Comparative Analysis of Fiscal Instrument and Economic Growth in Pakistan

Muhammad Yasir Nadeem
Lecturer Govt. Ambala Muslim Graduate College, Sargodha
Higher Education Department Punjab, Pakistan
Email: myasirnadeem10@gmail.com, myasirnadeem@gamgc.edu.pk
Orcid.org/0000-0001-8894-1996
Muhammad Imran
Assistant professor Govt. Associate college Chak 90 SB Sargodha
Higher Education Department Punjab, Pakistan.
Email: imran6006041@gmail.com
Ghulam Sarwar
Assistant Professor, Govt. Graduate College Jauharabad, Khushab
Higher Education Department Punjab, Pakistan.
Email: sarwarg_songal@yahoo.com

Abstract
This research investigates the role of fiscal instruments on the economic growth in Pakistan by using the dataset from 1986 to 2022. Various time-series estimation methods are employed to establish the connection among the selected variables. For unit root, the Augmented-Dickey Fuller (ADF) test revealed that all the variables become stationary at the level when the intercept and trend included. The Co-integration, likelihood method, and Vector Error-Correction Model (VECM) are used for long and short run relationship among the variables. The results show a positive association between GDP, direct taxes, and lump sum tax in the short term, as revealed by two co-integration equations and VECM. Moreover, the causality test concludes that GDP is not caused by defense expenditure. These findings suggest that the government of Pakistan should adopt a comprehensive fiscal policy to achieve effective outcomes and promote economic stability.
Keywords: Defense Expenditures, Gross Domestic Product, Direct Tax, Lump-sum Tax, Working Population and Trade to GDP ratio.
JEL Classification: E62, D63. C32, E62, H27, H30.

INTRODUCTION

Pakistan's economy is ranked 38th in the world in terms of nominal gross domestic product (GDP), with a population of over 201 million people, and a nominal GDP per capita of $1,550 (UN, 2022). Despite being an agricultural-based country, agricultural growth has not been able to assist economic growth due to a lack of proper policies. The government has faced budget deficits in the past, and has had to rely on foreign and domestic

borrowings to fulfill its expenditure needs. To regulate the economy, the government uses fiscal policy, which depends on its expenditure and revenue decisions for growth and stability. Sustainable economic growth enhancing the role in improving the social, economic, and political welfare of a country, particularly in developing nations like Pakistan that face various economic and social challenges.

To stimulate the growth, fiscal policy is used to regulate government spending and taxes. This policy can influence several aspects, such as inflation, division and distribution of resources, aggregate demand, and preventing economic dejection, the structure of fiscal policy in supplementary note figure 1.B. Tcherneva (2011) supports the idea that effective fiscal policy is crucial in achieving sustainable economic growth. Fiscal policy comprises two sets of actions: discretionary actions, where the government sets tax rates, tax bases, and government expenditure size, and automatic stabilizers, where variables adjust in response to determine economic environs. Fiscal instruments aim to achieve both micro and macro objectives, such as enhancing the distribution of resources, increasing investment, providing income and meeting the basic needs of low-income individuals. (Shoukat et al., 2013).

The economy of Pakistan has been facing problems from many years, which emerged many crises after 2013, mainly law and order situations, energy crises and structural problems, which have become a source of hesitation for new investors. Pakistan requires large foreign exchange requirements with a substantially lower level of foreign exchange reserves. The country also faced a weak financial situation embedded in short tax revenue, the small size of infrastructure, inadequate investment and low economic activities.

Defense expenditures of Pakistan are increasing from 2001 to onward. A major part of the expenditure is spent on defense, because of external security terrorizations and blasts in public places, security agencies and hospitals (Anwar, 2012). Terrorism has also caused a decrease in Foreign Direct Investment due to investors' decreased confidence in Pakistan's economic conditions. Moreover, the country's exchange rate has rocketed in 2001-02 to three times higher nowadays, which enlarge the trade deficit, stands at $35 billion. (GOP 2019).

Public debt is an important factor in a country's domestic growth. It can cause problems for both developed and developing countries. Managing public debt has become a significant challenge for developing countries in the 21st century. Pakistan is one such country that has faced a budget deficit problem in recent years (Ahmad et al., 2018). When a government spends more than it earns, it results in a budget deficit. There are three possible methods to finance such a deficit, namely borrowing, increasing tax rates, and printing new currency (Gumus, 2003; Dandan, 2011). However, increasing tax rates or levying new taxes is difficult to implement because it

is not popular among the people, and printing money leads to inflation. Therefore, the Pakistani government has relied on public debt to finance its deficit and developmental projects. Nevertheless, the country is facing problems due to high indebtedness. Therefore, effective public debt management is necessary for sustainable economic growth (Atique & Malik, 2012). In Pakistan, the domestic debt has increased in recent years due to a decline in external debt. The reliance on short-term floating debt has increased, leading to refinancing risk and high rollover. The current government is taking important steps to improve the public debt portfolio (Akcoraoglu & Acikgoz 2011).

Pakistan has a long history of budget deficits, with the government frequently spending more than it collects in revenue. The reasons for this are complex and multifaceted, but they include factors such as political instability, weak tax collection systems, high levels of corruption, and a heavy reliance on external financing (Ahmad et, al., 2018). The table 1 represent that Pakistan is the country faced a budget deficit from independence, due to a lack of revenue sources and infrastructure. The government relied heavily on foreign aid to support its development projects. However, by the 1970s, the situation had worsened due to the nationalization policies of the government, which led to a decline in private investment and a decrease in government revenue.

Table 1. Budget deficit in Pakistan 1986 to 2022

Time period	Taxes revenue	Govt. Expenditure	Deficit in Budget
1986-1990	17.9	24.7	6.8
1991-1995	17.5	24.4	6.9
1996-2000	16.5	21.4	4.9
2001-2005	14.2	21.1	6.9
2006-2010	14.0	20.5	6.5
2011-2015	14.4	19.7	5.3
2016-2020	13.5	20.2	6.7
2021-2022	16.3	23.4	7.1

Source: Economic survey of Pakistan and Pakistan Burro of Statistics

In the 1980s, Pakistan faced a major debt crisis, with the government borrowing heavily from international financial institutions to finance its budget deficit. This led to a period of austerity measures and economic reforms, including privatization of state-owned enterprises and tax reforms. However, the budget deficit continued to be a persistent problem, particularly during periods of political instability and conflict. For example, the budget deficit widened significantly during the 1990s as show in table 1, due to political instability, high levels of corruption, and weak tax collection systems. In recent years, the budget deficit has continued to be a significant challenge for Pakistan's economy. In the fiscal year 2020-21, the budget

deficit was estimated to be around 7.1% of GDP, despite efforts by the government to reduce expenditures and increase revenues (GOP, 2022). The pandemic of COVID-19 has also affect the Pakistan's economy, with the government increasing spending to support households and businesses affected by the pandemic, leading to a wider budget deficit (Andani, 2020).

Direct taxes can be classified into two categories: proportional wage-income tax, which is a direct tax, and taxes on income, payroll and property, including taxes on inheritance, capital, and financial transactions. These latter types of direct taxes may discourage investment in physical and human capital, ultimately hindering economic growth. In contrast, lump-sum taxes are a fixed amount of tax that remains the same regardless of the taxpayer's situation. Lump-sum taxes may limit people's disposable income and rise budget constraints; they do not affect the relative prices of goods. Indirect taxes such as customs, sales taxes, and federal excise taxes are examples of lump-sum taxes (Bleany et al., 2000).Several studies have specified that there existed a strong positive correlation between economic growth and trade-to-GDP ratio (Nusrini, 2017; Lau et al., 2017; Kakar, 2011). Conversely, research has suggested that the education and capital-expenditure insignificant impact on growth. In contrast, expenditures on transport, communication, and health have been found to have a positive correlation with the economy (Nurudeen & Usman, 2010; Akram, 2011).

Government can use fiscal policy, which includes tools like taxes and government spending, to stabilize the economy. To achieve this, the government may provide a debt-financed tax cut to consumers to enhance consumption through decrease the budget deficit (Ali & Ahmad, 2010; Haris & Mohammad, 2015; Haseeb et al., 2014). However, this may not be effective as consumers may save the tax cut for future tax obligations, rendering fiscal policy ineffective. In contrast, the Keynesian view, fiscal policy would be more functioning because consumers did not save the extra tax cut and instead increase private consumption and aggregate demand, thereby reducing the budget deficit and helping the government achieve its objectives (Cyril, 2016; Jamal, 2016).

Ahmad and Wajid (2013) established that productive expenditure has significant influence on economic growth (Frank et al., 2014). Similarly, Chude et al. (2013) reported that macro-economic indicators in the model had an impact on growth in Nigeria. In a separate investigation of Pakistan's economy, Sheikh (2013) noted a low tax-to-GDP ratio and a growing fiscal deficit. Zaman et al. (2012) discovered a significant destructive impact of fiscal deficit and public expenditure on economic growth. Joiya et al. (2012) observed a co-integration between defense spending and the fiscal development and growth. Bhunia (2011) found a negative correlation between expenditures on agriculture and education and growth, another study found same result (Ahmed (2011).

Data Sources and methodology

In this analysis utilized data spanning from 1988 to 2022. The data pertaining to Direct tax was sourced from the economic survey of Pakistan for the year 2022. The GDP and defense expenditure data were collected from the World development indicator, a database maintained by the World Bank, for the year 2022. Working Population, Trade to GDP ratio, and Interest rate data were also sourced from the World development indicator. The data on Direct tax and Lump-sum tax were obtained from the Economic Surveys of Pakistan.

Model

$$\mathbf{GDP} = \boldsymbol{\alpha_0} + \boldsymbol{\beta_1 DE_t} + \boldsymbol{\beta_2 TRD_t} + \boldsymbol{\beta_3 DT_t} + \boldsymbol{\beta_4 LT_t} + \boldsymbol{\beta_5 LF_t} + \boldsymbol{\mu}$$

Where

GDP= Gross Domestic Product (percentage of GDP growth)

DE= Defense Expenditures (Percentage of GDP)

DT= Direct Tax

LT= Lump-sum Tax

LF= Working Population = (Labor force/adult population) 100

TRD= Trade to GDP ratio=(Imports + Exports/GDP)100

Stationarity is a key assumption in time series analysis. A stationary meaning constant means and variance over time. The Augmented Ducky Fuller (ADF) and Co-integration techniques were applied, whereas for long-run relationship Vector Auto-Regressive (VAR). The Johansen co-integration technique is a two-step procedure. In the first step, the time series are transformed to stationary time series using a Johansen transformation. The Johansen transformation is a family of power transformations that can be used to make non-normal distributions approximately normal. The transformed time series are then tested for stationarity using standard methods, such as the ADF test. In the second step, the transformed time series are regressed on each other to test for co-integration. If the residuals from the regression are stationary, then the time series are said to be co-integrated. The Johansen co-integration technique has been shown to have good statistical properties and is widely used in empirical finance and economics. Many researchers have used this technique in their studies recently in Pakistan such as (Arjoon, & Bhatnagar 2019; Akhtar, & Ali, 2020; Asghar, & Nasreen, 2021)

RESULTS AND DISCUSSION

The summary statistics is shown in supplementary note at the end Table 1.B. If the data is found to be non-stationary, any resulting integration may be considered meaningless or a "spurious regression". In this case, the unit root test can be used to determine if the ADF test statistics are greater than the critical value. If so, we would reject the null hypothesis (H0) and accept (H1).

Table 2 ADF test result

Augmented Ducky Fuller (ADF) Result At Level.

Variables	Test result with intercept	with intercept and trend
GDP (Gross Domestic Product)	-3.646342	-4.054871**
DE (Defense Expenditures)	-2.954021*	-3.552973**
DT (Direct Tax)	-2.954021*	-3.552973**
LT (Lump-sum Tax)	-2.957110	-3.552973**
LF (Labor Force)	-2.986225	-3.215267**
TRD (Trade)	-2.954021*	-2.552973**

Note: * shows the stationary with intercept, ** stationary with intercept and trend at 5% and 10%.

Source: Author calculation

According to the ADF results show that they are stationary at the level only when the intercept is included. Conversely, gross domestic product, Lump-sum taxes, and labor force are non-stationary when only the intercept is included. All variables are stationary at the level when both the intercept and trend are included. However, variables such as defense expenditure, Trade to GDP ratio, interest rate, and direct taxes, these variables become stationary at the level when both the trend and intercept are included.

Table 3. Co-integration Results

Null-Ho	Trace Stat	0.05*Critical-V	Prob.**
R = 0	133.6570*	107.3466	0.0003**
R ≤ 1	88.00399*	79.34145	0.0095**
R ≤ 2	50.53409	55.24578	0.1220
R ≤ 3	29.47683	35.01090	0.1731
R ≤ 4	11.58705	18.39771	0.3407
R ≤ 5	0.063167	3.841466	0.8015
Null-Ho	Max-Eigen-Stat	0.05*Critical-Value	Prob.**
R = 0	45.65301*	43.41977	0.0281**
R ≤ 1	37.46990*	37.16359	0.0461**
R ≤ 2	21.05726	30.81507	0.4676
R ≤ 3	17.88978	24.25202	0.2767
R ≤ 4	11.52389	17.14769	0.2725
R ≤ 5	0.063167	3.841466	0.8015

2 co-integrating eqn(s) at 0.05 % level Max-eigenvalue also specifies 2 co-integrating equations at 0.05 % level.

Source: Author calculation

In order to investigate the long-term association among the variables, we employed the Johansen Co-integration test, which utilizes the Johansen

maximum likelihood method. The test generates two statistical outcomes, namely trace statistics and eigenvalue statistics. If the trace statistic value, which is based on the likelihood ratio, exceeds its critical value, we reject (H0) and conclude that co-integration exists. The value of R shows the number of co-integration equations, where R= 0 indicates no co-integration, R=1 indicates one co-integration equation, R=2 indicates two co-integration equations, and so on.

The Vector Auto-Regressive (VAR) method discovered that three lags were the most effective based on the Schwartz information criteria (SIC) and Akaike information criteria (AIC) and Following this, the study utilized ECM to assess the short-term and long-term effects of the lagged explanatory variables. This model allowed us to estimate the error correction term, which describes the process of adjustment towards long-run equilibrium.

Table 4. Vector Error Correction Estimates in the long run

Error Correction:	D(GDP)	D(DE)	D(DT)	D(LF)	D(LT)	D(TRD)
	0.077248	0.533938	0.863460	0.775141	1.013050	-0.664239
	(1.49785)	(0.28715)	(0.52829)	(0.91685)	(2.14426)	(1.57443)
	[0.05157]	[1.85946]	[1.63443]	[0.84544]	[0.47245]	[-0.42189]

Vector Error Correction Estimates in the short run

GDP(-1)	C	DE(-1)	DT(-1)	LF(-1)	LT(-1)	TRD(-1)
1	-6.84119	-0.09912	-0.07044	-0.04756	-0.08088	1.103992
		0.02881	0.00996	0.02439	0.01036	0.01108
		[-3.44073]	[-7.07343]	[-1.95014]	[-7.80911]	[99.6733]

Source: Author calculation

The VAR method was used to determine the optimal lag length using the AIC and SC. The results showed that three lags were optimal. The ECM was then employed to evaluate the short-term and long-term impacts of the lagged explanatory variables. This model estimated the error correction term, which captures the adjustment process to equilibrium in the long run. The short-run VEC estimates suggest that defense expenditures, direct taxes, labor force participation, and lump-sum taxes have a inverse relationship with GDP, while the trade to GDP ratio and interest rate have a positive relationship with GDP. A unit increase in defense expenditures, direct taxes, and the working population would reduce GDP by 9 %, 7 %, and 4 %, respectively, in the short run, while a unit increase in lump-sum taxes would reduce GDP by 8 %. In contrast, a positive correlation exists between GDP and the trade to GDP ratio, with the latter resulting in a 113 percent GDP increase. In the long run, GDP showed a 0.077248 percent adjustment towards equilibrium.

The Granger Causality results indicate that defense expenditure causes GDP, but GDP does not cause defense expenditure. Labor force causes direct taxes, but direct taxes do not cause the labor force. Direct tax causes lump-sum tax, but the latter does not depend on direct tax. Finally, lump-sum tax causes the trade-to-GDP ratio, but the trade-to-GDP ratio does not rely on lump-sum tax. The reveal, as expected, that all variables influence the GDP growth of Pakistan. The study determines the relationships among the labour force, direct tax, trade, defense expenditure, and GDP growth. A larger labor force can increase the economy's production capacity, leading to higher GDP growth. However, the quality of the labor force, including skills and education levels, can also affect economic growth. Direct tax revenue can be used to finance government spending on infrastructure, education, and other key areas that can promote economic growth. Higher tax revenue can enable the government to invest in critical areas of the economy, leading to higher GDP growth (Ahmad et, al., 2017).

Trade can be a significant driver of economic growth in Pakistan. Exports can generate foreign exchange, while imports can provide access to key inputs for production. However, external shocks and changes in global trade patterns can also influence Pakistan's economy. Defense expenditure can have a mixed impact on economic growth in Pakistan. While defense spending can support security and stability, it can also divert resources away from other key areas of the economy. Additionally, a high level of defense spending can lead to increased debt and borrowing, constraining economic growth.

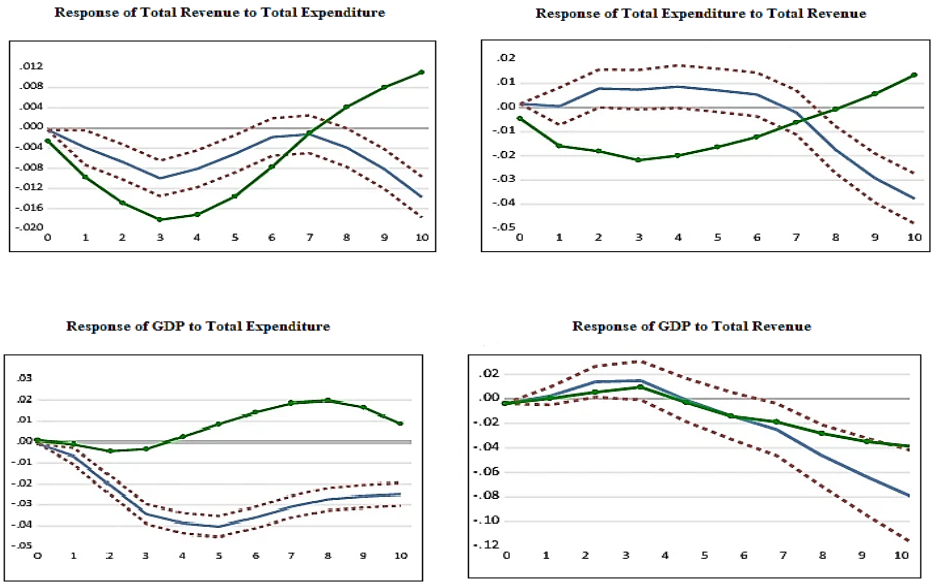

Figure 1. Positive shock and its impulse response on total revenue and total expenditure

The impulse response function (IRF) of total expenditure will show how a positive shock to total expenditure affects its own value over time, as well as the values of other variables in the model. For example, the IRF may show that a positive shock to total expenditure leads to an initial rise in total expenditure, which in turn leads to higher income, higher inflation, or other effects on other variables in the model. The IRF of total revenue in the figure 1 showed how a positive shock to total revenue affects its own value over time, as well as the values of other variables in the model. For example, the IRF may show that an encouraging shock to total revenue leads to an initial rise in total revenue, which in turn leads to higher prices, higher taxes, or other effects on other variables in the model, as show in figure 2.

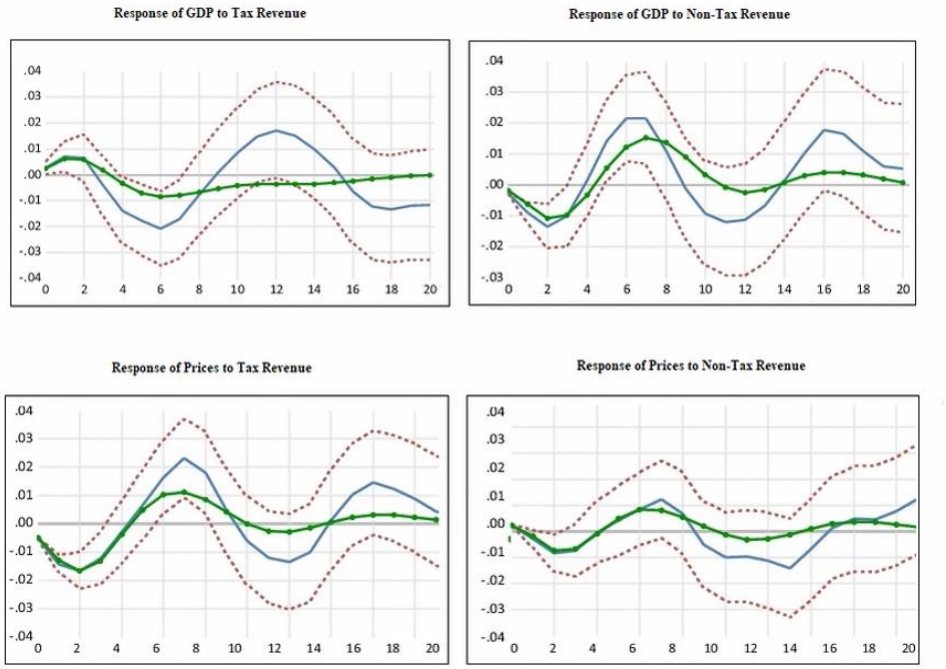

Figure 2. Positive shock and its impulse response on non-tax and tax revenue

The IRF of tax revenue will show how a positive shock to tax revenue affects its own value over time, as well as the values of other variables in the model as in figure 2. Similarly, the IRF of non-tax revenue will show how a positive shock to non-tax revenue affects its own value over time, as well as the values of other variables in the model. Such as, the IRF may show that a positive shock to tax revenue leads to an initial increase in tax revenue, which in turn leads to higher non-tax revenue and higher government expenditures. Similarly, the IRF may show that a positive shock to non-tax revenue leads to an initial increase in non-tax revenue, which in turn leads to higher tax revenue and higher government expenditures.

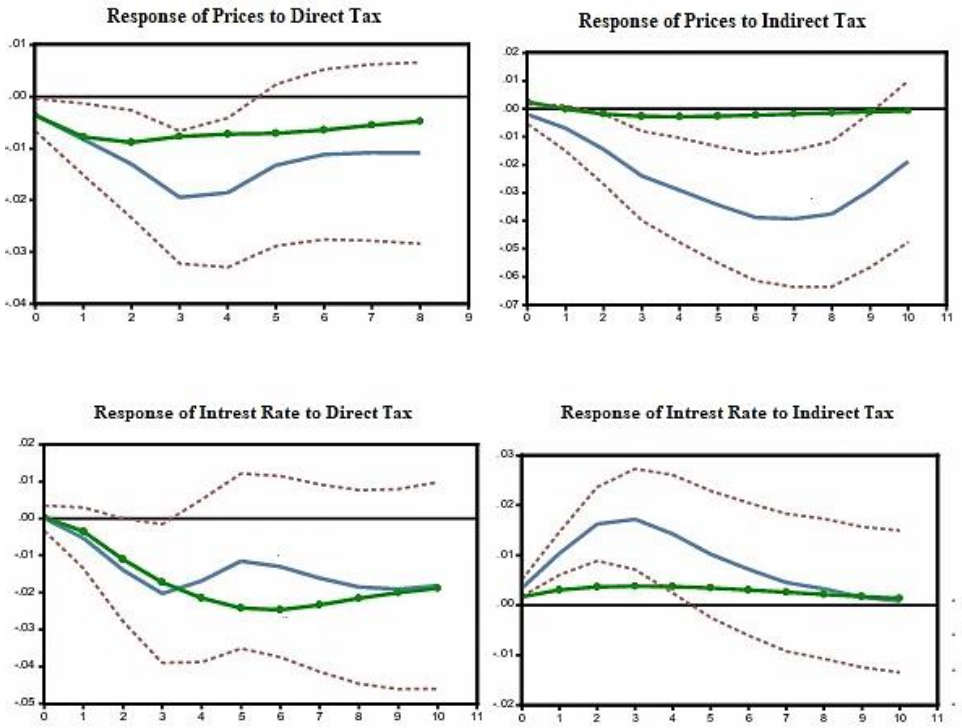

Figure 3 Positive shock and its impulse response on direct and indirect tax

In Figure 3 the IRF of direct tax revenue show how a positive shock to direct tax revenue affects its own value over time, as well as the values of other variables in the model. Similarly, the IRF of indirect tax revenue will show how a positive shock to indirect tax revenue affects its own value over time, as well as the values of other variables in the model. The IRF may show that a positive shock to direct tax revenue leads to an initial increase in direct tax revenue, which in turn leads to higher indirect tax revenue and higher government expenditures. Similarly, the IRF may show that a positive shock to indirect tax revenue leads to an initial increase in indirect tax revenue, which in turn leads to higher direct tax revenue and higher government expenditures.

CUSUM Square and CUSUM Test output

CUSUM (cumulative sum) and CUSUM squared tests are commonly used in econometrics to test for structural change in time series data. These tests are used to detect changes in the mean or variance of a time series, and they can be useful for detecting changes in economic relationships or for identifying periods of instability in financial markets. The CUSUM and CUSUM squared tests involve plotting, if the time series is stable and there are no structural changes, the plot should be approximately linear with no significant deviations. However, if there are structural changes, the plot will show significant deviations from linearity.

The output from a CUSUM and CUSUM squared test will typically include plots of the cumulative sum and its squares of the residuals, as well as critical values that can be used to determine whether the deviations from linearity are statistically significant. Such as, a CUSUM test might output a plot of the cumulative sum of the residuals, with a horizontal line indicating the critical value for a given significance level. Any deviations from the horizontal line that exceed the critical value would be considered statistically significant, indicating that there is evidence of a structural change in the time series. A plot of the cumulative sum of squares of the residuals, with a horizontal line indicating the critical value for a given significance level. Any deviations from the horizontal line that exceed the critical value would be considered statistically significant, indicating that there is evidence of a change in the variance of the time series.

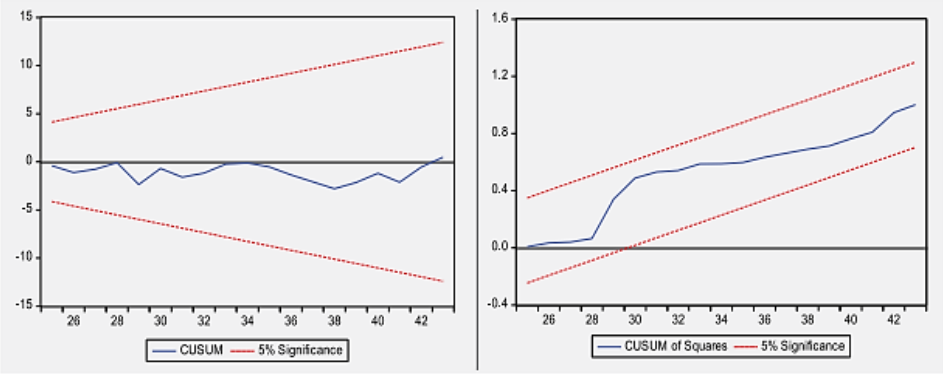

Figure 4 CUSUM Test output

CONCLUSION AND SUGGESTION

In this study, we investigate the effect of macro-economic variables on fiscal growth in Pakistan using data from 1988 to 2022. The study first conduct an ADF test to test for unit roots and find that all variables were stationary when intercept and trend are included. The Johansen co-integration result based on the trace and eigenvalue statistics and conclude that there are two co-integration equations in the long run. To estimate VEC model used a VAR lag order determine the optimal lag length. According to the AIC and SIC, found that three lags are optimal. Our results suggest that in the long run, there is a significant and positive association among gross domestic product, DT, lump-sum tax, working population, and defense expenditures. However, there is a negative relationship with the trade to GDP ratio.

Fiscal instruments refer to government policies that affect the economy through taxation, spending, and borrowing. Here are some suggestions for fiscal instruments that could promote economic growth in Pakistan. A sound fiscal policy can help attain sustainable economic growth.

Here are some ways in which fiscal policy can affect economic growth in Pakistan:

1. The government can increase its expenditure on infrastructure projects, such as roads, bridges, and power plants, which can create jobs and stimulate economic growth.
2. Tax cuts: The government can cut taxes to increase disposable income, boosting consumer spending and stimulating economic growth.
3. Fiscal consolidation: The govt. can undertake fiscal alliance measures, such as reducing government spending and growing revenue through tax reforms, to reduce the budget deficit and stabilize the economy. This can increase investor confidence and promote economic growth.
4. Public debt management: The government can manage public debt effectively by implementing sound fiscal policies, such as reducing unnecessary spending and increasing revenue through tax reforms. This can reduce the burden of debt on the economy and promote economic growth.
5. Targeted subsidies: The government can provide targeted subsidies to support key sectors of the economy, such as agriculture and small and medium-sized enterprises, which can promote economic growth and reduce poverty.

There is a lively debate among economists regarding the role of fiscal policy in promoting economic growth, and this study suggests that fiscal policy can indeed play a crucial role in promoting economic growth in Pakistan. However, it is vital to ensure that fiscal policies are implemented in a sustainable and equitable manner to achieve their intended goals. Economic growth is critical for refining people's living standards, particularly in developing countries such as Pakistan that face numerous social and economic challenges. Macroeconomic policies that encourage fast and sustainable economic growth can help alleviate poverty and stabilize other macroeconomic indicators. Therefore, fiscal policy is an indispensable tool for achieving consistence economic growth in Pakistan.

REFERENCES

Ahmad, K., Ali, S., & Ali, A. (2018). Trade Revenue Implications of Trade Liberalization in Pakistan. Pakistan Journal of applied economics24 (special), 27-50.

Ahmad, K., & Wajid, S. (2013). What matters for economic-growth in Pakistan: fiscal policy or its composition? Asian Economic and Financial Review, 3(2), 196-225.

Ahmed, K., Qasim, M., & Chani, M. (2017). Impact of exchange rate on exports in case of Pakistan. Bulletin of Business and Economics,6(2), 98-102

Akcoraoglu, A., & Acikgoz, S. (2011). Employment, International Trade and Foreign Direct Investment: Time-series Evidence from Turkey.

International Research Journal of Finance and Economics, 76(11), 89-101.

Akhtar, M. F., & Ali, S. (2020). Dynamic interdependence and spillover effects between oil prices and stock markets: Evidence from the United States and China using the Johnson co-integration technique. Energy Reports, 6, 1142-1149.

Akram, N. (2011). Impact of public debt on the economic growth of Pakistan. The Pakistan Development Review,50:4, 1-24.

Ali, S., & Ahmad, N. (2010). The Effects of Fiscal Policy on Economic-growth: Empirical Evidences Based on Time-series Data from Pakistan. The Pakistan Development Review, 49(4), 497-512.

Andani, A. S. (2020). Covid-19 is killing Pakistan's Economy. Economic Times Blog. Retrieved April 30, 2020 from https://economictimes.indiatimes.com/blogs/voices/covid-19-is-killing-pakistans-economy/.

Anwar, M. A., Rafique, Z., & Joiya, S. A. (2012). Defense spending-economic-growth nexus: a case study of Pakistan. Pakistan Economic and Social Review, 50(2), 163-182.

Arjoon, V., & Bhatnagar, N. (2019). Cointegration among South Asian stock markets: Evidence using the Johnson cointegration technique. Journal of Financial Economic Policy, 11(2), 189-201.

Asghar, A., & Nasreen, S. (2021). Financial development and energy consumption: Evidence from selected South Asian countries using the Johnson cointegration technique. Environmental Science and Pollution Research, 28(16), 20158-20167.

Atique, R., & Malik, K. (2012). Impact of domestic and external debt on the economic growth of Pakistan. World Applied Sciences Journal, 20(1), 120-129.

Cyril, U. M. (2016). The Effect of Fiscal Policy on Economic-growth in Nigeria. Journal of Finance and Accounting, 4(3), 140-145.

Dandan, M. M. (2011). Government expenditures and economic-growth in Jordan. International Conference on Economics and Finance Research, 4(11), 467-471.

Frank, A., Joseph, O.-M., & Ackah , I. (2014). Government Expenditures and Economic-growth dynamics in Ghana. International Journal of Economics and Empirical Research, 2(5), 180-190.

GOP. (2019). Economic survey of Pakistan (2018-19). Government of Pakistan Retrieved from https://www.finance.gov.pk/survey_1819.html.

GOP. (2022). Economic Survey of Pakistan. Islamabad: Finance division Govt. of Pakistan Retrieved from Available at: https://finance.gov.pk/survey_2022.html.

Haris, A. B., & Mohammad, A. K. (2015). The impact of federal government debt levels on productivity growth in Malaysia. International Journal of Business, Economics and Law, 7(3), 2289-1552.

Haseeb, M., Abu Bakar, N. A., Azam, M., Hassan, S., & Hariyatic, N. (2014). The Macroeconomic Impact of Defense Expenditure on Economic-growth of Pakistan: An Econometric Approach. Asian Social Science, 10(4), 203-213.

Jamal, H. 2016. Smoothing Sporadic Poverty and Inequality Estimates: Pakistan, 1985-2016. MPRA paper no. 91834.

Kakar, Z. K. (2011). Impact of Fiscal Variables on Economic Development of Pakistan. Romanian Journal of Fiscal Policy, 2(2), 1-10.

Khan, M. A., Khan, M. Z., & K. Z. (2012). Measuring the Impact of Fiscal Variables on Economic-growth in Pakistan: New Light on an Old Problem. Journal of Economic and Social Research, 14(2), 53-82.

Khan, R.E.A., Hashmi, B.J. 2015. Fiscal Policy and Income Inequality in Pakistan: An ARDL Approach. European Journal of Economic Studies, 3, 161-174.

Madni, G. R. (2013). Instrumental Effects of Fiscal Policy for Pakistan economy. The Romanian Economic Journal, XVI(50), 27-50.

Mughal, M., & Makhlouf, F. (2013). Labour effects of foreign and domestic remittances evidence from Pakistan. International Review of Applied Economics, 27(6), 798-821.

NkiruPatricia, C., & Daniel Izuchukwu, C. (2013). Impact of government expenditure on economic-growth. International Journal of Business and Management Review, 1(4), 64-71.

Padda, I. (2010). On Minimizing the Welfare Cost of Fiscal Policy: Pakistan's Case. Pakistan Journal of Applied Economics,20, 77-99.

Ramzan, M., Sarfraz, M., & Butt, I. M. (2013). Budget Deficit and Economic-growth: A Case Study of Pakistan. Interdisciplinary journal of contemporary research in business, 5(1), 911-926.

Salotti, S., & Trecroci, C. (2016). The impact of government debt, expenditure and taxes on aggregate investment and productivity growth. Economica, 83(330), 356-384.

Saeed, S and Khan, M . A. (2012). Ricardian Equivalence Hypothesis and Budgetary Deficits: The Case of Pakistan 1972-2008.Interdisciplinary journal of contemporary research in business, 3(9).

Shahid, M. (2014). Impact of Labour Force Participation on Economic-growth in Pakistan. Journal of Economics and Sustainable Development, 5(11), 89-94.

Shatti, A. S. (2014). The Effect of Fiscal Policy on Economic Development in Jordan. International Business Research, 7(12), 67-76.

Stock, J. H. and Watson, M. W. (1988). Testing for Common Trends. Journal of the American Statistical Association.

Sturzu, I. (2014). State debt: a conceptual treatment. Economy and Sociology: theoretical and scientifical journal, 2,53-59

Subhani, M. I., & Ali, J. (2010). Impact of Fiscal Policy on the Economy of Pakistan. South Asian Journal of Management Sciences, 4(1), 1-22.

Siddiki, J. U. (2008). The Ricardian Equivalence Hypothesis: Evidence from Bangladesh. Applied Economics, 42,1419–1435.

Tcherneva, P. R. (2011). Fiscal Policy Effectiveness: Lessons from the Great Recession. Levy Economics Institute of Bard College, Working Paper No. 649

UN Pakistan. (2022). World Population Dashboard Pakistan. https://www.unfpa.org/data/world-population/PK

WDI. (2021). World Development Indicator. USA: world Bank. Retrieved from http://datatopics.worldbank.org/world-development-indicators/

Bibliography:

Table 1.B Summary Statistics of the Data

	DE	DT	GDP	LF	LT	TRD
Mean	3.000702	11.28802	1.435189	3.742811	12.46947	6.085255
Median	3.119865	11.60511	1.576825	3.769290	12.58337	5.952287
Maximum	3.299534	13.70273	2.069488	3.839452	14.68080	7.547657
Minimum	2.415914	8.613230	0.014293	2.884801	10.20370	5.430579
Std. Dev.	0.276855	1.607450	0.521750	0.157776	1.258820	0.538225
Skewness	-0.747135	-0.124014	-0.907809	-4.910493	-0.112304	1.084822
Kurtosis	2.177024	1.678144	3.180850	7.32685	1.954507	3.475875
Jarque-Bera	4.122692	2.562495	4.716328	75.0173	1.619964	6.989573
Probability	0.127283	0.277691	0.094594	0.000000	0.444866	0.030355
Sum	102.0239	383.7925	48.79643	127.2556	423.9618	206.8987
Sum Sq. Dev.	2.529415	85.26860	8.983345	0.821473	52.29270	9.559643
Observations	34	34	34	34	34	34

GDP= Gross Domestic Product
DE= Defense Expenditures
DT= Distortionary Tax
LT= Lump-sum Tax
LF= Working Population
TRD= Trade Openness

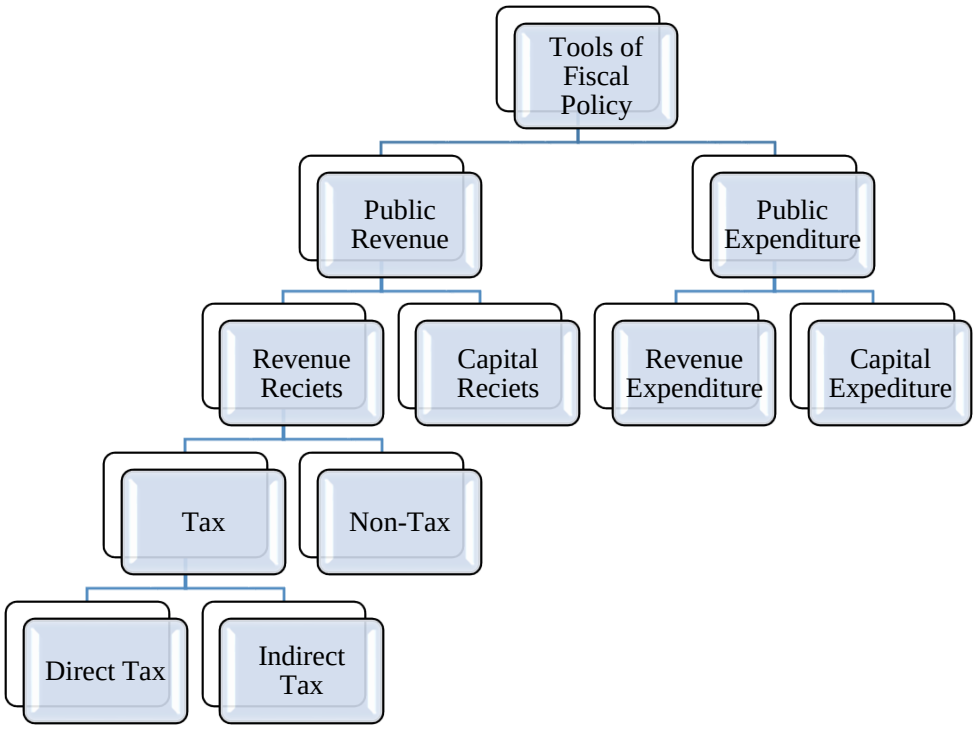

Figure 1.B Fiscal Policy