tax negatively affect economic growth. Most of the existing literature demonstrates a negative nexus between economic growth and taxes.

Bonu and Motau (2009) focused on analyzing the impact of income tax on Botswana's economic growth. Economic growth is defined by Ayres and Warr (2009), as an increase in the total output (i.e. services or goods), produced in the country. Tax is also defined as a compulsory charge imposed by the government on communities, businesses, individuals and commodities. Distortions and disincentives in decision making can cause negative impact, while the expenses that are directly dealt by the tax revenue have positive effects. Some of the researchers have shown positive connection between economic growth and tax (Mashkoo, Yahya, & Ali, 2010). Romer and Romer (2010) defined that government spending and tax policies have important long-term implications for economic growth. This analysis looks at U.S. tax changes from 1945 to 2007 to explore the link between taxes and growth. The findings indicate that while raising taxes can help reduce budget deficits, it might also slow down growth. Conversely, lower income taxes could adversely affect long-term economic growth. Arisoy and Unlukaplan (2010) investigates how the alignment of direct and indirect taxes affects economic growth. They analyzed time series data from the Turkish economy from 1968 to 2006 using a Feeder Model. The study concludes that to stimulate economic growth, the share of indirect taxes should be greater than that of direct taxes. Alm and Rogers (2011) presented one of the most

comprehensive paper examining the impact of a wide range of factors on growth. The studied the annual growth of per capita income from 1947 to 1997 in 4 countries. The researchers used a combination of around 130 explanatory factors divided into geography, national, demographics, expenditures, and revenues. The researchers found that the anticipated impact of overall revenue generated through tax in growth is very sensitive and can vary based on the time period used, explanatory variables and other aspects.

Arnold et al. (2011) conducted a panel statistics investigation for 21 OCED nations with the help of pooled mean group estimator for investigating how tax structure effect economic growth. According to their findings, income tax leads to slower economic growth as compare to taxes on consumption and property. Esoh (2011), indicating that there is no significant impact of corporate income tax rates on the economic growth of Sweden. Gemmell, Kneller and Sanz (2011) believes that OECD countries used the board of directors and long-term knowledge; Taxes and costs of incapacity for work are rational there is an aggressive and positive impact on the expansion of OECD countries. In a research, Gupta (2012) examined the effects of income tax on investment and savings. The research findings concluded that people will have increased disposable income with lower income tax rates. The obtained results show that an important factor in the determinant is an increase in taxes on international trade, external debt and high population growth. Ferede and Dahlby (2012) identified that a higher rate of corporate tax is significantly related to slower economic growth and decreased private investments. Aligned with finance theory, Abdul and Bujang (2012) examined the unequal effects of the tax system on economic development. Their research reveals that taxes on profits, capital gains, and income have a detrimental impact on both high- and low-income economies. Omojimite and Iboma (2012) highlighted that there is a positive relation between inflation and fiscal deficit and a negative relation between national income and private investments. However, the feature of tax is usually weakened because it is disliked by most of the people of the country (O.T & Yadirichukwu, 2012). Moreover, the study shows that corporate income tax have significantly negative impact on economic growth. These fluctuation in effects on economic growth arc due to the heterogeneous entrepreneurial abilities. Study performed by Zeng, Li and Li (2013) used principal component analysis, descriptive statistics, and multi-segment linear regression to examine the impact of tax reforms and economic growth on the total tax structure and revenue. The study findings demonstrated that there is not just a significant impact of economic growth on structural changes and total tax revenues, but economic growth has a long term stability relation with total tax revenue. This income can be used for investment and saving purpose. However, other have shown a negative relationship between economic growth and taxation. The part performed by income in affecting economic growth is not just an essential concern for the tax administrators and specialists, and economic policy makers, but also been under observation by academicians (Takumah, 2014).

Ljungqvist and Smolyansky (2014) conducted a research by analyzing different countries, with respect to changes that have occurred over the time from 1970 to 2010. According to their research, increase in the rates of corporate tax can reduce wages and employment: however, decrease in rates of corporate tax does not have any effect on wages and employment. These results were also verified by the research conducted by Macek (2015), which demonstrated a negative relation between social security, personal income tax, and corporate tax and economic growth. Moreover, Takumah (2014) investigated the effects of revenue generated through tax on economic growth of Ghana. Ifuruez and Odesa (2014) identified that increase dependence on indirect taxes as compared to direct taxation has a significantly positive impact on economic growth of a country. In addition, Jaimovich and Rebelo (2013) proposed non-linear model to analyze the effect of tax on economic growth, assuming that moderate or lower rates of tax have a low impact on economic growth. However, an increase tax rates have a marginally greater impact on growth (Jaimovich & Rebelo, 2013). Another study by Saibu (2015) used a model developed by Scully (2003). The research findings demonstrated that tax burden is negatively related to economic growth rate of South Africa and Nigeria. However, some researchers have contradictory findings to the above studies. For example, Maiga (2015) used ordinary linear square (OLS) method for estimating the parameters and highlighted that a significant and positive factor was recorded in log volume and log population of the trade. The researcher reported significantly positive relation between economic growth and tax collection in Mali (Maiga, 2015). In addition, Jaimovich and Rebelo (2013) proposed non-linear model to analyze the effect of tax on economic growth, assuming that moderate or lower rates of tax

have a low impact on economic growth. However, an increase tax rates have a marginally greater impact on growth. Ojong, Anthony and Arikpo (2016) analyzed the effect or revenue generated through tax on economic growth and demonstrated that increasing personal income tax can result in increased economic growth. Sun, Chang and Hao (2017) examined the effects of tax structure China's economic growth by using linear regression test. The research findings highlighted that increasing local tax revenue positively effects the economic growth of the country. Bâzgan (2018), found that a rise in indirect taxes accelerates the economic growth but direct taxation have negative effects on economic growth (Ahmed, Azhar, & Mohammad; Dler M Ahmed, Z Azhar, & Aram J Mohammad, 2024; Dler Mousa Ahmed, Zubir Azhar, & Aram Jawhar Mohammad, 2024; Mohammad, 2015a, 2015b; Mohammad & Ahmed, 2017).

In 2019, Kumar (2019) investigated the impact of tax structure on growth in developing countries, finding that while direct taxes negatively impacted growth, indirect taxes had a more favorable effect. This study underscores the need for an optimal mix of tax types to foster economic growth. Bhatia (2020) expanded on this by conducting a panel analysis of South Asian economies. They found that high corporate tax rates deterred foreign investment, ultimately stunting growth. Their findings suggest that policymakers should consider lowering corporate taxes to attract foreign direct investment (FDI), which is crucial for economic development. In a 2021 study, Gonzalez (2021) explored the role of tax compliance in economic performance across Latin America. They posited that improved tax compliance not only increases government revenues but also enhances public trust in institutions, creating a more conducive environment for economic growth. Their research indicated that countries with higher compliance rates experienced more robust economic growth, reinforcing the idea that efficient tax administration can mitigate the negative impacts of taxation. Ferguson (2022) examined the effects of tax policy changes in OECD countries and found that moderate tax increases could be beneficial for growth when used to finance productive public investment. This study challenges the traditional view that higher taxes always impede growth, suggesting a nuanced approach where the purpose of tax revenue plays a critical role. Bilquees (2022) identified the flexibility of all taxpayers in Pakistan for the time series data from 1973 to 2003 and used the Divisia index approach to analyze them. Estimates of elasticity coefficients have shown that there is no significant increase in income due to tax changes. Asif (2023) conducted a comparative study of the tax policies in Pakistan and India, demonstrating that Pakistan's reliance on indirect taxes stifles growth compared to India's more balanced tax approach. Their research highlighted the urgent need for structural reforms in Pakistan's tax system to enhance growth prospects. Despite these insights, the literature reveals conflicting evidence regarding the overall impact of taxation on economic growth. Some studies, like those by Nguyen (2021) and Smith (2023), have shown positive correlations between increased tax revenues and growth when funds are allocated to infrastructure and social services. However, these findings are often context-specific and may not be universally applicable.

2.1. Research Gap

While the literature provides a variety of perspectives on the relationship between taxation and economic growth, there remains a significant gap in understanding how these dynamics operate specifically within the Pakistani context. Most existing studies have focused on broad regional analyses without delving into the unique challenges and opportunities faced by Pakistan. Moreover, the role of political stability and effective tax administration in mediating the effects of taxation on economic growth has been insufficiently explored.

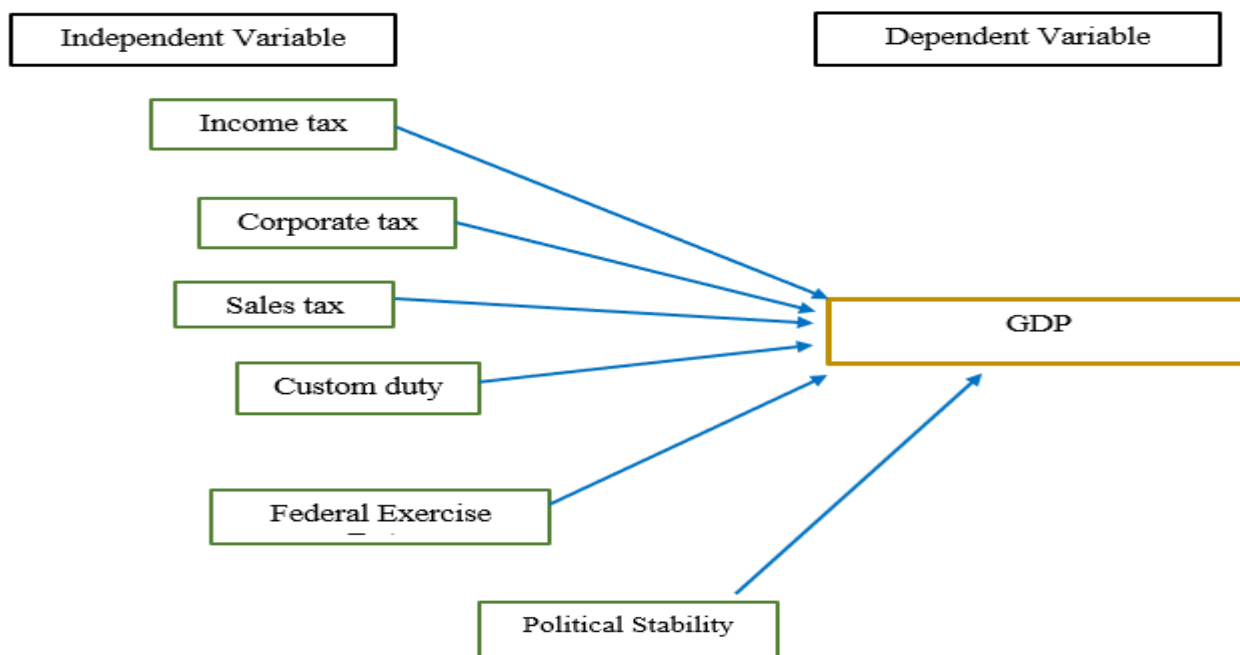
2.2. Research Methodology

To address the identified research gap, this study will employ quantitative approach. The quantitative approach will involve time-series analysis using data from the Federal Board of Revenue and the World Bank, spanning from 1979 to 2019. This analysis will be grounded in the Endogenous Growth Theory, which posits that policy measures, such as taxation, can significantly influence growth rates by affecting factors like human capital and innovation.

3. Data and Methodology

3.1. Conceptual Framework

Figure 1: Conceptual Framework



3.2. Explanation of variables

Description and data sources of variable used in methods is given in the following table.

Table 1: Description of Variables

| Variables | Symbols | Description | Data Source |
|------------------------|---------|--|--|
| Gross Domestic Product | GDP | Gross domestic Product is the largest quantitative indicator of the country's overall economic activity | World Bank indicator |
| Income Tax | IT | Income Tax is imposed on the income of individuals and companies | Federal Board of Revenue (FBR), Pakistan |
| Corporate Tax | CT | Corporate Tax is a tax imposed on the net income of the company | Federal Board of Revenue (FBR), Pakistan |
| Custom Duty | CD | Custom Duty is a tax imposed on imports and exports of goods | Federal Board of Revenue (FBR), Pakistan |
| Sales Tax | ST | Sales Tax is a consumption tax levied by the government for the sale of products and services | Federal Board of Revenue (FBR), Pakistan |
| Federal Excise Duty | FED | The FED tax is paid for goods produced or produced in Pakistan and paid from goods imported into Pakistan | Federal Board of Revenue (FBR), Pakistan |
| Polity IV Index | P4 | The POLITY score is calculated by subtracting the AUTOCRACY score from the DEMOCRACY score, yielding a unified polity scale ranging from +10 (very democratic) to -10 (extremely authoritarian) (strongly autocratic). | World bank indicator |

Source: Author's own compilation

3.3. Model Development

Based on variables, the following regression model is developed:

$$GDP = \alpha_0 + \alpha_1GDP + \alpha_2IT + \alpha_3CT + \alpha_4CD + \alpha_5FED + \alpha_6ST + \alpha_7PIV + \epsilon_t \quad (1)$$

where as

GDP = GROSS DOMESTIC PRODUCT

IT= INCOME TAX

CT=CORPORATE TAX

CD=CUSTOM DUTY
 FED=FEDERAL EXCISE DUTY
 ST=SALE TAX
 PIV=POLITY IV INDEX

3.4. Data Collection

The data is of secondary nature and been collected from various government/ international sources such as Federal Board of Revenue (FBR), and World Development Indicators of World Bank. The data ranges from 1979 to 2019.

4. Empirical Results

4.1. Descriptive statistics

Descriptive statistics encompass numerical and graphical techniques for organizing and summarizing the characteristics of a sample. They capture central tendency, or the average of a set of scores, as well as the dispersion or variance of those scores. Grasping descriptive statistics is crucial before exploring more advanced concepts, as some statistical methods apply only to specific levels of measurement. The measurement level is typically a key factor in selecting appropriate statistical techniques. Table 1 offers a brief summary of the descriptive data for the variables, including the mean, median, maximum, and minimum values. It also includes the standard deviation, which indicates how much the data varies from these values. Additionally, the Jarque-Bera statistic and its corresponding probability values are provided in the descriptive statistics.

Table 2: Descriptive Statistics

| | LGDP | LCT | LCD | LFED | LST | LIT | P4 |
|--------------|---------|---------|---------|---------|----------|---------|---------|
| Mean | 14.9876 | 8.38317 | 11.3778 | 10.8242 | 11.35244 | 11.5032 | -1.688 |
| Median | 15 | 8.78 | 11.22 | 10.84 | 11.67 | 11.56 | -1.39 |
| Maximum | 17.67 | 11.46 | 13.82 | 12.81 | 14.56 | 14.39 | -0.75 |
| Minimum | 12.18 | 4.68 | 9.44 | 9.18 | 7.79 | 8.56 | -2.81 |
| Std. Dev. | 1.63527 | 2.16889 | 1.08461 | 0.98864 | 2.115218 | 1.83617 | 0.63348 |
| Skewness | -0.0013 | -0.2364 | 0.28271 | 0.09495 | -0.18303 | -0.0276 | -0.4357 |
| Kurtosis | 1.79553 | 1.73973 | 2.57208 | 2.04756 | 1.724846 | 1.70594 | 1.61973 |
| Jarque-Bera | 2.47837 | 3.09503 | 0.85898 | 1.61131 | 3.006705 | 2.86597 | 4.5518 |
| Probability | 0.28962 | 0.21278 | 0.65084 | 0.4468 | 0.222383 | 0.2386 | 0.10271 |
| Sum | 614.49 | 343.71 | 466.49 | 443.79 | 465.45 | 471.63 | -69.21 |
| Sum Sq. Dev. | 106.965 | 188.163 | 47.0553 | 39.0966 | 178.966 | 134.86 | 16.0518 |
| Observations | 41 | 41 | 41 | 41 | 41 | 41 | 41 |

Source: Author's own compilation

4.2. Coefficient Covariance Matrix

Each pair of variables' covariance is shown in the symmetric matrix. The matrices values describe the magnitude and direction of multivariate data distributions in multidimensional space.

Table 3: Coefficient Covariance Matrix

| | LCD | LCT | LFED | LGDP | LIT | LST | P4 |
|------|----------|----------|----------|---------|----------|---------|----------|
| LCD | 1.14769 | 2.16468 | 1.01547 | 1.66085 | 1.85228 | 2.11356 | -0.47102 |
| LCT | 2.16468 | 4.58933 | 2.05024 | 3.42499 | 3.86289 | 4.44037 | -0.98931 |
| LFED | 1.01547 | 2.05024 | 0.95357 | 1.54929 | 1.74348 | 1.97682 | -0.44318 |
| LGDP | 1.66085 | 3.42499 | 1.54929 | 2.60889 | 2.91759 | 3.3534 | -0.7909 |
| LIT | 1.85228 | 3.86289 | 1.74348 | 2.91759 | 3.28927 | 3.7581 | -0.88278 |
| LST | 2.11356 | 4.44037 | 1.97682 | 3.3534 | 3.7581 | 4.36502 | -1.00105 |
| P4 | -0.47102 | -0.98931 | -0.44318 | -0.7909 | -0.88278 | -1.0011 | 0.3915 |

Source: Author's own compilation

4.3. Unit Root Testing

In time series data, stationarity is an important concern. To evaluate the nature of stationarity, unit root tests are performed. In this study, the ADF test has been applied, and the results are shown in the table below. The table reveals that all variables are stationary at their levels, with the exception of PIV, which is stationary only at the first difference.

Table 4: Unit Root Testing (ADF)

| Variables | At level | |
|-----------|----------|---|
| LGDP | 0 | - |
| LIT | 0.0004 | - |
| LST | 0.0001 | - |
| LCD | 0.0008 | - |
| LCT | 0.0004 | - |
| LFED | 0.0102 | - |
| P4 | - | 0 |

Source: Author's own compilation

4.4. Vector Auto Regression

The vector auto regression (VAR) model is a statistical method designed to analyze the relationships among multiple variables as they evolve over time. By incorporating multivariate time series, VAR models enhance the single-variable (univariate) autoregressive model. They are extensively utilized in both economics and the natural sciences.

Table 5: Vector Auto Regressive Estimates

| | Standard errors in () & t-statistics in [] | | | | | | |
|----------|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------------------------|
| | LCD | LCT | LFED | LGDP | LIT | LST | P4 |
| LCD(-1) | 0.353021 (0.29176) [1.20999] | -0.8825 (0.54753) [-1.61175] | 0.055636 (0.15648) [0.35555] | 0.340744 (0.26573) [1.28230] | -0.0078 (0.35416) [-0.02208] | -0.2737 (0.67013) [-0.40848] | -0.0563 -0.481 [-0.11697] |
| LCD(-2) | 0.153491 (0.24006) [0.63940] | 0.634253 (0.45050) [1.40788] | 0.111349 (0.12875) [0.86484] | -0.0558 (0.21864) [0.25505] | 0.244700 (0.29140) [0.83974] | -0.2996 (0.55138) [-0.54343] | 0.33508 -0.3957 [0.84674] |
| LCD(-3) | -0.5795 (0.26315) [-2.20216] | 0.905355 (0.49384) [1.83329] | 0.180263 (0.14114) [1.27722] | 0.270882 (0.23967) [1.13021] | 0.054951 (0.31943) [0.17203] | 0.385729 (0.60442) [0.63818] | -0.353 -0.4338 [-0.81375] |
| LCD(-4) | -0.676 (0.27965) [-2.41724] | -0.0521 (0.52481) [-0.09936] | 0.052670 (0.14999) [0.35116] | 0.167156 (0.25471) [0.65627] | -0.357 (0.33946) [-1.05180] | -0.0884 (0.64233) [-0.13759] | 0.62806 -0.461 [1.36237] |
| LCT(-1) | -0.4275 (0.27685) [-1.54429] | -0.1734 (0.51955) [-0.33371] | 0.230387 (0.14849) [1.55158] | 0.245280 (0.25215) [0.97274] | 0.135945 (0.33606) [0.40452] | 0.291460 (0.63589) [0.45835] | -1.0419 -0.4564 [-2.28281] |
| LCT(-2) | -0.0107 (0.26620) [-0.04013] | -0.0936 (0.49957) [-0.18730] | -0.3824 (0.14277) [2.67841] | -0.0349 (0.24245) [0.14401] | 0.024561 (0.32314) [0.07601] | -0.3707 (0.61143) [-0.60628] | 1.07102 -0.4388 [2.44061] |
| LCT(-3) | -0.3297 (0.24959) [-1.32093] | -0.2292 (0.46840) [-0.48931] | 0.243854 (0.13387) [1.82163] | 0.160573 (0.22733) [0.70635] | 0.270561 (0.30298) [0.89301] | -0.0349 (0.57328) [-0.06091] | -1.27 -0.4115 [-3.08671] |
| LCT(-4) | -0.78 (0.22877) [-3.40967] | 0.214054 (0.42933) [0.49858] | -0.1202 (0.12270) [0.97974] | 0.182961 (0.20837) [0.87807] | -0.0412 (0.27770) [-0.14822] | -0.185 (0.52547) [-0.35212] | 0.30208 -0.3771 [0.80098] |
| LFED(-1) | 0.529678 (0.31080) [1.70426] | 0.147353 (0.58326) [0.25264] | 0.247147 (0.16669) [1.48266] | -0.1075 (0.28307) [0.37972] | -0.0258 (0.37727) [-0.06837] | 0.291215 (0.71386) [0.40794] | -0.3106 -0.5124 [-0.60625] |
| LFED(-2) | 0.529179 (0.36634) [1.44452] | -0.2266 (0.68749) [-0.32955] | -0.4383 (0.19648) [2.23091] | -0.1691 (0.33366) [0.50675] | -0.2272 (0.44469) [-0.51087] | -0.8523 (0.84143) [-1.01296] | 1.40563 -0.6039 [2.32757] |
| LFED(-3) | -0.5267 (0.47955) [-1.09836] | 1.153951 (0.89994) [1.28225] | 0.131206 (0.25720) [0.51014] | 0.078119 (0.43677) [0.17886] | 0.420517 (0.58211) [0.72240] | 0.958973 (1.10146) [0.87064] | -1.5351 -0.7905 [-1.94185] |
| LFED(-4) | -0.0446 (0.41786) [-0.10683] | -0.6352 (0.78419) [-0.80998] | -0.5149 (0.22412) [2.29743] | 0.168917 (0.38059) [0.44383] | -0.5841 (0.50724) [-1.15158] | -0.2555 (0.95978) [-0.26625] | 1.81278 -0.6889 [2.63161] |
| LGDP(-1) | 1.006369 (0.42410) [2.37296] | -1.5107 (0.79589) [-1.89812] | 0.584527 (0.22746) [2.56980] | -0.0184 (0.38627) [0.04773] | -0.0042 (0.51480) [-0.00807] | 0.542797 (0.97410) [0.55723] | -1.3933 -0.6991 [-1.99298] |
| LGDP(-2) | 2.067435 (0.36375) [5.68365] | -1.2085 (0.68264) [-1.77039] | -0.0117 (0.19509) [0.05981] | -0.6827 (0.33130) [2.06079] | 0.597048 (0.44155) [1.35216] | -0.0783 (0.83549) [-0.09373] | 0.73691 -0.5996 [1.22891] |
| LGDP(-3) | 1.291164 (0.60374) [2.13859] | -0.7771 (1.13302) [-0.68588] | 0.703245 (0.32381) [2.17177] | -0.003 (0.54989) [0.00547] | 0.707271 (0.73287) [0.96507] | 0.658735 (1.38673) [0.47503] | -1.6707 -0.9953 [-1.67859] |
| LGDP(-4) | -0.3593 (0.29682) [-1.21038] | -0.0584 (0.55703) [-0.10490] | -0.6379 (0.15920) [4.00674] | 0.160606 (0.27034) [0.59408] | -0.4008 (0.36030) [-1.11238] | 0.128159 (0.68176) [0.18798] | 0.23832 (0.48931) [0.48706] |
| LIT(-1) | 0.929080 (0.29298) | 0.282776 (0.54983) | 0.310179 (0.15714) | -0.3871 (0.26685) | 0.361594 (0.35565) | -0.3402 (0.67295) | 0.947402 (0.48298) |

| | | | | | | | |
|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| LIT(-2) | [3.17110] 0.009394 (0.44854) | [0.51430] 0.969639 (0.84176) | [1.97392] 0.528909 (0.24057) | [1.45080] -0.0318 (0.40853) | [1.01672] 0.305003 (0.54448) | [-0.50552] 0.728922 (1.03025) | [1.96156] -0.1897 (0.73943) |
| LIT(-3) | [0.02094] -0.4983 (0.36560) | [1.15191] -0.0739 (0.68611) | [2.19856] -0.2702 (0.19609) | [0.07791] 0.304415 (0.33299) | [0.56018] -0.1485 (0.44380) | [0.70752] -0.3373 (0.83974) | [-0.25660] 0.412473 (0.60269) |
| LIT(-4) | [-1.36286] -0.2698 (0.24176) | [-0.10776] -0.122 (0.45371) | [1.37788] 0.123718 (0.12967) | [0.91419] 0.028751 (0.22020) | [-0.33472] -0.4144 (0.29347) | [-0.40166] -0.2121 (0.55530) | [0.68438] -0.3409 (0.39855) |
| LST(-1) | [-1.11586] -0.458 (0.25882) | [-0.26880] 1.649289 (0.48572) | [0.95412] -0.1318 (0.13882) | [0.13057] 0.076266 (0.23573) | [-1.41218] 0.116778 (0.31418) | [-0.38198] 0.719903 (0.59448) | [-0.85542] -0.0996 (0.42667) |
| LST(-2) | [-1.76943] -0.0498 (0.22299) | [3.39556] -0.3774 (0.41847) | [0.94912] -0.1088 (0.11960) | [0.32353] 0.042987 (0.20310) | [0.37169] -0.1998 (0.27068) | [1.21098] -0.2499 (0.51218) | [-0.23347] 0.680266 (0.36760) |
| LST(-3) | [-0.22337] -0.0789 (0.21932) | [-0.90184] 0.315337 (0.41160) | [0.90943] 0.201934 (0.11763) | [0.21166] 0.042428 (0.19976) | [-0.73814] 0.157947 (0.26623) | [-0.48793] -0.1044 (0.50376) | [1.85058] -0.1826 (0.36156) |
| LST(-4) | [-0.35960] -0.1669 (0.25493) | [0.76613] 0.950455 (0.47842) | [1.71665] -0.4367 (0.13673) | [0.21240] 0.089333 (0.23219) | [0.59326] -0.1325 (0.30946) | [-0.20728] 0.220688 (0.58555) | [-0.50500] 0.442086 (0.42026) |
| P4(-1) | [-0.65478] 0.489879 (0.15421) | [1.98665] 0.017371 (0.28940) | [3.19425] 0.171658 (0.08271) | [0.38474] -0.3362 (0.14045) | [-0.42828] -0.0127 (0.18719) | [0.37689] -0.3029 (0.35420) | [1.05195] 0.624572 (0.25422) |
| P4(-2) | [3.17668] 0.195415 (0.23463) | [0.06002] 0.421313 (0.44033) | [2.07544] 0.189303 (0.12584) | [2.39388] -0.0244 (0.21370) | [-0.06789] 0.241931 (0.28482) | [-0.85528] 0.248142 (0.53893) | [2.45685] -0.0807 (0.38679) |
| P4(-3) | [0.83285] -0.2216 (0.18404) | [0.95682] 0.180437 (0.34538) | [1.50427] -0.3158 (0.09871) | [0.11422] -0.1432 (0.16762) | [0.84942] -0.0108 (0.22340) | [0.46044] 0.211236 (0.42271) | [-0.20875] 0.194956 (0.30339) |
| P4(-4) | [-1.20415] 0.590186 (0.21869) | [0.52243] -0.9793 (0.41042) | [3.19979] 0.162215 (0.11729) | [0.85460] 0.059838 (0.19919) | [-0.04825] -0.0968 (0.26547) | [0.49971] 0.034065 (0.50232) | [0.64260] -0.2137 (0.36052) |
| C | [2.69868] -24.784 (4.05969) | [-2.38616] 11.52180 (7.61866) | [1.38297] 0.714093 (2.17736) | [0.30041] 8.535795 (3.69754) | [-0.36471] -0.4177 (4.92797) | [0.06782] -7.5826 (9.32462) | [-0.59286] -1.4899 (6.69240) |
| R-squared | [-6.10490] 0.998712 | [1.51231] 0.998912 | [0.32796] 0.999575 | [2.30850] 0.999549 | [-0.08475] 0.999394 | [-0.81318] 0.998254 | [-0.22262] 0.992566 |
| Adj. R-squared | 0.994206 | 0.995105 | 0.998087 | 0.997973 | 0.997275 | 0.992141 | 0.966547 |
| Sum sq. resids | 0.042751 | 0.150563 | 0.012298 | 0.035464 | 0.062994 | 0.225540 | 0.116179 |
| S.E. equation | 0.073102 | 0.137187 | 0.039207 | 0.066581 | 0.088737 | 0.167906 | 0.120509 |
| F-statistic | 221.6147 | 262.3944 | 671.7206 | 633.9128 | 471.5746 | 163.3164 | 38.14730 |
| Log likelihood | 72.61992 | 49.32864 | 95.67059 | 76.07711 | 65.44853 | 41.85249 | 54.12484 |
| Akaike AIC | -2.3578 | -1.0988 | -3.6038 | -2.5447 | -1.9702 | -0.6947 | -1.3581 |
| Schwarz SC | -1.0952 | 0.163766 | -2.3412 | -1.2821 | -0.7076 | 0.567882 | -0.0955 |
| Mean dependent | 11.56838 | 8.744595 | 10.98757 | 15.25946 | 11.78757 | 11.71459 | -1.7214 |
| S.D. dependent | 0.960363 | 1.960902 | 0.896358 | 1.478732 | 1.699960 | 1.894041 | 0.658868 |
| Log likelihood | | 567.4136 | | | | | |
| Akaike information criterion | | -19.698 | | | | | |
| Schwarz criterion | | -10.86 | | | | | |

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4.5. Lag Order Selection Criteria

There are several criteria in the literature for selecting lag lengths. The results are shown in the table below. Based on this table, lag "4" is chosen, as it is suggested by various lag selection criteria, including LR, FPE, AIC, SC, and HQ.

Table 5: Lag Order Selection Criteria

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|-----|---------|-----------|-----------|-----------|-----------|-----------|
| 0 | -20.187 | NA | 1.03E-08 | 1.469584 | 1.774352 | 1.577029 |
| 1 | 256.936 | 434.4094 | 4.75E-14 | -10.8614 | -8.423254 | -10.00184 |
| 2 | 307.759 | 60.43833 | 5.79E-14 | -10.95995 | -6.388425 | -9.348272 |
| 3 | 389.485 | 66.26435 | 2.47E-14 | -12.72892 | -6.024022 | -10.36513 |
| 4 | 567.414 | 76.94205* | 2.94e-16* | -19.6983* | -10.8975* | -16.5822* |

Author's own Source: compilation

4.6. ARDL Bound Testing Results

Selected Model: ARDL(4, 4, 4, 4, 4, 4)

| Variable | Coefficient | Std. Error | t-Statistic | Prob.* |
|----------|-------------|------------|-------------|--------|
| LGDP(1) | -1.4955 | 0.27256 | -5.487 | 0.0316 |
| LGDP(2) | -1.9699 | 0.3195 | -6.1656 | 0.0253 |
| LGDP(3) | -1.2957 | 0.34144 | -3.7947 | 0.063 |
| LGDP(4) | 0.4888 | 0.20431 | 2.39251 | 0.1391 |

| | | | | |
|--------------------|---------|---------|-----------------------|---------|
| LCD | 0.25143 | 0.1658 | 1.51646 | 0.2687 |
| LCD(1) | -0.2169 | 0.11725 | -1.8501 | 0.2055 |
| LCD(2) | 0.26564 | 0.12259 | 2.1669 | 0.1626 |
| LCD(3) | 0.77679 | 0.12484 | 6.22224 | 0.0249 |
| LCD(-) | 0.35285 | 0.16769 | 2.10418 | 0.17 |
| LCT | -0.5815 | 0.09117 | -6.3783 | 0.0237 |
| LCT(-1) | 0.08145 | 0.12141 | 0.67088 | 0.5714 |
| LCT(-2) | 0.13909 | 0.13352 | 1.04171 | 0.4069 |
| LCT(-3) | -0.006 | 0.11427 | -0.0526 | 0.9628 |
| LCT(-4) | 0.59765 | 0.14839 | 4.02764 | 0.0565 |
| LST | 0.23537 | 0.08786 | 2.67896 | 0.1157 |
| LST(-1) | 1.01661 | 0.15443 | 6.58313 | 0.0223 |
| LST(-2) | -0.0393 | 0.09412 | -0.418 | 0.7166 |
| LST(-3) | 0.17095 | 0.08895 | 1.92182 | 0.1946 |
| LST(-4) | 0.81739 | 0.1501 | 5.44574 | 0.0321 |
| LIT | 0.13897 | 0.11405 | 1.21849 | 0.3473 |
| LIT(-1) | -0.5529 | 0.22764 | -2.4288 | 0.1358 |
| LIT(-2) | 0.11141 | 0.18272 | 0.60974 | 0.6041 |
| LIT(-3) | 0.58913 | 0.15155 | 3.88734 | 0.0603 |
| LIT(-4) | 0.08724 | 0.09653 | 0.90377 | 0.4615 |
| LFED | 0.38849 | 0.25658 | 1.51407 | 0.2692 |
| LFED(1) | -0.314 | 0.14513 | -2.1637 | 0.1629 |
| LFED(2) | -0.0402 | 0.16845 | -0.2384 | 0.8337 |
| LFED(3) | 0.55601 | 0.20251 | 2.7456 | 0.111 |
| LFED(4) | 0.14085 | 0.2137 | 0.65909 | 0.5776 |
| P4 | 0.00623 | 0.09558 | 0.06516 | 0.954 |
| P4(-1) | -0.4468 | 0.12511 | -3.5714 | 0.0702 |
| P4(-2) | 0.00639 | 0.0931 | 0.06859 | 0.9516 |
| P4(-3) | 0.09066 | 0.11265 | 0.80479 | 0.5054 |
| P4(-4) | -0.7143 | 0.12798 | -5.5813 | 0.0306 |
| C | 23.0419 | 3.64521 | 6.32115 | 0.0241 |
| R-squared | | 0.99999 | Mean dependent var | 15.2595 |
| Adjusted R-squared | | 0.99978 | S.D. dependent var | 1.47873 |
| S.E. of regression | | 0.02199 | Akaike info criterion | -5.8224 |
| Sum squared resid | | 0.00097 | Schwarz criterion | -4.2986 |
| Log likelihood | | 142.715 | Hannan-Quinn criter. | -5.2852 |
| F-statistic | | 4788.36 | Durbin-Watson stat | 2.1429 |
| Prob(F-statistic) | | 0.00021 | | |

*Note: p-values and any subsequent tests do not account for model selection

Source: Author's own compilation

The value of CointEq(1) is negative and its P-value is less than 5% resulting long run relationship among variables

4.7 Error Correction Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------|-------------|------------|-------------|--------|
| D(LGDP(-1)) | 2.74483 | 0.15487 | 17.7232 | 0.0032 |
| D(LGDP(-2)) | 0.7032 | 0.07104 | 9.8985 | 0.0101 |
| D(LGDP(-3)) | -0.4582 | 0.04539 | -10.094 | 0.0097 |
| D(LFED) | 0.31915 | 0.03985 | 8.00974 | 0.0152 |
| D(LFED(-1)) | -0.5695 | 0.04275 | -13.321 | 0.0056 |
| D(LFED(-2)) | -0.7116 | 0.05549 | -12.825 | 0.006 |
| D(LFED(-3)) | -0.0722 | 0.04251 | -1.6984 | 0.2315 |
| D(LCT) | -0.5805 | 0.02573 | -22.559 | 0.002 |
| D(LCT(-1)) | -0.6829 | 0.04513 | -15.132 | 0.0043 |
| D(LCT(-2)) | -0.6252 | 0.03499 | -17.87 | 0.0031 |
| D(LCT(-3)) | -0.5817 | 0.03679 | -15.813 | 0.004 |
| D(LCD) | 0.26737 | 0.03732 | 7.16364 | 0.0189 |
| D(LCD(-1)) | -1.4441 | 0.08055 | -17.927 | 0.0031 |
| D(LCD(-2)) | -1.1591 | 0.07482 | -15.493 | 0.0041 |
| D(LCD(-3)) | -0.3446 | 0.03848 | -8.9573 | 0.0122 |
| D(LIT) | 0.13894 | 0.03422 | 4.0598 | 0.0557 |
| D(LIT(-1)) | -0.8348 | 0.06297 | -13.256 | 0.0056 |
| D(LIT(-2)) | -0.6309 | 0.05316 | -11.869 | 0.007 |
| D(LIT(-3)) | -0.1107 | 0.03049 | -3.6298 | 0.0682 |
| D(LST) | 0.21088 | 0.02225 | 9.47852 | 0.0109 |

| | | | | |
|--------------|---------|---------|---------|--------|
| D(LST(-1)) | -0.9207 | 0.05346 | -17.224 | 0.0034 |
| D(LST(-2)) | -0.9933 | 0.04884 | -20.34 | 0.0024 |
| D(LST(-3)) | -0.7935 | 0.05333 | -14.878 | 0.0045 |
| D(P4) | 0.01931 | 0.01972 | 0.97918 | 0.4307 |
| D(P4(-1)) | 0.60114 | 0.03729 | 16.1191 | 0.0038 |
| D(P4(-2)) | 0.64237 | 0.03001 | 21.4067 | 0.0022 |
| D(P4(-3)) | 0.70821 | 0.05315 | 13.3251 | 0.0056 |
| CoIntEq(-1)* | -5.2029 | 0.24571 | -21.175 | 0.0022 |

| | | | |
|--------------------|----------|---|-----------|
| R-squared | 0.99589 | Mean dependent var | 0.13023 |
| Adjusted R-squared | 0.98355 | S.D.dependent var | 0.08253 |
| S.E. of regression | 0.01059 | Akaike info criterion | -6.1588 |
| Sum squared resid | 0.00101 | Schwarz criterion | -4.9397 |
| Log likelihood | 141.937 | Hannan-Quinn criter | -5.729 |
| Durbin-Watson stat | 2.15661 | | |
| F-Bounds Test | | Null Hypothesis: No levels relationship | |
| Test Statistic | Value | Signif. | I(0) I(1) |
| F-statistic | 12.45514 | 10% | 1.99 2.94 |
| K | 6 | 5% | 2.27 3.28 |
| | | 2.5% | 2.55 3.61 |
| | | 1% | 2.88 3.99 |

Author's own Source: compilation

Bound Test indicates the result of Long Run relationship. Estimated results show that there is existence of co-integration because F-Statistic value is greater than upper and lower bound test.

Figure 1: CUSUM test

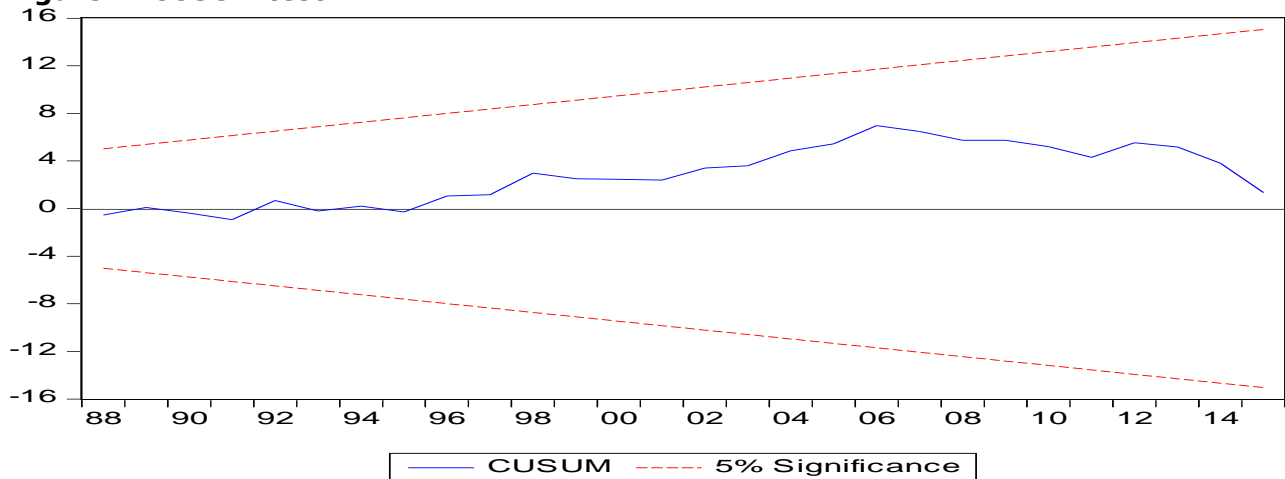
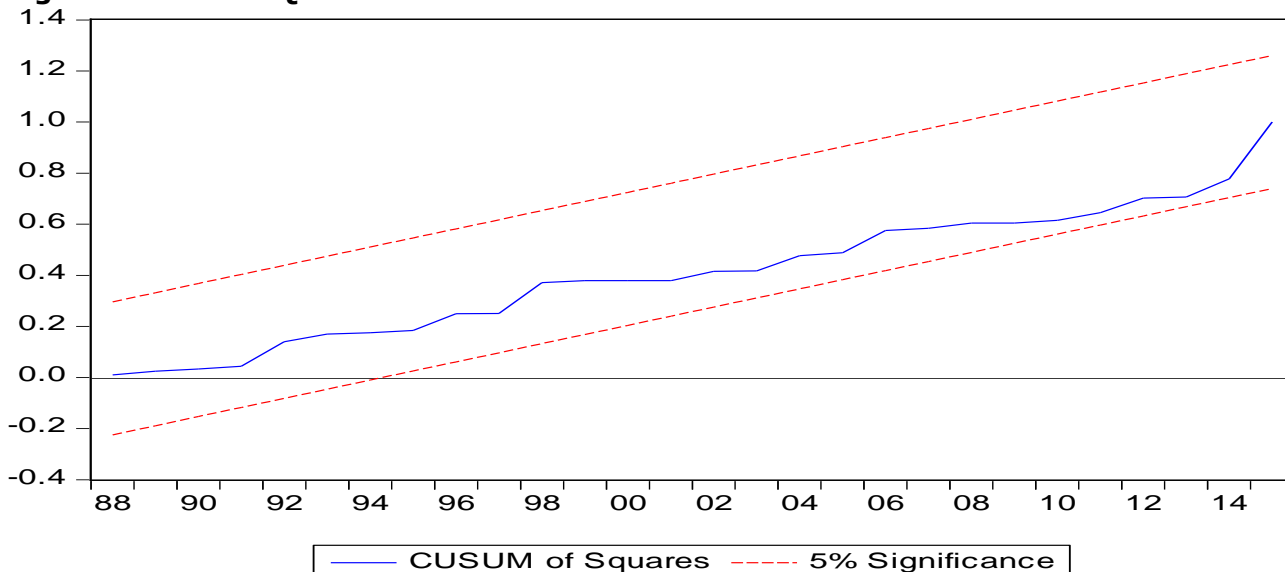


Figure 2: CUSUMSQ test



In the end, the model exhibited stability. To evaluate the stability of all coefficients in the ECM model, the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) were utilized. The CUSUM and CUSUMSQ statistics displayed in Figure 1 and Figure 2 indicate that both are significant at the 5% level. This implies that all coefficients in the proposed ECM model are stable over the sampling period.

5. Conclusions and Policy Recommendations

The research employed secondary data from 1979 to 2019, examining the relationships between taxation, political stability, and GDP. The findings suggest that both factors significantly impact economic growth in both the short and long term. This reinforces the notion that strategic adjustments to the tax system, alongside efforts to ensure political stability, can create a more favorable economic environment. The findings of the study suggest that enhancing indirect taxation could significantly boost economic growth in Pakistan. This conclusion aligns with various economic theories that emphasize the role of taxation in influencing economic performance.

- i. Taxation and Economic Growth: Economic theory often posits that taxation can have both positive and negative effects on growth. On one hand, taxes fund essential public services and infrastructure, which are critical for economic development. On the other hand, high tax rates can discourage investment and consumption, potentially hindering growth.
- ii. Indirect vs. Direct Taxation: Indirect taxes, such as sales taxes and value-added taxes, are typically considered less distortive than direct taxes on income or profits. This is because they are levied on consumption rather than on earnings, allowing individuals and businesses more freedom in their economic decisions. Increasing indirect taxes may encourage spending in sectors where growth is desired, thereby stimulating overall economic activity.
- iii. Political Stability: The relationship between political stability and economic growth is well-documented in economic literature. Political stability fosters a conducive environment for investment, as it reduces uncertainty. Investors are more likely to commit resources to a stable political climate, which can lead to job creation and economic expansion. Conversely, political instability can lead to capital flight, reduced consumer confidence, and hindered economic activity.
- iv. Fiscal Policy as a Tool for Growth: Fiscal policy, which includes government spending and taxation, is a crucial tool for influencing economic activity. In Pakistan, effective fiscal policy can enhance public investment in infrastructure, education, and healthcare, thereby facilitating long-term growth. The study highlights that both taxation and political stability are vital determinants of this policy.

5.1. Policy Recommendations

Given these insights, it is crucial for the government to:

- Maintain Current Tax Policies: Upholding effective tax policies can ensure a steady flow of revenue necessary for public investment and services that promote growth.
- Reduce Political Uncertainty: By fostering political stability, the government can enhance investor confidence and economic activity, which is essential for sustainable growth.
- Enhance Indirect Taxation: Improving the structure and rates of indirect taxes can potentially yield higher revenues without significantly burdening consumers, thus supporting economic growth.

In conclusion, the interplay between taxation, political stability, and economic growth is complex and requires careful consideration. Effective fiscal policy, grounded in stable political conditions, is fundamental for Pakistan to achieve its economic growth objectives.

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