GDP AND ECONOMIC GROWTH: A CASE STUDY FROM PAKISTAN MACROECONOMIC VARIABLES

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Original Article

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Abstract

This study empirically explores the relationship between the inflation rate, the unemployment rate, exports, gross domestic product and the current account balance with gross domestic product. The study covered the period from 2001 to 2017. From the analysis, it is concluded that there is no stationarity and normality in the data. The OLS indicates a negative relationship between the current account balance, the inflation rate and exports. However, the inflation rate, exports and external debt have a positive relationship with gross domestic product.

Keywords: Gross Domestic Product; Inflation Rate; Export; External Debt; Current Account Balance

1. Introduction

In recent years, Pakistan's economy has attracted global attention. Policymakers find it difficult to formulate policies for such developing countries. Economic instability leads to inflation, unemployment, and external debt increasing daily. Inflation, foreign debt, and a low level of human and capital wealth result from the instability and downward trend of economic growth (Iqbal & Zahid, 1998). Countries in development slow economic growth and lower living standards. Sustainable economic growth is the most effective key to resolving the standard of living and economic growth (AJMAIR, GILAL, FAROOQ, & HUSSAIN, 2018). Corporate spectacles in developing countries are characterized by low average incomes for their citizens. They will borrow money from an external source to increase their standard of living. There is a lot of gray in Pakistan's future and present (Ali & Mustafa, 2012). According to the authors, if domestic demand for cross-border commodities increases while domestic demand decreases, the situation adversely affects the trade balance. First, and lastly, economic growth. To resolve this problem, daily wages should be increased (Jebran, Iqbal, Rao, & Ali, 2018).

The purpose of this study is to identify the relationship between inflation, unemployment, current account deficits, external debt, and exports with GDP. A country's GDP shows the economic position of the final goods produced within its borders. The GDP per capita of Pakistan decreases day by day.

2. Literature Review

During the period 1976-2014, Ajmmair et al (2018) identified factors related to economic growth. According to the authors, gross fixed capital formation and remittances are positively related to growth in the economy. Pakistan's economy is characterized by a number of key financial factors. Economic growth is negatively affected by external debt and budget deficits (Iqbal & Zahid, 1998).

Dey and Tareque, (2020) studied the impact of external debt on Bangladesh. The study covered the period from 1980 to 2013. A positive and significant relationship was found between MEP and external debt based on the analysis of the collected data. Inflation, unemployment, and interest rates are tied to dividend payout ratios. The study covered the period from 2001 to 2019. The authors concluded that interest rates and concurrent accounts have a positive relationship, and inflation, unemployment, and dividend payout ratios have a negative relationship (Khan, Ullah, Ahmed, & Naz, 2021).

A macroeconomic analysis of Pakistan's growth was conducted by Khan *et al*, (2021). According to the authors, military expenditures and education are the most significant contributors to GDP. CPI, TOT, and ESD should be negatively correlated with GDP. With a dividend payout ratio, the authors empirically investigate inflation, interest rates, exchange rates, unemployment and GDP. The study covered the period from 2001 to 2017. According to data analysis, the exchange rate and unemployment have a positive relationship. A negative relationship exists between the interest rate, inflation rate, exchange rate, GDP and dividend payout ratio (Khan, Ullah, Ali, & Khan, 2018).

Kharusi and Ada, (2018)studied the government's perpetual borrowing and economic growth. For that purpose, the authors used time series data from 1990 to 2015. World Bank and Central Bank of Oman data were collected by scholars. After analyzing the data, the authors concluded that external debt is negatively correlated with fixed capital and government borrowing is positively correlated with fixed capital. The researchers studied the impact of macroeconomic variables on the dividend payout ratio. In addition, time series data covering the period 2001–2015 were used in the study. For the analysis of the data, the OLS method is used. Using the data, it is concluded that inflation rates are negatively correlated with dividend payout ratios, interest rates are positively correlated with dividend payout ratios, and exchange rates are positively correlated with dividend payout ratios (Arif Ullah; Naveed Anjum; Muhammad Asif Ali, March, 2018).

Borenszterin, (1990) investigates the effect of foreign debt on investment in a heavily indebted country. They concluded that there is a lack of encouragement to invest in debt-ridden countries based on the data. Also, macroeconomic variables were examined for their impact on financial performance. For this purpose, the author selected the automobile sector listed on the Pakistan Stock Exchange. The study covered the period from 2007 to 2016. According to the analysis of the data, ROA and GPM have negative relationships, and ROE, inflation rate, and interest rate have positive relationships (Haider, Anjum, Sufyan, Khan, & Ullah, 2018).

3. Data and Methodology

This study aims to find the relationship between inflation, unemployment, current account balance, external debt, and exports with GDP. Pakistan's central bank and the World Bank provided data for that purpose. Based on time series data, the study covered 2001-2021. For that, the Ordinary least square method of the multiple regression method is applied. Several preliminary tests are conducted before applying the multiple regression test. A modified Dickey-Fuller test verifies the stationarity of the data. CUSUM is used to check the stability of the model and the normality of the model with Jerque Berra Statistics.

4. Regression Equation

Inflation, unemployment, current account balance, external debt, exports, and GDP are the main objectives of the research. According to that study, the regression equation is as follows.

$$GDP = \alpha_t + \beta_1 INF_t + \beta_2 UN_t + \beta_3 EXR_t + \beta_4 CA_t + \beta_5 ED_t + \varepsilon_t$$

Whereas

t = Times Series
GDP = Gross Domestic Product
INF = Annual Inflation rate
UN = Unemployment rate
EXR = Annual Exchange rate of a currency
CA = Current Account Balance
ED = Eternal Debt
ε_t = Error term

5. Empirical Evidence

Before applying the ordinary least square, some preliminary tests should be performed. The stationarity of the data should be checked through the ADF and the result shows no stationarity in the data. The stability of the data is checked through CUSUM and the result is shown in table 1. The results reveal that the model is stable. The results also show that the area in the extreme red line and the model are stable.

Table 1: CUSUM Model Stability Test

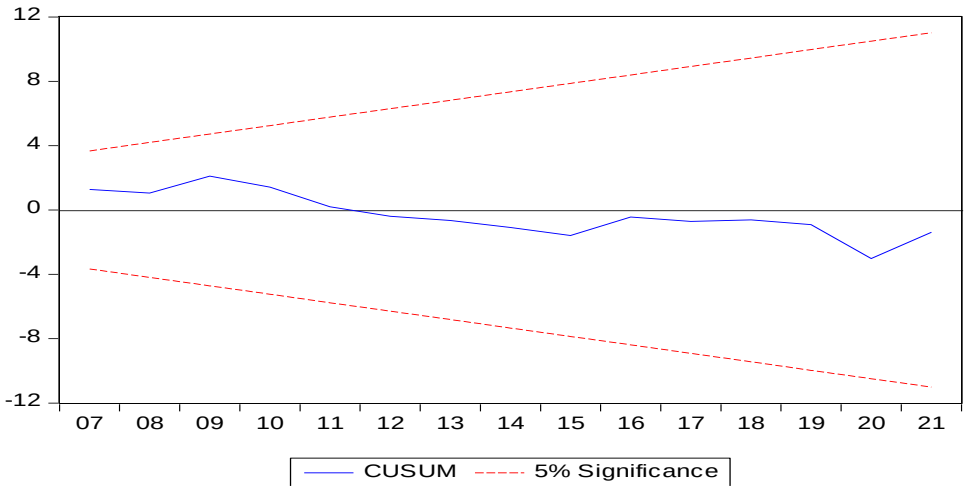

Table 2 Spectacular is the multiple regression model. The coefficient of the current account balance has a negative relationship with GDP and is statistically significant. According to the current account balance coefficient, GDP declines by 1% for every percentage increase in the current account balance. Among the four variables, unemployment rate, inflation, exports, and external debt, there is a positive correlation with GDP. The coefficient of the inflation rate indicates that inflation should not affect GDP and is statistically significant. Based on the coefficient of unemployment rate, each percent increase in unemployment increases GDP by 0.41%, and only insignificantly. The export and external debt coefficient shows that it should not affect GDP and is statistically insignificant. The adjusted R_square indicates the variation in the model. Inflation rate, unemployment rate, export external debt, and current account balance all contribute 44% to GDP variation. The overall explanatory power of the table is shown by ANOVA. Furthermore, the ANOVA results indicate a greater likelihood of accepting the null hypothesis than rejecting it.

Table 2 Least Square Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.05	0.03	1.57	0.14
Inflation Rate	0.00	0.00	-3.73	0.00
Unemployment Rate	0.41	0.30	1.38	0.19
Export	0.00	0.01	-0.37	0.72
External Debt	0.00	0.00	-0.83	0.42
Current Account Balance	-0.01	0.00	-3.55	0.00
R-squared	0.58			
Adjusted R-squared	0.44			
F-statistic	4.12			
Prob(F-statistic)	0.01			
Durbin-Watson stat	1.99			

6. Conclusion

Using primary data, this study investigates how the inflation rate, unemployment rate, exports, external debt, current account balance, and gross domestic product are related. During the study period from 2001 to 2021, there was a correlation between GDP and inflation, unemployment, exports, external debt, and the current account balance. All variables are at the same level in the ADF. From the analysis, it is also concluded that there is no normality in the data. The data analysis indicates that there is a positive and negative relationship between the variables. The current account balance shows a negative relationship and is statistically significant. The inflation rate and external debt have no relation to GDP. The ANOVA shows more chances to accept the null hypothesis and reject the alternate hypothesis.

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