PalArch's Journal of Archaeology of Egypt / Egyptology

FACTOR OUTPUT AND ECONOMIC GROWTH IN PAKISTAN: DOES FISCAL POLICY MATTERS?

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Abdul Basit, Gulnaz Hameed, Abdul Saboor, Muhammad Razzaq Athar. Factor Output And Economic Growth In Pakistan: Does Fiscal Policy Matters? -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 19(1), 433-443. ISSN 1567-214x

Keywords: Fiscal Policy, Economic Growth, Autoregressive Distributed Lag (Ardl), Pakistan

ABSTRACT

This study explores a new stream of research shedding light on the effectiveness of fiscal policy on economic growth in Pakistan by exploring the role of factor output. For empirical investigation the Autoregressive Distributed Lag (ARDL) model is applied and to check the stationarity behavior of all the variables Augmented Dickey-Fuller (ADF) unit root test is applied. Annual time series data from 1971 to 2018 is used to investigate the effect of government expenditures, gross fixed capital formation, indirect and direct taxes on gross domestic product (GDP). The empirical results of the study revealed that government expenditures, gross fixed capital formation, indirect and direct taxes have significant positive impact on economic growth in Pakistan. It is suggested that the expansionary fiscal policy is very effective to surge economic growth in Pakistan.

INTRODUCTION

For any country's extensive economic growth, suitable macroeconomic policy adoptions play a significant role in financial performance and stabilization. To

attain the goals of economic growth, fiscal policy makes an alignment to active use of the government budget (Amanja & Morrissey, 2005). The previous economic literature of fiscal policy is unclear regarding the growth and stability (Mahmood & Sial, 2018). Government involvement is essential for expansionary fiscal policy; however, on the other side, the intervention in administrative matters is not beneficial or helpful. Government expenditures and taxes are the fiscal policy instruments that may influence the country's economic growth (Agha & Khan, 2006). The economy can get-rid of recession by "increasing government spending and reducing taxes" but the reduction in government expenditures and increased taxes slow down the boom (Shihab, 2014).

Keynesianism is the fundamental phenomenon through which economic stability and development can be achieved and without fiscal policy instruments, financial stability can not be achieved in the long run. Government expenditure is the key instrumrnt to increase the economic growth of the country if it uses in a productive direction; furthermore, if government spending is used on unimportant economic sectors (which did not generate revenue), then it may cause to lead budget deficit in the economy (Toki & Fawwaz, 2015). Tax is an essential element imposed by the government on individuals who hold income and properties, it is a collection from the private sector by the public sector to attain economic and social goals. These goals in the form of consistency in the price level, enhancement of economic growth, reduction in unemployment, reduction in income inequality, up-grading of infant industries, and up-grading labour and capital development (Ojong et al., 2016).

From previous literature such as Kakar (2011), Ali and Ahmed (2010), Jawaid, et al. (2010), and Ahmad and Wajid (2013), it can be concluded that government expenditure is a main instrument to surge economic growth; however, Qayyum and Manzoor (2018) investigated that government revenue (Tax Collection) is the main instrument for the reduction of fiscal deficit and leads to long-run economic growth and stabilization in economic fluctuations.
The link between "government spending and economic expansion" has been inspected in several studies. By using different theories and approaches observed blended outcomes. Perooti (2002) found that government spending has a positive impact on economic growth. But taxes hurt output. Fiscal policy effects on the total and disaggregated levels applying choesky decomposition for shock detection focusing on Portugal was analyzed by Marvao Pereira & Roca-Sagales (2011), results were found to be consistent with Blanchard & Perottiti (2002). Several studies, such as Nursini (2017), Sakoric et al. (2015), Mutuku & Koech (2014), Chatziantoniou et al. (2013), and Jiranyakul & Brahmasrene (2007) claimed that fiscal policy positively linked with GDP. These outcomes support the validity of classical Keynesian theory.

Many economists were of the openion that fiscal authority should implement expansionary fiscal policy to tackle recessions because such type of policy action stimulate aggregate demand rapidly. According to Rafiq, Baum, Poplawski-Riberio, and Weber (2012), tight fiscal policy executed during recessions is deferential to GDP growth. Besides, Baldacci et al. (2009)

claimed that fiscal expansion in government consumption is additional useful to improve economic growth than increase in public investment or decreases in income tax, but that public investment has the most significant influence on the recovery of production after the collapse.

However, the Keynesian theory advocates a lower tax multiplier and a higher expense multiplier. The tax multipliers' impact was more significant than the spending scenario found by Mountford and Uhlig (2009). By comparison, Hasnul (2015) and Bukahari & Yousaf (2014) discovered a negative relationship between "government spending and real GDP due to the crowding-out effect". Ramayandi (2003) enforced their findings, arguing that a more considerable amount of government spending could encourage the government to raise extra taxes, imposing a burden on the productive sector. Besides, Perotti (1999) and Sutherland (1997) have been demonstrated that a significant debt-to-GDP ratio has a negative impact on real GDP. On the other side, Tang et al. (2013) depicted that government spending has an inverse relationship with real GDP in Asian countries. Empirical results of Noman and Kundri (2015), Cyruas and Elas (2014), Sial and Mehmood (2018), Adegorida (2018), Sen and Keya (2015), Quashigh et al. (2010), Musa et al. (2013) suggested that government spending poditivly connected with economic growth.

Furthermore, the inconclusiveness between existing literature in this study scrutinizes the behavioural impression of budgetary instruments on economic expansion through innovative aspects of Pakistan's context. The goal of this study is "to evaluate the effects of fiscal policy on economic growth in Pakistan". For the said purpose, the effect of budgetary policy is investigated through government expenditures, direct taxes, and indirect taxes on economic expansion. Further, this research will be focused on fiscal policy tools and highlights which budgetary policy tool is suitable for economic growth enhancement. To suggest a comprehensive policy guideline based on the research findings to enhance economic expansion and growth in Pakistan.

THEORITICAL FRAMEWORK AND RESEARCH METHODOLOGY

In this section of the study, we will discuss theoretical background, empirical framework, description of variables and data sources. Details are given as under;

Theoretical Framework

In 1776, Adam Smith claimed that no government could interfere, an optimal economy is an economy with an autonomous market structure, and regulatory market strecture would help meets its needs. He also claimed that resource automation could also be achieved through this autonomous market, which implies that the supply and demand decisions are based on products' output. There is no exact way, for the government to operate the market system. To efficiently distribute all goods and services, it concluded that production should be completed at the necessary level for the economy through the guidance of the markets secret hand. The hidden hand theory was that every person or person's job is naturally interested in the entire country's interests,

and the economy achieves efficiency and maximum social benefits. In 1817 David Ricardo defined comparative advantage and explained the services of an open economy. Says law (1803) gave the idea of the classical school of thought, which is "Supply creates its demand." This ensures that the business creates jobs and produces revenue by manufacturing goods and providing services.

Keynes and his fallowers supported were near related to expansionary or contractual fiscal policy. After the great depression of 1930, he gave general principles about employment, policy rate, and money in his book in 1936. An economic recession that impacted business activities, the great depression addressed many issues such as a reduction in demand and failure of the stock market, and many global economic changes, such as trade barriers and bringing an end to the gold standard. After these changes, Keynes said that the government could intervene and stabilize the economy by fixing prices, wages, and interest rates.

Empirical Frmaework

Based on the study objective, the following econometric equations are specified.

$GDP_t = f(FP_t)$ ……..……..(1)

Where as

$FP = FCE + GFCF + IND.TAX + D.TAX$…… (2)

So, equation one can be written as:

$GDP_t = f(FCE_t + GFCF_t + IND.TAX_t + D.TAX_t)$ ……(3)

Final econometric model is given as under:

$GDP_t = \alpha_0 + \alpha_1 FCE_t + \alpha_2 GFCF_t + \alpha_3 Ind.Tax_t + \alpha_4 D.Tax_t + \mu_t$ ……..(4)

Taking log of equation four:

$lnGDP_t = \alpha_0 + \alpha_1 lnFEC_t + \alpha_2 lnGFCF_t + \alpha_3 lnIND.TAX_t + \alpha_4 lnTAX_t + \mu_t$

α_0 denotes to intercept while$\alpha_1, \alpha_2, \alpha_3$ and α_4 are coefficients of independent variables whereas,

FP, FCE, GFCF, IND. Tax, D.Tax, μ, and t represent the fiscal policy, final consumption expenditures, gross fixed capital formation, indirect tax, direct tax, error term, and period.

In this study, “direct, indirect taxes, final consumption expenditure, and gross fixed capital formation” are used as proxies of fiscal policy variables in the proposed model (Sriyalatha & Torii, 2019).

Estimation Technique

In this study variables stationarity is tested via "Augmented Dickey-Fuller (ADF) unit root test". "Autoregressive Distributive Lag (ARDL) Model" of conditional free error correction approach is applied for long run cointegration association, which was developed by (Mahmood & Sial, 2018). ARDL estimation methodology is used to find long-run relationships among the variables. This technique includes "Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUMQ)" tests, which give parametric stability through these tests. For the achievement of long-run dynamics, Bound test was used. The Vector Autoregressive (VAR) model is adopted to find appropriate lag length before final analysis.

Descroption of Variable and Data Sources

Gross domestic products (GDP) is dependent variable while four independent variables i.e "government consumption expenditures, gross fixed capital formation, direct and indirect taxes" are are taken for this study to analyzee the effectiveness of fiscal policy on economic growth. Annual time series data from 1971 to 2018 was collected from World Development Indicators (WDI) and finance ministry of Pakistan, for the empirical analysi of the prposed proposed model.

RESULTS AND DISCUSSION

Time series empirical findings too much depend upon cointegration relationship. It is compulsory to check spurious regression problems before applying the estimation technique. ADF tells us the behaviour of variables before using ARDL. Empirical results of ADF are shown in table 1 tell us that dependent and independent variables are integrated at the level or first difference. So, the ARDL estimation technique will apply for final empirical findings.

Table 3.1: Estimated Results of Unit Root Test

Variables	**Level**	**1st difference**
GDP	-1.967554 0.6031	-5.577754 0.0002*
FCE	-3.044151 0.1371	-4.335952 0.0089*
GFCF	-2.359047 0.3952	-5.248077 0.0001*
Ind.Tax	-1.915613 0.3225	-6.937473 0.0000*
D.Tax	-4.978070 0.0011**	-8.250699 0.0000

*and ** represents the stationary of given variables at the level and first difference correspondingly.
Source: Author's calculations.

After detecting the static variables, optimal lag selection criteria are essential for ARDL analysis. Usually, Schwarz Criteria (SC) used as compared to the Akaike Information Criterion (AIC) because SBC is more consistent than AIC. Five lags are chosen based on AIC and Hannan- Quinn Criterion (HQC) for final analysis. The given results are shown given below in table 3.2.

Table 3.2: Optimum lag selection criteria

Lag	LagL	LR	FPE	AIC	SC	HQ
0	145.7517	NA	1.37e-11	-10.82705	-10.58511	-10.75738
1	262.7390	179.9805	1.20e-14	-17.90300	-16.45135	-17.48497
2	293.3320	35.29963	9.97e-15	-18.33323	-15.67187	-17.56685
3	330.4107	28.52210	8.24e-15	-19.26236	-15.39130	-18.14763
4	450.0046	45.99767*	4.68e-17*	-26.53882	-21.45804	-25.07574
5	2558.522	0.000000	NA	-186.8094*	-180.5189*	-184.9980*

*represents optimal lag length for ARDL Bound test.
Source: Author's calculations.

Table 3.3 expresses estimated results of the Autoregressive Distributed Lagged (ARDL) Bound test. When the F-statistic value is larger than the upper bound of F-Calculated, then the null hypothesis is rejected. In this study, the F-Statistic's estimated value is more significant than F-Calculated at 10%, 5%, and 2.5%, except for a 1% level of significance. So, the null hypothesis "Fiscal policy has no impact on economic development" is rejected in this empirical research. The alternative hypothesis "Fiscal stratgey has no ipressiont on economic development" is accepted. Although, the empirical results also show a long-run Co-integration link exists between variables.

Table 3.3: Empirical Results of ARDL Bound Test

H_0: Long-Run Relationship Occurs		
t-Stat.	Value	K
F-Stat.	4.637179	4
Critical Value of Bound		
Significance	I0 Bound	I1 Bound
10%	2.455	3.523
5%	2.869	4.010
2.5%	3.25	4.49
1%	3.74	5.06

Source: Author's calculations.

Impact of Fiscal Variables on "Economic Growth in the Long Run"

Table 3.4 tells us gross fixed capital formation positively impacts economic growth at 5% level of significance. The coefficient value of gross limited capital formation is 0.088, shows 1% increase in capital stock will lead to 8.85% enhancement in economic growth and estimated results similar to findings of Amal & Siham (2017), Idris & Bakar (2017), and Sriyalatha et al. (2019). Final consumption expenditures have direct and significant influence on "economic growth" at a 5% significance level. The coefficient value of final consumption expenditures is 0.164164 shows a 1% increase in final consumption expenditures will show a 16.4164 enhancement in economic growth. Estimated results are similar to findings of Noman & Kundri (2015), Adegoriola (2018), Musa et al. (2013), Jelilov and Musa (2016), Mahmood & Sial (2018), and Sriyalatha & Torri (2019).

Although, empirical findings of direct and indirect taxes positively and significantly influence economic growth. According to empirical results, indirect taxes positively and impact subtantially economic growth at 1% significance level. The coefficient value of indirect taxes is 0.061776 shows, 1% increase in indirect taxes will lead to 6.1776 increase in economic growth. Previous studies of Amal & Siham (2017), Stoliva & Patonov (2020), and Ugwuanyi et al. (2017) also support my results. Direct taxes also have a "positive and significant effect on economic growth" at a 1% significance level. The coefficient value of direct taxes is 0.249393 shows if a 1% surge in direct taxes will lead to a 24.9393 increase in "economic growth". Munir et al. (2019), Ugwuanyi et al. (2017), Noman & Kundri (2015), and Rosoiu (2015).

Table 3.4: Long run ARDL analysis

Long Run Coefficient	
Variables	Coefficient
GFCF	0.088560 (0.0444) **
FCE	0.164164 (0.0410) **
Ind.Tax	0.061776 (0.0089) *
D.Tax	0.249393 (0.0001) *

*, **and*** values show "significance at 1%, 5% and 10% level respectively". Explanatory variables in logarithmic form because data of given variables are not available in the same unit.
Source: "Author's calculations".

Empirical ECM findings (-1) were assessed through "the cumulative sum of recursive residuals CUSUM and CUSUM square". These tests also assess parametric reliability or uniformity. Empirical results, which are calculated through these diagnostic tests, show no Heteroskedasticity and Serial correlation in this data set. Empirical calculation of the CUSUM test shows a

long-run link between variables, and calculated coefficients also offer structure stability over the long run. Graph of CUSUM and CUSUM square.

Table 3.5: Diagnostic Test Results

Diagnostic Test	**F-Statistic**
Hetoroskedastiaty	0.692587 (0.6940)
Serial Correlation	0.519924 (0.6028)

Source: Author's calculations.

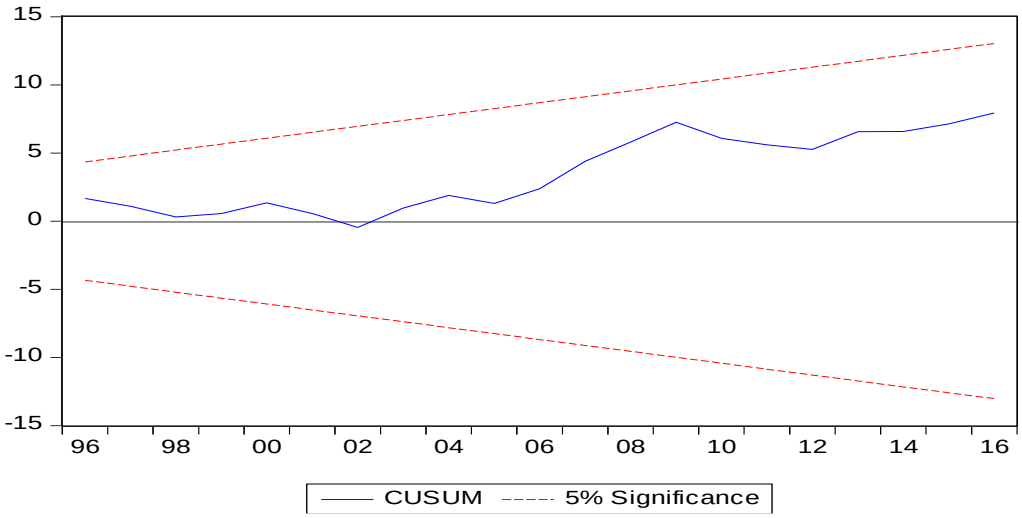

Figure 3.1: "The model is stable because CUSUM does not cross the linear limits, then it is believed that the regression equation is stable".

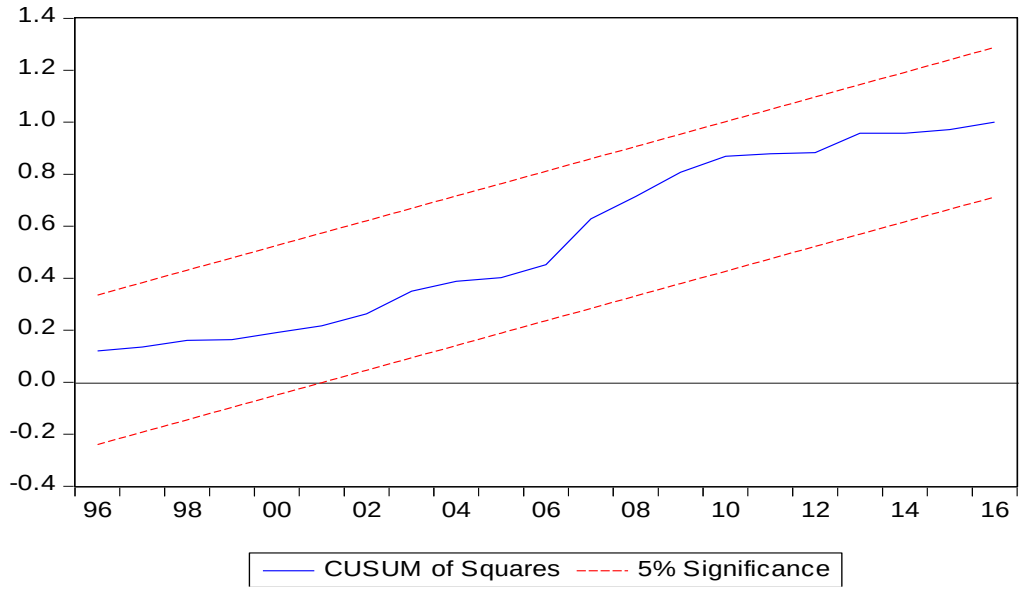

Figure 3.2: "The model is stable because CUSUMSQ does not cross the linear limits, then it is believed that the regression equation is stable".

CONCLUSION

The key objective of this empirical research was to analyze the fundamental role of fiscal strategy on economic growth. Based on the empirical findings, this study concluded that "fiscal policy and its tools have a positive and significant impact on economic growth in Pakistan". The results indicated that "government expenditure is the key fiscal policy tool for economic growth" which support Keynasian school of thought. This study also concluded that direct and indirect taxes have significant and positive synergy with economic growth. The reason for positive influence of taxation on economic growth is that taxtion enhances government revenue and reduces budget deficit.The study results further confirmed that "Capital stock plays positive and significant influence on economic growth". Increase in capital stock improves economic growth in the long run.

Policy Recommendations

The study suggested following policy recommndations for policy makers to stimulate economic growth in future;

- Government should focus on capital investment which is positively related to economic growth.
- Tax collection and tax strecture mechanism should be easy and understandable for every individual. Both progressive and regressive tax strecture should be comprehensive.
- Goverment should emphasis on productive expenditure for the long run economic growth.
- To achieve economic stabilization, Pakistan's government should aim to minimize expenditure on leisure, cultural and religious affairs, and other functions such as politico-administrative expenditures.

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