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The Impact of Fiscal Policy on Sustainable Economic Development in Pakistan

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Abstract

This study observes the effect of fiscal policy actions on Pakistan's economic dynamics. Using data for the variables GDP, Government spending, Budget deficit, Tax revenue and Unemployment from the World Development Indicator (WDI) and the Economic Survey of Pakistan (ESP) for the time span of 1990 to 2022, this research uses VECM and Johansen Cointegration methods for examination within a theoretical and empirical framework. The results reveal a long-term cointegration between GDP and fiscal indicators, particularly government expenses and tax revenues. Over the long-run, government spending and tax revenues show a significantly positive impact on Pakistan's GDP. Though, in the short-run, while government expenses show a positive effect, tax revenues show a negative impact on GDP. On the other hand, budget deficit and unemployment reveal a significant negative impact on Pakistan's GDP growth in the long-run. Though, in the short-run, budget deficit shows a developing positive impact on GDP.

Keyword: GDP, Government spending, Budget deficit, Tax revenue, Unemployment

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1. INTRODUCTION

Fiscal policy, including government expenditure, taxation, and budgetary measures, assists as a critical instrument for economic management and growth in countries across the world. In the context of Pakistan, the prudent design and effective implementation of fiscal policy have been recurrent concerns, given their significant implications for economic stability, growth, and social welfare. This study embarks on a thorough examination of fiscal policy and its implementation in Pakistan, aiming to shed light on its dynamics, challenges, and impacts on the country's economy.

Pakistan, as an emerging economy, has encountered complicated economic challenges, from insistent budget deficits to revenue generation constraints. The country has dealt with the task of framing and executing fiscal policies that effectively stimulate economic growth while addressing socio-economic inequalities. The government's fiscal measures, encompassing both expenditure and revenue policies, play a key role in shaping the country's economic path. Despite the significance of fiscal policy, Pakistan has faced continuing issues related to the effectiveness of policy implementation, the administration of budgetary deficits, tax collection inadequacies, and optimal allocation of resources. The country's fiscal policy has been damaged by persistent challenges, necessitating a thorough evaluation to identify underlying obstacles and opportunities for reform.

The primary objective of this research is to generally analyze the dynamics and impact of fiscal policy implementation in Pakistan. Assessing the effectiveness of government expenditure and revenue policies in stimulating economic growth and examining the challenges faced in budget management and deficit regulation are also among the specific objectives of the study. The study also reports the main research question marks that are the impact of government expenditure and taxation policies on economic growth in Pakistan and the primary challenges in managing budget deficits and revenue generation in the country.

Significance of the Study

This research holds dominant significance in offering understandings that can inform policymakers, economists, and investors involved in shaping Pakistan's fiscal policy. The results will contribute to a deeper understanding of the strengths, weaknesses, and opportunities existing within the present fiscal framework.

Research Gap

While several studies have observed features of fiscal policy in Pakistan, there remains a need for an updated and comprehensive study that synthesizes the complicated dimensions of fiscal policy implementation, addresses present-day challenges, and offers realistic recommendations for policy development.

2. LITERATURE REVIEW

Fiscal policy, an influential instrument in economic management, plays an important role in shaping the economic landscape of countries worldwide. In Pakistan’s case, the construction and execution of fiscal policies have been fundamental in addressing economic challenges and developing sustainable growth. This literature review aims to provide a comprehensive synthesis and critical analysis of academic works, empirical research, and policy analyses focused on fiscal policy within the framework of Pakistan. By digging into the details of fiscal policy design, implementation, and outcomes, this review pursues to shed light on the

effectiveness, challenges, and impacts of fiscal measures in Pakistan's economic framework. Abdon.et al. (2014) examined the link among fiscal policy and its potential impact on the economic situation in Asia. Their analysis of the economic landscape in the region highlighted a relatively limited level of government intervention, suggesting a need for increased government involvement to bolster the region's economic influence. The study underscored that tax on assets exert a more significant influence on economic progress in comparison to direct tax.

Ahmad and Sheikh (2011) led a study highlighting that Pakistan's contribution of taxes to its Gross Domestic Product (GDP) remains significantly low as compared to other developing economies. The study extensively inspected the tax reforms implemented over the past 2 decades. They assessed that Pakistan's tax system is categorized by qualities such as inelasticity, non-neutrality, complexity, and inefficiency. Efforts to restore the tax structure were started in the late 1970s, assisted by policymakers and international financial institutions. Despite these events, the study revealed that the objectives of increasing public revenue, improving the tax system, and raising public awareness about taxes were not accomplished. The study identified several reasons for these ineffective changes, assigning them to issues prevailing both at political and organizational levels.

Ahmad.et al. (2016) investigated the correlation among the total tax revenues collected by the government and the economic growth of Islamic Republic of Pakistan. They employed a time series dataset lapping from 1974 to 2010, analyzing both short and long-term trends. Their results indicated a negative association between the tax revenue and economic progress over extended periods. Specifically, they found that a 1% rise in total revenues led to a 1.25% cut in economic expansion. Ahmed (2011) explored the effect of government policies on Pakistan's economic progress using yearly time series data from 1982 to 2010. The study included an analysis of revenues and expenditures, categorizing revenues into tax and non-tax sources, including both federal and provincial government revenues. Expenses remained separated into developing and non-developing expenditures. The empirical conclusions revealed that non-taxes revenues positively impacted development both at state and local government levels. However, tax-revenue presented a substantial negative effect on economic growth, particularly at the federal government level. Moreover, expenditures assigned to developmental projects were found to enhance economic progress, although non-developing expenditures showed no visible impact on economic development.

According to Gerson (1998), fiscal policies impact economic growth through three primary channels. Firstly, policies focused on enhancing education and healthcare levels among the labor force contribute to skill development, thereby positively inducing labor productivity. Fiscal policies targeting the improvement of human capital and enhancing workers' productivity can produce favorable effects on the economy. The second channel operates by enhancing the efficiency of the present capital and reinvesting it in to new projects to boost physical capital. Investing in innovative skill, substructure, and research and development through fiscal policy can significantly boost economic growth prospects. Gerson further notes that fiscal policies encouraging open trade, facilitating the import of modern technology, have shown success. Lastly, the third set of policies can impact the stream of labor and the amount of capital through tax inducements or hindrances, thus affecting economic development. Turnovsky (2002) conducted an analysis of fiscal policy within an economy functioning at a non-scale growth level, considering both the public and private sectors. The study showed a significant impact of fiscal policies on growth, particularly during shift periods. It was suggested that in a planned economy, government investment might produce more favorable outcomes than government consumption.

Afonso et al. (2005) recognized numerous networks through which fiscal policy influences a state's economic development. The first recognized network is the magnitude of the communal sector, which can also hinder or enhance economic development. A large government sector with efficient institutions might accelerate economic growth. However, a large public sector joined with complex tax weights and incompetent government could hinder the efficacy of fiscal policy in increasing economic growth. The second channel revolves around the structure and efficiency of public expenditures. Development-oriented expenditures on infrastructure, education, and research and development, if performed efficiently, can significantly impact the success of fiscal policy. The third channel relates to the construction and competence of the income structure, surrounding tax improvements and the introduction of less misstating taxes. A well-structured revenue system is key for successful fiscal policy. The fourth channel emphasizes good fiscal governance as crucial for promoting economic progress through fiscal policy. Lastly, the fifth channel highlights the importance of a proper working of markets and the corporate environment. This could be enhanced by efficient and less misstating income and spending systems and by establishing strong fiscal organizations.

Romer & Romer (2007) conducted an analysis using narrative archives to evaluate the effect of tax policy on economic activities, aiming to examine the scale, control, and primary motivations behind major post-war tax policy actions. The study revealed that tax increases had a particularly contractionary effect. The results were healthy and significantly larger than the estimates obtained using broader procedures of taxation. Particularly, higher taxes on investment were observed to cause larger effects on GDP related to other types of taxes. The study concluded that reducing budget deficits through established tax increases sustained lower output costs compared to other forms of taxes. On the other hand, Babalol & Amin (2010) used cointegration techniques to analyze the relationship between fiscal plan and the economic growth of Nigeria. Their findings suggested a reassuring and long-term positive impact of productive expenditures on economic growth during the study period. They recommended increasing government expenditures in productive sectors such as education, healthcare, and economic infrastructure to boost economic progress.

Ali and Ahmad (2010) led research to investigate the possible effect of fiscal policy on the progress dynamics of Pakistan's economy. Their discoveries suggested that there is a positive relationship between economic development and budget deficit up to a certain threshold level. However, past this specific threshold, a persistent negative relation among budget deficit and economic progress was observed. These outcomes affiliated with theoretical expectations, indicating a positive relationship for a temporary period, while the relationship turned negative for longer durations. Buti and Gaspar (2015) highlighted the modern global economic conditions and emphasized the necessity aimed at a revised fiscal policy to tackle obstacles associated with worldwide economic development. They emphasized on the need for fiscal policy reform, particularly within the Euro area, to address the predominant issues in today's economies. The study suggested that restructuring automatic stabilizers of fiscal policy might be the most real approach to overcome country-specific developmental issues. However, they recognized the complexity of this task, noting that adjustments to tax and expenditure policies inside the economy could possibly conflict with the benefits now in place.

3. DATA AND METHODOLOGY

Data Sources

The empirical analysis in this study is done upon data sourced from two primary datasets: the World Development Indicator (WDI) published by the World Bank and the Economic Survey of Pakistan, which offers complete economic data and information on Pakistan's fiscal indicators, economic performance, and policy actions.

Time Series Analysis

The data collected is prepared as time series data, classically covering a prolonged period of years from 1990 to 2022 to detect trends and variations in fiscal indicators and economic performance.

Unit Root Test

It is vital to test the stationarity of the relevant variables before estimating the VEC model. To know whether the variables are stationary or non-stationary, a unit root test, such as the Augmented Dickey-Fuller (ADF) test, can be used. The ADF test looks for each variable's unit root, which denotes a non-stationary series. For Johansen Cointegration Test, all the specific variables used in the research needs to be stationary after 1^{st} difference.

Johansen Cointegration Test

The use of the Johansen cointegration test aims to know the magnitude and characteristics of the long-term relationship among the variables within our model. Also identified as the Unobstructed Cointegration test, it helps to identify the stable long-term steadiness. Basically, this method examines the long-term relation between cointegrated variable quantity or those variables initially identified as stationary after the first difference, I (1).

VECM Model Estimation

The Vector Error Correction Model (VECM) is conducted to investigate the short-term and long-term relationships among certain fiscal policy variables and economic indicators. This multivariate time-series model lets the estimation of how fluctuations in fiscal policy variables effect economic growth and other applicable economic outcomes.

Model Specification

$$\textbf{GDP Growth}_t = \beta 0 + \beta 1 GS_t + \beta 2 TR_t + \beta 3 BD_t + \beta 4 UE_t + \epsilon t$$

- GS_t, TR_t, BD_t and UE_t are values of government spending, tax revenues, budget deficits and unemployment rate, respectively. GDP Growth_t is the GDP growth rate of Pakistan used as the dependent variable in this research.
- $\beta 0$, $\beta 1$, $\beta 2$, $\beta 3$ and $\beta 4$ are coefficients to be estimated in the research.
- ϵt represents the error term.

4. RESULTS AND DISCUSSION

Unit Root Test

Variables	T-Statistic	Prob.*	Integration Order
GDP	-4.316783	0.0018	I(1)
GS	-5.299283	0.0001	I(1)
BD	-5.855593	0	I(1)
TR	-7.355174	0	I(1)
UE	-6.391019	0	I(1)

Above figure shows the Augmented-Dickey Fuller test to check the unit roots of all the variables under study. As mentioned in the table all the variables were non-stationary at level but stationary after first difference indicating that Johansen Cointegration test can be applied to these variables.

Johansen Cointegration Test

H0	H1	Trace-Statistic	Critical Value	Max-Eigen Statistic	Critical Value
r= 0	r≥1	141.8141*	69.81889	75.62015*	33.87687
	*shows 5% significance level				

Johansen cointegration test is applied to check the presence for any cointegrating equations in the model. As shown in the above graph the null hypothesis is that there are no cointegrating equations (r=0), while the alternate hypothesis is that there is at least one cointegrating equation present (r≥1). The trace statistic value (141.8) is greater than the critical value (69.8) so we reject the null hypothesis which means there exists a long-term cointegration between the variables. Similarly max-eigen statistic (75.6) is also greater than the critical value (33.8) at 5% level of significance indicating presence of at least one cointegrating equation

Vector Error Correction Model

Long-Run VEC

Cointeq eq	CointEq1
GDP(-1)	1
GS(-1)	1.38682
	-0.3411
	[4.06571]
BD(-1)	-1.476344
	-0.27334
	[5.40105]
TR(-1)	0.211942
	-0.2155
	[-0.98349]
UE(-1)	-0.483416
	-0.07203
	[-6.71177]
C	-7.067636

Above table shows the long-run cointegration among all the variables. Apart from tax revenue every other variable shows statistically significant impact on GDP. The coefficient of government spending and tax revenue exhibits a positive relationship with GDP progress rate of Pakistan which means a 1 unit increase in government spending and tax revenue will lead to a 1.4 unit and 0.2 unit increase in GDP, respectively which is coherent to the theory. In contrast, budget deficit and unemployment showed a negative long-term relationship with GDP stating that a 1unit increase in budget deficit and unemployment will lead to a reduction in Pakistan's GDP by 1.5 unit and 0.5 unit respectively.

Short-Run VEC

Error Correction	D(GDP)
CointEq1	-0.358
	-0.27481
	[-4.16020]
D(GS(-1))	1.331325
	-0.61218
	[2.17474]
D(BD(-1))	1.222255
	-0.37115
	[3.29313]
D(TR(-1))	-0.59944
	-0.4189
	[-1.43098]
D(UE(-1))	-0.71832
	-0.3599
	[-1.99589]

The above table shows the short-term estimates of VEC model. As shown in the table the error correction term is approximately (-0.4) which means that the GDP of Pakistan will adjust from short-term shocks towards the long-term equilibrium at the adjustment speed of almost 40%. All the variables are showing insignificant impact due to their low t-values. Here government spendings and budget deficit are exhibiting positive relationship while tax revenue and unemployment are giving negative relationship over short-run.

Breusch-Godfrey Serial Correlation LM test

Lags	LM-Stat	Prob.*
1	16.4255	0.9016
2	22.93829	0.5812
3	31.72562	0.1661

The above table shows the Breusch-Godfrey serial correlation test to check for autocorrelation among the variables. As probability value of all lags is greater than 0.05, we reject the null hypothesis which means there is no autocorrelation between the variables under observation.

Jarque Bera Normality Test

Variable	Jarque-Bera	df	Prob.
1	1.687899	2	0.43
2	0.740907	2	0.6904
3	0.082795	2	0.9594
4	0.596147	2	0.7422
5	1.482443	2	0.4765

Jarque Bera test is conducted to test for normality of the distribution in the series. As shown in the above graph all the values of probability are greater than 0.05 which concludes that the series is normally distributed.

5. CONCLUSION AND POLICY IMPLICATIONS

Conclusion

This research was conducted to analyze the implementation and impact of fiscal policy measures in Pakistan. The data used was taken from World Development Indicators (WDI) and Economic Survey of Pakistan (ESP) for the time span of 1990 to 2022. VECM and Johansen Cointegration were amongst the main techniques used for estimation of the desired results which were produced by theoretical and empirical framework.

The outcomes display that there exists a long-term cointegration among GDP and the fiscal indicators such as government spending and tax revenues. In long-term government spending and tax revenues showed a highly positive and statistically significant effect on Pakistan's GDP, although in the short-run government spending showed positive relationship but tax revenues gave away negative impact on GDP.

In contrast budget deficit and unemployment in the long-run showed a highly negative and insignificant impact on GDP growth of Pakistan, while in the short-run budget deficit started to give positive impact on GDP.

POLICY IMPLICATIONS

- Evaluate and adapt taxation and expenditure strategies to encourage economic stability and growth.
- Increase subsidy for education, healthcare, and infrastructure to improve economic development.
- Implement more actions to control inflation rates and to create more jobs for a stabler economy.
- Introduce modifications to improve market competitiveness and enable fair trade for economic growth.
- Foster an environment encouraging for technological advancements and innovation to drive economic productivity and progress.
- Uphold accountable fiscal practices, guarantee transparent governance, and build investors' confidence for sustained economic stability and growth.

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