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Dynamism in Economic Policies to Achieve Economic Stability: Evidence from Pakistan

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Abstract

Economic policies always play a crucial role to achieve the country's economic stability through the mutual integration of fiscal and monetary policies. This study is one of the initiatives to analyze the dynamism of economic policies to achieve Pakistan's economic growth while controlling public taxes, government expenditures, broad money supply, inflation, and unemployment during a period of 1980-2017. The study employed the ARDL –Bounds testing approach in order to obtain the short- and long-run elasticities under the cointegrated framework. The results show that in the short-run, tax rate largely supported the country's economic growth, while this result is disappeared in the long-run, where high tax rate substantially decreases economic growth. The result concluded that contractionary fiscal policy is undesirable in the long-run due to large tax evasion, which negatively impacts on the country's economic growth. The results further reveal that money supply has a positive and significant impact on country's economic growth both in the short and long-run, which implies that expansionary monetary policy stimulates economic growth via the channel of domestic and foreign investment in a country. The study also suggests that state should focus on fiscal measures while monetary measures can be effective in long-term.

Keywords: Monetary policy, Fiscal policy, Money supply, ARDL-Bounds testing approach, Pakistan.
JEL Classification: C22; E63.

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Ethical: This study follows all ethical practices during writing.

Contents

1. Introduction

Today in third world economies, continuous development and sustainable growth are the major growth challenges. Adam (1992) argued that policymakers should need to redefine economic policies in order to attain price stability in a country. There are two major macroeconomic strategies that act as a wheel for the growing economy, i.e., fiscal and monetary policy. Both the policies worked under different economic tools, including public spending and revenues (for fiscal policy) and money supply and credit creation (for monetary policy). Monetarists believe that monetary policy imposes the more significant effect on economic stability, while on the contrary side, Keynesian were on the favor of a fiscal policy to stabilize price level in the country(Asogu, 1998).

Economic growth and price level both are an interdependent factor that acts simultaneously to work for better health and wealth of the country. Country's GDP shows the total production of a country in a given year, while unemployment is a state of the economic deprivation that an eligible person would like to work and search for it but hardly finds none (Zaman *et al.*, 2011). Money supply is based upon central bank decision where the central bank imposes a number of policies on commercial banks to restrict excess money supply and credit in a country. Fiscal policy on the other side, worked on public revenues and public expenditures to stabilize price level that simultaneously increase physical assets, like building infrastructure, health & education sector, communication and technology, transportation, etc., which bring economic activity in the economy (Padda and Akram, 2009; Ogar *et al.*, 2014). According to GoP (2017) report, the growth rate of Pakistan seems to be declined from the year 1980 to 1990 (6.8% falls to 4 %) but it takes a flight of 4.3% in the year 2017. Money supply has been increased up to 48.2 % in 2017. Unemployment and inflation rate rises due to the effects of rigid economic policies of a country.

On the basis of significant discussion, the study analyzes the dynamism in economic policies towards economic stability for Pakistan economy by controlling the number of macroeconomic factors, which is imperative for sustained growth. The more specific objectives are as follows:

i) To analyze the impact of public expenditures and government taxes on the country's economic growth (Keynesian view).
ii) To examine the role of money supply in the country's economic development (Monetarist view), and
iii) To what extent changes in price level and unemployment rate affect the country's economic growth.

These objectives required extensive empirical exercise to obtain policy remarks.

2. Literature Review

The number of the previous literature finds the relationship between economic growth and country's economic policies to stabilize macroeconomic issues, including, Adefeso and Mobolaji (2010) observed fiscal-monetary policy and its impact on the Nigerian economy. The sample data was collected from 1970 to 2007. The results show that monetary policy is more effective in the economic stability of Nigeria as compared to the fiscal policy. Khosravi and Karimi (2010) examined economic growth in Iran for the time span of (1960-2006). Bounds testing and co-integration confirm the relationship between macroeconomic policies and economic growth in a given country for long-term economic stability. Bhuiyan (2008) investigated the impact of monetary shocks in Canada from 1994-2007. The results of the study indicated that money supply played effective role in the economy by changing the interest rate policy. Nouri and Samimi (2011) studied the impact of monetary factors on the economy of Iran, during the time period of 1974- 2008. The study found a positive association between economic growth and monetary policy. Havi and Enu (2014) investigated the impact of macroeconomic strategies on the economic growth of Ghana. The study found that monetary policy is more effective in the stability of Ghana's economy that largely delimits excessive money supply in a country. Benos (2009) studied the impact of fiscal policy on the economic stability of 14 EU countries. The results of the study reveal that government spending has a positive connection with the country's economic growth via the imposition of expansionary fiscal policy across countries.

Tesfay (2010) evaluated the impact of macroeconomic strategies on Ethiopian economic growth, to find out their strength in deviating economy. The results of the study concluded that money supply and government spending both found to be insignificant that need to careful economic decisions for applying appropriate economic policies for broad-based growth. Chowdhury and Afzal (2015) examined the impact of financial policies on the economic stability of Bangladesh. The cointegration tests revealed that economic policies largely promote country's economic growth. Ogunmuyiwa and Ekone (2010) studied Nigerian economy and found that expansionary monetary policy is more effective to promote country's economic growth. Douanla (2014) studied panel data on fourteen countries and analyzed that money supply is positive and inflation is negatively affecting the economic growth across countries. Mohammad *et al.* (2009) studied the Pakistan's economy and found that monetary policy has a positive connection to stabilize price level in a country. Jawaid *et al.* (2010) predicted the financial policies for Pakistan economy and shows that there has been a positive behavior of financial policies in the growth of Pakistan's economy. The study recommends that monetary policy needs to be revised, in order to lead Pakistan's economy on the path of sustainable growth. Enache (2009) analyzed the fiscal policy contribution in the economic growth of Romania, during the time period of 1992 – 2013. The study provides no evidence of fiscal policy intervention to boost country's economic growth, which need re-define economic policies to stimulate economic drivers for broad-based growth. Another study were conducted by Mutuku and Koech (2014) study used impulse response function to fund out the impact of macroeconomic policies. The conclusion revealed that fiscal policy is contributing more in the output of Kenya, as compared to monetary policy. Ihsan and Anjum (2013) considered a case study of Pakistan and evaluated inflation-interest-GDP nexus by using a time series data from 2000 to 2011 and found that CPI and Interest rate move along with the country's GDP while inflation bear no impression on GDP. Hussain and Siddiqi (2012) found the interrelationship between macroeconomic policies and Pakistan's economic growth and confirmed that macroeconomic policies largely support country's economic development through monetary and fiscal instrumentations.

The current studies largely worked on different areas by applying monetary and fiscal policy instruments across different economic settings, i.e., banking crisis see, Dosi *et al.* (2015) total factor productivity and financial crisis (see, Darovskii (2017)) great inflation and agent's belief see, Bianchi and Ilut (2017) stagflation and sustainable economic growth (see, Darovskii (2017)) investment and aggregate demand (see, Bar-Yam *et al.* (2017))

rate of interest and resource constraints (see, Lee and Werner (2018)) etc. These studies largely confined the importance of monetary and fiscal policy instruments to balance such economic affairs for long-term growth.

3. Data Variables and Methodology

3.1. Data

In this study, the data was collected from the World Development Indicators published by World Bank (2017). GDP is taken as a dependent variable, while others serve as independent factors. The data is presented in Table 1 for ready reference.

Table-1. Data Description

Variables	Measurement	Time Period	Data Type	Data Source
GDP	Annual %	1980-2017	Time Series	WB (2017)
Unemployment	Annual %	1980-2017	Time Series	WB (2017)
Inflation	Annual %	1980-2017	Time Series	WB (2017)
Government expenditures	% of GDP	1980-2017	Time Series	WB (2017)
Money supply	% of GDP	1980-2017	Time Series	WB (2017)
Taxes	% of GDP	1980-2017	Time Series	WB (2017)

Source: WB (2017).

3.2. Methodology

3.2.1. Econometric from of Model

$$GDP_t = \beta 0 + \beta 1UN_t + \beta 2Inf_t + \beta 3GE_t + \beta 4M2_t + \beta 5T_t + \varepsilon \ldots\ldots (1)$$

Where,

GDP = Gross Domestic Product
UN = Unemployment rate
Inf = Consumer price index, inflation
GE = Government Expenditures
M2 = Broad Money Supply
T = Tax Rate
t = Time period
β0 = Intercept
β1, β2, β3, β4, β5 = Regression coefficients
ε = Stochastic error term

We found an appropriate econometric technique after checking the stationarity of the variables.

3.2. Empirical Procedures

To further proceed, first, we are going to find out the unit root of all the variables by using the ADF test. This test determines which empirical technique is applicable. The mix order of integration among the variables gives good justification to used ARDL-Bounds testing approach to obtain short- and long-run parameter estimates.

3.2.1. Autoregressive Distributed Lag (ARDL)Model –Bounds Testing Approach

ARDL method gives robust parameter estimates both in the short- and long-run through the present value of regressand based on the present value of regressors and its lag values. ARDL is the standard least squares regression technique that includes *lag* of both the dependent variable (Y) and explanatory variables (X) as regressors.

The study results confirmed that the dependent variable has an order of integration is one, while inflation and government expenditures are stationary at the level, thus it shows zero order of integration. The rest of the variables, including broad money supply, unemployment rate, and tax rate exhibit differenced stationary series, having an order of integration is I(1). Hence, ARDL technique accommodates a mixture of the order of integration in econometric testing to gives robust inferences.

ARDL general model is given below

$$\Delta Yt = \beta 0 + \sum_{i=1}^{n} \beta_i \Delta y_{t-1} + \sum_{i=0}^{n} \delta_i \Delta x_{t-i} + \emptyset_1 y_{t-1} + \emptyset_2 x_{t-1} + \mu_t$$

4. Empirical Results

Table 2 shows descriptive statistics for ready reference.

Table-2. Descriptive Statistics

Variables	Minimum	Maximum	Mean	Standard Deviation
GDP	1.014	10.215	4.892	2.096
Unemployment	0.600	8.300	4.444	2.014
Inflation	2.539	20.286	8.155	3.894
Government Expenditures	-10.213	48.323	6.173	10.253
Broad Money Supply	38.594	58.867	46.499	5.937
Taxes	2.420	1.600	6.220	3.310

Source: WB (2017)

Table 2 shows that the mean value of GDP is about 4.892%, followed by unemployment rate is 4.444% and the inflation rate is about 8.155%. The maximum value of government spending, broad money supply, and the tax rate is about 20.286% of GDP, 48.323% of GDP, and 58.867% of GDP respectively. The average value is 6.173% of

GDP for government expenditures, 46.499% of GDP for broad money supply, and 6.220% of GDP for the tax rate. Table 3 shows the estimates of the correlation matrix for ready reference.

Table-3. Correlation Matrix

Correlation	GDP	Government Expenditures	Inflation	Money Supply (M2)	Taxes	Unemployment
GDP	1					
Government Expenditures	0.184	1				
Inflation	-0.184	-0.220	1			
Money Supply	-0.247	0.136	0.092	1		
Taxes	-0.152	0.072	-0.192	0.761	1	
Unemployment	-0.026	0.009	-0.226	-0.101	-0.135	1

Source: Author's estimation.

Table-4. Unit Root Results

Variables	At Level	1st Difference	Decision
GDP	-1.285 (0.178)	-2.473** (0.015)[c]	I(1)
Unemployment	-1.981 (0.293)	-7.326* (0.000)[a]	I(1)
Inflation	-4.041* (0.004)[a]	-7.334* (0.000)[b]	I(0)
Government Expenditures	-6.586* (0.000)[b]	-6.891* (0.000)[b]	I(0)
Money Supply	-1.634 (0.455)	-4.319* 0.002[a]	1(1)
Taxes	-0.916 (0.943)	-6.972* 0.0000[a]	1(1)

Note: *1% level of significance, ** 5% level of significance, [a,b,c]shows intercept, trend & intercept, none respectively.

The correlation results show that government spending has a positive correlation with the country's economic growth, while inflation, money supply, taxes, and unemployment rate largely decreases the country's economic growth. The result implies that higher public spending substantially improves the country's economic programmes, which is imperative for sustained growth. The high inflation rate and contractionary monetary and fiscal policy in the form of high tax imposition and high-interest rate both influenced foreign investors and domestic consumers in order to withdraw production and consumption. The unemployment rate has a negative correlation with the country's GDP, which implies that high unemployment rate largely influenced economic growth, which needs growth-oriented strategies to provide employment opportunities in a country. Table 4 shows the unit root estimates.

The results confirmed that GDP, unemployment rate, broad money supply, and tax rate are differenced stationary variables and having an order of integration is one, i.e., I(1) variable, while the remaining variables, including inflation rate and government expenditures, exhibit a level stationary variables, hence its order of integration is zero, i.e., I(0) variables. Thus, ARDL technique is good justification for empirical illustration on the above model for reliable estimates. Table 5 shows the ARDL-Bounds testing results for establishing the long-run relationship between the variables.

Table-5. ARDL Bounds Test

F-Statistics	**3.730**	
Critical values bounds		
Significance Level	I(0)Lower Bounds	I(1)Upper Bounds
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Source: Author's estimation.

Table 5 demonstrating results of F-statistics, if F-statistics value more than the critical value of upper bounds, it shows the long-run relationship exists among the projected variables. The results show that F-statistic value is 3.730 that fall to upper bounds at 10% level of significance; hence it confirmed the cointegration exists between the variables. Table 6 shows the long-run elasticity estimates of ARDL model for ready reference.

Table-6. Long-Run Coefficients of ARDL (1,2,0,0,3,3) Model

Dependent Variable: Ln (GDP)

Regressors	Coefficient	Std.Error	Prob.
Constant	16.153*	5.614	0.009
Ln(GC)	0.082	0.137	0.554
Ln(INF)	-0.104	0.161	0.527
Ln(MS)	2.704**	1.051	0.018
Ln(TAX)	-1.128*	0.358	0.005
Ln(UNE)	0.037	0.159	0.818

Note: * indicates 1% and ** indicates 5% significance level.

The results show that broad money supply and country's GDP both are moving in the same direction and having a positive relationship between them with an elasticity estimate of 2.704%, $p<0.050$. It implies that if 1%

increases in the money supply there would be an increase of 2.704 % in GDP. The results are in favor of the expansionary monetary policy in order to gear economic growth over a long period of time. The impact of the tax rate on economic growth is negative with an estimated elasticity value of -1.128%. The result implies that higher imposition of tax rate lead to decrease economic growth many times, thus it is favorable to apply the expansionary fiscal policy in order to generate sufficient tax resource base in a country. Taxes impose an inverse effect on GDP, as the taxes increased people tend to save more, this is affecting the production sector and also the investment. The following studies are linked with the study's results, i.e., Anastassiou and Dritsaki (2005); Padovano and Galli (2001); Poulson and Kaplan (2008) etc. These studies largely supported the country's economic policies for long-term sustained growth. Table 7 presented the short-run results of ARDL-Bunds testing approach.

Table-7. Short-Run Results of ARDL (1, 2, 0, 0, 3, 3) Model

Dependent Variable ΔLn(GDP)

Variables	Coefficient	Std. Error	Prob.
ΔLn(GC(-1))	-0.129***	0.067	0.070
ΔLn(INF)	-0.106	0.159	0.511
ΔLn(MS)	2.766**	1.162	0.027
ΔLn(TAX)	1.664*	0.458	0.0017
ΔLn(UNE(-1))	0.454**	0.203	0.037
ΔLn(UNE(-2))	-0.228	0.187	0.237
ECM(-1)	-1.022*	0.210	0.0001

Note: R^2= 0.650,Adj.R^2 = 0.405. *shows 1%, ** shows 5%, and *** shows 10% level of significance.

The short-run results show that money supply has a positive impact on the country's economic growth, which further supported the long-run positive impact of money supply on economic growth. The tax rate has a positive impact on the country's GDP, however, this result is disappeared in the long-run. There is a direct association between the unemployment rate and economic growth, which shows the structural flaws of the labor market that need to e corrected by long-term economic policies. The error correction term shows how model come to equilibrium after an economic shock. In the short-run,1st lag of government expenditures is the significant but negative impact on GDP, which quite visible that government need to re-correct economic policies to spend income on such productive expenditures that would yield a positive return.

Stability tests are used to check how the model is stable, at 0.05 % level of significance. If the estimated line lies between two dotted lines then the model is considered stable, Bahmani-Oskooee and Ng (2002). From the figures, it can be shown that the plots of CUSUM values fall within the critical boundaries.

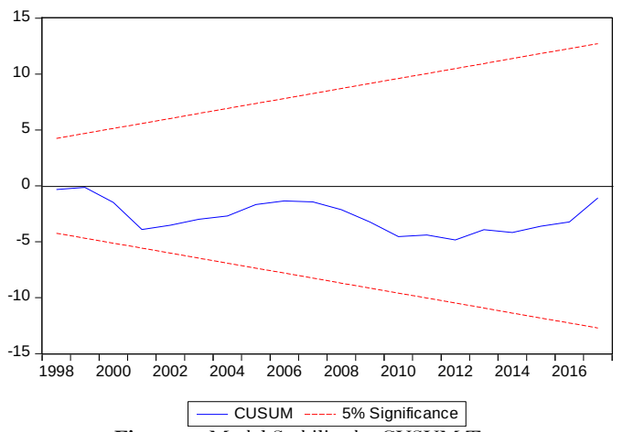

Figure-1. Model Stability by CUSUM Test

Source: Author's estimation.

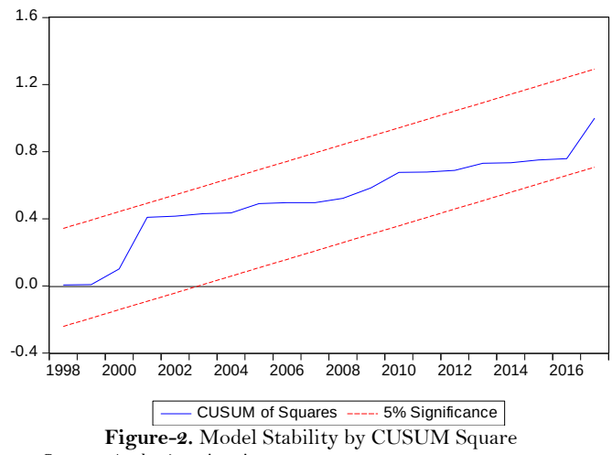

Figure-2. Model Stability by CUSUM Square

Source: Author's estimation.

The study concludes that taxes, money supply (M2) and government expenditures are significant policy factors that affect Pakistan's economic growth. It is a prime responsibility of the government to re-correct taxation policy in order to generate sufficient revenues through fiscal instruments to increase the number of taxpayers and efficient collection of income tax.

5. Conclusions

The objective of the study is to analyze the Keynesian and Monetarist viewpoint of economic policies to stabilize the price level and stimulate the country's economic growth. The study considers a case study of Pakistan to evaluate fiscal and monetary policy instruments on Pakistan's economic growth by using an annual time series data from 1980 to 2017. The results confirmed that in the short-run, money supply, and tax rate both supports country's economic growth while government expenditures decrease economic growth and unemployment rate increases, which represent the structural flaws in the labor market in the form of wage rigidity and labor demand issues. In the long-run, the majority of the short-run results have disappeared, i.e., that money supply increases while high tax rate decreases economic growth, which supported the Monetarist viewpoint, where expansionary monetary policy supports to country's economic growth.

On the basis of results, the following policies recommend for Pakistan's sustained growth, i.e., i) Government should increase spending on education and health and reduce the tax burden to stimulate aggregate demand.
ii) The state should expand its spending in order to create job opportunities.
iii) Political instability also plays a vital role in promoting unemployment, hence it is imperative to stabilize our institutions to work for the country's betterment and generate job opportunities in the economy.
iv) Education and healthcare system needs more deliberate action plans to promote social activities in a country, and
v) Expansionary monetary and fiscal policy is desirable to stabilize the price level in a country.

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