Effect of Macroeconomic Variables on the Economic Growth of Pakistan

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Abstract

The point of this paper is to look at the effect of macroeconomic factors includes inflation rate, interest rate, exchange rate, and export rate on economic growth of Pakistan. The optional information has been taken for the years from 1968 to 2017. The result from linear regression model explains that inflation rate spread negative and insignificant impact on Pakistan economic growth while both interest rate and exchange rate spread negative and significant impact on Pakistan economic growth and export spread positive and significant impact on Pakistan economy. Therefore, all factors having less effect on the monetary development of the nation as a contrast with different elements which put a genuine effect on Pakistan economy condition.

Keywords: Economic growth; inflation; interest rate; exports; exchange rate; Pakistan.

Introduction

The relationship between the macroeconomic variables and economic growth has been one of the most important topics in the current years. Most of the studies have put the effort how the macroeconomic factors affected the health of the economy.
Economic growth explained the ability of an economy for production units of goods and services. The development or improvement of a nation can be estimated through the various financial factors for example, Human Development Index (HDI), Total Factor Productivity (TFP) and Gross Domestic Product Growth Rate (GDP) etc.

The rate of financial development in Pakistan is higher than the South Asian monetary development rate. Be that as it may, with the progression of time monetary development of Pakistan was influenced by various issues including political unsteadiness, the weight of remote obligation, poor fares and high imports, and the absence of execution of the financial strategies for a long time. Two wars with India first in 1965 on and second war in 1971 on Bangladesh autonomy brought Pakistan economy at subsidence arrange.

Consequently, the 1970s, the economy saw the separation of the nation after a common war, the nationalization of businesses, high swelling, back and training, flooding, a sharp climb in oil costs and retreat in the world market. The smothering of private activity and business enterprise and the command over all key choice factors by the Government were a noteworthy mishap to the economy causing tremendous vulnerability and loss of financial specialist certainty.

The economy enhanced in the 1980s by embracing deregulation approach by the legislature and arrangement creators. Monetary development decelerates some other time in the 1990s with normal pattern GDP development of 4.4percent every year and torpid TFP. Political precariousness, visit changes in government, powerless administration, poor macroeconomic administration, and negative outside condition was more prevailing than the ideal effect of monetary arrangements of deregulation, progression, and privatization presented in 1991.

The recent growth speeding up has likewise been joined by a comparative increment in the speculation proportion from 15.5 percent of GDP in 2001-02 to 20 percent in 2005-06. The ongoing development speeding up has come to a great extent from an expansion in

TFP (total factor efficiency). The commitment of TFP to development over the most recent couple of years is comparative or even to some degree higher than in the prior development timeframes.

The objective of this study examines the effect of macroeconomic factors on the economic growth of Pakistan over the period 1968-2017. This study is conducted in Pakistan. In this study noticed some important factors that can affect seriously the economic growth of Pakistan. Pakistan economy can be affected by many macroeconomic factors like inflation, national income, interest rate etc. The main aim of this study finds the impact of these selected factors such as Interest rate, exchange rate, inflation rate and export on the economic growth of Pakistan.

The structured of the study contains the following steps. In the first section give the introduction of the study second the literature review, third methodology, and data collection and last the conclusion.

Research Question

What Effect of Macroeconomic variables on the Economic growth of Pakistan?

Literature review

(Chughtai, Malik et al. 2015) Conduct that both inflation rate and interest rate have a negative impact on economic growth of Pakistan. On the other hand, the exchange rate has a positive impact on the financial system. The researcher used the secondary data over the period of 1981 to 2013. (Jilani and Asim 2010).A researcher conducts the impact of the inflation rate, exchange rate and GDP of Pakistan. Take the over the period of 1980 to 2013.

Sultan et al. (2013) investigated the relationship between the inflation rate and economic growth of Pakistan. The Researcher takes the secondary data over the period of 2005 to 2015.the conclusion showed that inflation rate has a negative impact on economic growth of Pakistan.

(JAMIL) Conducted the relationship between both interest rate and private investment on economic growth of Pakistan. On the other hand, has taken the secondary data over the period of 1980 to 2010.the researcher concluded that private investment, government expenditure, and labor force have a positive impact on the GDP while FDI has a negative impact on GDP.

(Muhammad, Lakhan et al. 2013) examined the relationship between real interest rate and investment in Pakistan. The data was taken over the period of 1964 to 2012 from Pakistan. The study concluded that interest rate and investment have a negative relation. (Umaru and Zubairu 2012) exposed that inflation rate influenced for encouraging effect of productivity and economy. The study investigated the impact of fluctuations the inflation rate on the growth and advancement economy in Nigeria over the period of (1970-2010).

(Rehman 2016) examined the impact of foreign direct investment FDI on economic growth. Data collected during the period of 1970 to 2012. For analysis of data two models has been used. The first model resulted that foreign direct investment (FDI) depends on growth of economy but the second model suggested that foreign direct investment (FDI), exports and human capital are the main elements of economic growth.

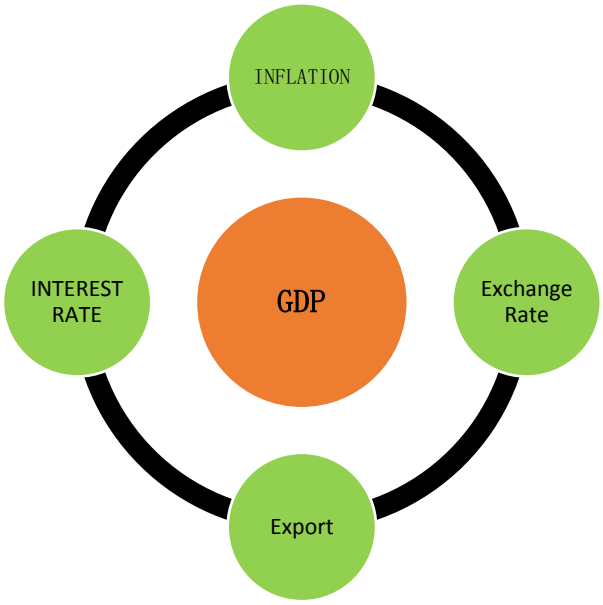
(Durham 2004)unsuccessful proven that foreign direct investment has a positive impact on economic growth. While FDI has a positive relationship with economic growth which recommended that the impact of foreign direct investment (FDI) is depending on the "absorptive ability" of another country.(Malik and Chowdhury 2001) conducted a long-term optimistic relationship with an economy of the four Asian countries (Bangladesh, India, Pakistan and Sri Lanka). They established that the long-term inflation rate has a significant impact on GDP. While progress rate which mentioned these countries they determined that inflation rate has a positive impact on the economy.

.(Khawaja and Din 2007) defined that if interest rises then depresses the saving and investment. They also exposed that inelasticity of deposit source has a key factor of interest blowout but was no important attention that impact interest blowout.

(Jayathileke and Rathnayake 2013) inspected the short run and long run relation among inflation and economic growth. Data was collected from three Asian countries over the period 1980-2010 and used co-integration and causality test. The result disclosed that inflation is negatively and long-run influence on the health of the economy in Sri Lankan but in India and China statistically significant among variables that run from the inflation to economic growth in China.

(Zhu and Pollin 2005)considered the new non-linear regression estimation of 80 states the relationship between inflation and growth from 1661 to 2000. They concluded that more inflation connected with the growth of gross domestic product up to around 15 – 18% inflation. (Uddin, Sjö et al. 2013) reviewed the link between financial growth and economic growth of Kenya during from 1971 to 2011. The observed results recommend that in the long term, the growth of the financial positively influence the growth of the economy

Theoretical Model



.Methodology

The motivation behind this investigation is to scan the impact of Macro-economic variables includes inflation rate, interest rate, exchange rate and export on the economic growth of Pakistan. A secondary data over the period of 1968 to 2017 have been collected from the different issues of the World Bank report, economic survey, and the other websites. The economists identifying the different factor for the many theories which The motivation behind this investigation is to,

$$Y= \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3+ \beta 4\ X4 + e$$

$$GDP = \alpha + \beta 1INFR + \beta 2EXCHR + \beta 3INTR + \beta 4+EXPR+ \text{Error Term}$$

Whereas

Y = Growth Rate

α = Constant

INFR = Inflation Rate

EXCHR = Exchange Rate

INTR = Interest Rate

EXPR=Export Rate

e = Error Term

β1, β2, and β3 are the coefficients of independent variables

There are various numbers of variables which influence the financial development of Pakistan in various ways. Diverse factors have been taken by numerous analysts to discover the connection between those factors and monetary development. However, this paper incorporates four free factors Inflation rate, conversion scale, and interest rate and export rate.

Variables and Measurements

Economic Growth

The following equation is used to **calculate** the **GDP**: **GDP** = C + I + G + (X – M) or **GDP** = private consumption + gross investment + government investment + government spending + (exports – imports). Yearly GDP development rate has been taken as Dependent variable.

Inflation Rate

Inflation, as estimated by the customer value file, mirrors the yearly rate change in the expense to the normal shopper of securing a bin of products and enterprises that might be settled or changed at indicated interims, for example, yearly. The inflation rate has been taken as the independent variable

Interest Rate

A loan fee is a rate at which premium is paid by a borrower (account holder) for the utilization of cash that they get from a moneylender (lender). Loan fees are regularly noted on a yearly premise. A financing cost for every year has been taken as an autonomous variable.

Exchange Rate

The cost of a unit of local money is communicated as far as the outside cash. A conversion standard in this manner has two segments, the local cash, and outside money, and can be cited either specifically or by implication. A swapping scale has been taken as a free factor.

Export Rate

Net Exports$_t$ = Total Value of Exports$_t$ – Total Value of Imports$_t$

Where "t" is an specific time frame, typically one year.

Research Hypothesis:-

H_1: There is a negative and insignificant relationship between inflation and economic growth.

H_2: There is a negative and significant relationship between interest and economic growth.

H_3: There is a positive and significant relationship between export and economic growth.

H_4: There is a negative and significant relationship between export and economic growth.

Results and interpretation:-

Descriptive analysis:

Table1 Descriptive analysis:

Variables	Mean	Maximum	Minimum	Std. Dev.
GDP	0.0502	0.1100	0.0000	0.0229
INFLATION	0.0870	0.2700	0.0000	0.0535
INTEREST	0.1270	0.1800	0.0600	0.0335
EXPORT	0.0606	0.3300	-0.1800	0.1214
EXCHANGE	39.9320	122.3000	4.8000	33.4645

Table 1 shows the descriptive Analysis which analyze the effect of macroeconomic factors on the growth of the economy. The tables express the mean, minimum, maximum and standard deviation value of the variables. Mean exemplify the average value, standard deviation represent a deviation from the mean. Table 1 shows that means the value of GDP is 0.050 and std. Dev 0.022 and respectively.

Correlation analysis:

Table 2 Correlation analysis:

	GDP	INFLATION	INTEREST	EXPORT	EXCHANGE
GDP	1				
INFLATION	-0.1040	1			
INTEREST	-0.1978	0.0665	1		
EXPORT	0.3689	-0.2289	0.0515	1	
EXCHANGE	-0.2718	-0.0744	-0.0077	-0.0468	1

Table 2 represents that the correlation between the independent variable (what is the effect of one variable on the other variable).In the correlation analysis judge that either variable is correlated with each other or not. If the value increases the 90% above means multicollinearity exists which show that the one independent variable is 100% correlate with the other independent variable. Low correlation (below 90%) describes that multicollinearity does not exist. Sometimes due to an error in data the multicollinearity occurs.

Regression analysis

To find the quantitative forecasts in regards to needy and autonomous factors, relapse examination technique has been received that demonstrates the individual criticalness of every free factor and generally speaking essentialness of the model. Following are the aftereffects of regression.

Model Summary 1

Model	R	R Square	Adjusted R-Squared	Std. Error of estimate
1	0.489	0.249	0.213	0.0131

a. Predictors: (Constant), Exchange Rate, Interest Rate, Inflation Rate, the export rate

In the above model summary table the capital, R‟ representing the coefficient of correlation. The coefficient of correlation „R‟ decides the degree and course of the factors which are related with one another from the example information. There is a scope of the coefficient of relationship which expresses the quality and course of the connection between's the factors. This range incorporates„+1‟ and „-1‟. If there is a strong positive linear relationship found between variables and the value of the „R‟ would close to the „+1‟. While the value of the „R‟ will be closed to „-1‟ a negative linear relationship found between variables and if the value of „R‟ will be zero which depicts a powerless connection between the factors. The model synopsis table demonstrates the estimation of R squared is discovered 0.249 that implies 24 % of monetary developments of Pakistan are clarified by the free factors incorporates swelling rate, conversion scale, trade rate, and financing cost. The estimation of,R‟ is low in light of the fact that the financial development additionally relies upon numerous different elements like political solidness, government strategies, government utilization, fares and imports of the nation

Results of Regression Analysis Table 2

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.0729	0.0131	5.5627	0.000
Inflation	-0.0111	0.0574	-0.1942	0.8469
Interest	-0.1486	0.0889	-1.670	0.1017**
Export	0.0685	0.02521	2.7167	0.0093*
EXCHANGE Rate	-0.0001	8.92-05	-1.9917	0.0525*

The estimation of consistent is discovered 0.0729 which portrays that if every autonomous variable stay zeroes the economy of Pakistan will stay influenced by different factors that have not considered. The t-estimation of expansion rate is discovered 0.1942 which portrays that swelling rate has an unimportant effect on Gross Domestic Product development of Pakistan. The coefficient of expansion rate is demonstrating the negative effect on monetary development. The estimation of the coefficient of expansion rate is demonstrating that if swelling rate would increment by 1%the development rate would be declined by1.11%. This outcome portrays the significance of the expansion in Pakistan's economy that just 1% increment realizes 1.11% decreases in the general financial development. The t-estimation of swapping scale is found - 1.9917 which express the huge effect of conversion scale on financial development of Pakistan. The outcome likewise uncovered that conversion scale a and monetary development is contrarily connected with one another on the grounds that 1% changes in exchange rate brings0.01% changes in the economy of Pakistan.

Conclusion and Recommendations

For the constant growth of the economy is the objective of the almost all countries. It has been impossible to accomplish these objectives because of different types of problems that influence the health of the economy.

The study investigates the effect of macroeconomic factors on the economic growth of Pakistan during the period of 1968-2017. The papers examine the effect of macroeconomic variables on the growth of the economy by using the coefficient correlation and regression techniques. Economic growth is measured by inflation, interest rate, exports, and exchange rate. Also discovering the existence and significance of the association between all selected variables of macroeconomic (inflation, interest, export and exchange rate) and economic health. The results indicate the inflation is insignificantly influenced on economic growth and other variables (interest, exports, and exchange rate) significantly related to the development of the economy.

On the basis of this research, it can be recommended that the policymakers and the state bank of Pakistan should take steps to reduce the inflation in the country and should implement different tools to control the circulation of money in the market. For the generation of more deposits in banks, the interest rate should be stable. The results of this study show that the exchange rate positively influences on GDP of Pakistan. So the study proposed to policymakers to keep a high exchange rate to enhance Pakistan's economy.

Future Direction

Regarding the future direction for the researcher put the effort on increasing the variable and the sample size of the study for the more accurate result. Because this study uses the sample of 50 years so next for the research increase the time period.

References

[1] Chughtai, M. W., et al. (2015). "Impact of Major Economic Variables on Economic Growth of Pakistan." Acta Universitatis Danubius: Oeconomica**11**(2).

[2] Durham, J. B. (2004). "Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth." European economic review**48**(2): 285-306.

[3] JAMIL, N. I. M. F. "Interest Rates, Government and Private Investments and Pakistan Economy: An Analysis of Three Decades."

[4] Jayathileke, P. M. B. and R. M. K. T. Rathnayake (2013). "Testing the link between inflation and economic growth: evidence from Asia." Modern Economy**4**(02): 87.

[5] Jilani, S. and M. Asim (2010). "Exploring Impact of Macro-Economic Variables on GDP of Pakistan." Journal of Management and Social Sciences**6**(2): 65-73.

[6] Khawaja, M. I., and M.-u. Din (2007). "Determinants of interest spread in Pakistan." The Pakistan Development Review: 129-143.

[7] Mallik, G. and A. Chowdhury (2001). "Inflation and economic growth: evidence from four South Asian countries." Asia-Pacific Development Journal**8**(1): 123-135.

[8] Muhammad, S. D., et al. (2013). "Rate of Interest and its Impact on Investment to the Extent of Pakistan." Pakistan Journal of Commerce and Social Sciences**7**(1): 91.

[9] Obwona, M. B. (2001). "Determinants of FDI and their Impact on Economic Growth in Uganda." African development review**13**(1): 46-81.

[10] Rehman, N. U. (2016). "FDI and economic growth: empirical evidence from Pakistan." Journal of Economic and Administrative Sciences**32**(1): 63-76.

[11] Uddin, G. S., et al. (2013). "The causal nexus between financial development and economic growth in Kenya." Economic Modelling**35**: 701-707.

[12] Umaru, A. and A. A. Zubairu (2012). "Effect of inflation on the growth and development of the Nigerian economy (An empirical analysis)." International Journal of Business and Social Science**3**(10).

[13] Zhu, A. and R. Pollin (2005). Inflation and Economic Growth: A Cross-Country Non-linear Analysis.