Effect of Macro-economic Variables on Economic Growth of Pakistan

Leading Author: Shama Noreen
Amara Azeem, Iqra Iftikhar and sadia Shahbaz
Department of Management Sciences, University of Narowal

Abstract
The main purpose of this study explores the effect of macroeconomic variables on the economy of Pakistan. This study contributes to the existing literature by investigate the empirical methods for estimation the impact of macroeconomic variables (inflation, interest rate, export and exchange rate) on the growth of economy. Used the time series data of 50 years during the period of 1968-2017 for the analysis. Data collected from the websites of World Bank and state bank of Pakistan. The findings of this study indicated that inflation is negative and insignificantly effected on growth, while interest and exchange rate is negative but significant and export has positive and significant impact on the growth of economy. The results suggested that the government should tight the policies and control the other factors which can badly affect the economic growth of Pakistan. Interest rate, exports exchange rate should also be controlled according to the development of economy.
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 seriously investigated topics in the current years. Most of the studies have tried to explain how the macroeconomic factors affected the health of economy.

Economic growth can be explained as the ability of an economy to produce much more units of goods and services. This ability can also be seen as holy grain for economic policies. The economic growth and development can be measured by Human development index, total factor productivity and gross domestic product etc. (Smyth 1995).

In December 8, 1985 the south Asian association for regional cooperation (SAARC) was established and the governments of Bhutan, India, Maldives, Pakistan and Sri Lanka was officially accepted its charter. Following was the objects of the relationship stated according to the charter: (1) to increase the growth of economy, societal development and improvement in culture and equal opportunities provided to individual to live with self-respect, (2) to encourage energetic cooperation and help each other in all fields of life Madhu Sehrawat A K Giri, (2016).Banking sector donates near growth domestic product (GDP) through recognition formation then feature outgoings. Therefore, Analysis of financial performance of commercial banks has been of great interest of academic research, angora and Kusa, 2013. Macroeconomic determinants are not under the control of bank's management; in fact banks should consider these factors while making strategic decisions which can counter negative impact and can leveraged the positive impact of those determinants. Structural changes now the segment such by way of interest rate deregulation, Basel II Rules besides overview of improper frequency, etc. These variations take stimulated struggle amongst the banks. Structural variations distress the outward factors such as GDP, interest rate and inflation. (Ketan Mulchandani and N.K. Totala).

The evolution before growth of a state canister remains stately over several fiscal pointers such by way of Human Development Index (HDI), Total Factor Productivity (TFP) and Gross Domestic Product Growth Rate (GDP) etc (Smyth, 1995). Constant growth in the level of economic growth through the short smooth of price rises percentage is individual of the key objects aimed at strategy producers to achieve proficient part now economic policies design (Muhammad Waqas Chughtai1). Monetary policy-whether stated popular relations of interest rates before evolution of monetary aggregates-has remained progressively geared near the attainment of squat besides constant inflation. This study delivers a belief that inflation is an evil knowledge, then the situation remains not significant deprived of secondary experiential findings (Robert J. Barro).

Neither Malthus's nor the neoclassicists' method to evolution rewards significantly devotion to social capital. However the suggestion remains currently reasonably durable of a nearby relationship among investments in social capital and growth. In our creation, primary stages of anthropoid capital besides technology, then succeeding output then additional surprises, regulate whether a state produces better-off concluded period before festers on small revenue stages (Gary S. Becker et. al). Now accumulation towards these actual benefits, his comparative constancy devours moreover enlarged the stress proceeding FDI amongst altogether capital flows.4 Which ever through learning-by-observing before learning-by-doing, foreign production could growth national efficiency then the general economic growth popular the domestic economy.

An economy occupied through causes who remain differentiated in their capability close. Agents consume double adoptions. They be able to only effort aimed on the imported establishment popular the FDI segment then practice their natural affluence to produce a return. Before they canister indicate towards established awake their particular firm, which willpower benefits since a fall done outstanding towards foreign direct investment (FDI). Tesar and Hull's (2000) effort displays that conglomerates canister consent aimed on bigger hazard changed (Laura Alfaro et. al 2000).For a long time, unverifiable and low level of growth domestic product in developing countries has become great challenge for policy makers, experts and Government (chughtai et. al 2015). Pakistan is also facing a challenging atmosphere not only for foreign investors but also for domestic investors due to indefensible politics and terrorism. If we examine the past three era's economic performance of country and its relation with the political volatility and terrorism, we can examine the reverse effect on the Pakistan's economy.

As we know that the investment policies have a large effect on production of country. But if there is political instability and no security for human life that the economic policies can never achieve the ideal goal. However the positive improvement regarding the investment can improve the economic performance and can cause the more exports than imports. It is true that Pakistan is an ideal place for investment for some reasons like growing infrastructure, inexpensive labour, attractive natural resources and climate. (Iqbal et.al 2015). The objective this study is explores the effect of macroeconomic factors on economic growth of Pakistan during the period 200-2017. This study is conducted in Pakistan. In this era, we have noticed that some important factors that can effect seriously the economic growth of Pakistan. Pakistan economy can be effected by many macroeconomic factors like inflation, national income, interest rate etc. the main purpose of this study is to find out the impact of these factors on the GDP of Pakistan and also find out the steps which can improve the Pakistan's economy.

The study structured in following components. Introduction is presented above in section 1. After an introduction section 2 represent the review of related literature. Methodology which is used in this paper is presented in section 3. After methodology section 4 presented the results analyzed from data and at the end of paper in section 5 discussed the conclusion recommendation and implications.

Research Question

What Effect of Macro-economic variables on Economic growth of Pakistan?

Literature review

(Chughtai, Malik et al. 2015) concluded results from linear regression define that both rate of inflation and rate of interest influence negatively on economic health of Pakistan whereas exchange expense is discovered positive influence on the financial system. The secondary data collected for the years from 1981 to 2013.(Jilani and Asim 2010) conducted the study during the period of 1980-2013. The study examined the effect of inflation, interest rate and exchange rate on gross domestic product of Pakistan.

Sultan et al. (2013) investigated the relationship between inflation and Pakistan's economic growth using data from 2005-2015. The conclusion express that the risky effect of recent inflation rate on the economic growth. (JAMIL) examined the association among interest rates and private investment with the growth of Pakistan's economy by data from 1980-2010. The observed outcomes show that private investment, government expenditures and labor force positively influence on GDP and foreign FDI negatively impacted on GDP.

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

(Rehman 2016) examined the impact of foreign direct investment FDI on economic growth. Data collected during the period from 1970 to 2012. For analysis of data two models had been used. The firs 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.

(Obwona 2001)observed that factors of foreign direct investment (FDI) and effect on development in Uganda that macroeconomic and political permanency and policy constancy are important factors defining the movement of foreign direct investment (FDI) into Uganda. Growth had effected by foreign direct investment (FDI) insignificantly and positively. (Durham 2004)unsuccessful to proven that foreign direct investment has positive impact on economic growth a positive relationship between FDI and growth, recommended that the impact of foreign direct investment (FDI) is depending on the "absorptive ability" of other country.

(Mallik and Chowdhury 2001) inspected a long term optimistic association with economy of the four Asian countries (Bangladesh, India, Pakistan and Sri Lanka). They established that a long term significant impact of inflation on GDP progress rate in mentioned countries they determined that a modest inflation rate has positively influence 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.

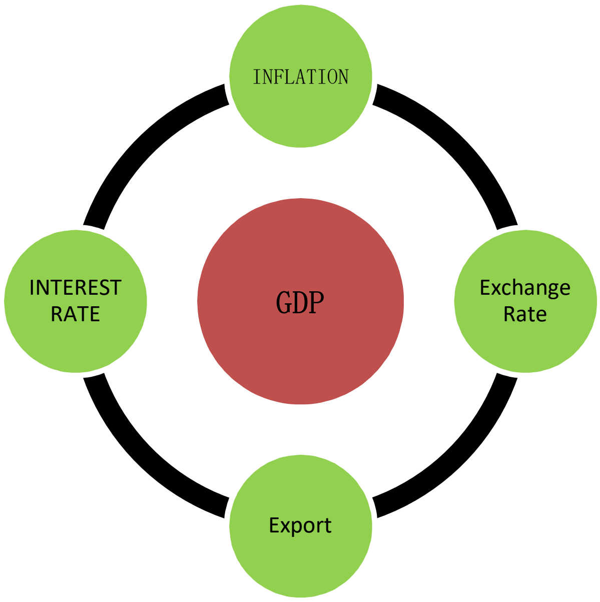
(Jayathileke and Rathnayake 2013) inspected the short run and long run relation among inflation and economic growth. Data was collected from three Asian countries over the period 1980-2010 and used co-integration and causality test. The result disclosed that inflation is negatively and long run influence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

(Zhu and Pollin 2005)considered the new non-linear regression estimation of 80 states relationship between inflation and growth during 1661 to 2000. They concluded that more inflation connected with growth of gross domestic product up to around 15 – 18% inflation.(Uddin, Sjö et al. 2013) reviewed the link among 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 on the growth of economy.

Methodology

This study is based on cause and effect relationship. The dependent variable is gross domestic product (GDP) and independent variables are inflation (INF), foreign direct investment (FDI), exchange rate (EXCH).

Thertical Model:



Equation Model:

$$GDP_t = \alpha + \beta_t INF_t + \beta_t INTR_t + \beta_t EXP_t + \beta_t EX_t + \acute{\varepsilon}$$

Where:

- ❖ GDP (gross domestic product) shows production of goods and services in country during one year.
- ❖ Inflation represent that too much money chases few goods or raise in prices consistently in a country. In this study, inflation is measured by consumer price index (CPI).
- ❖ Rate of interest is taken as the lending interest rate adjusted for inflation.
- ❖ Exports mean the international trade (sending goods and services to another country).
- ❖ Exchange rate is conversion rate of one currency into other currencies.

The study is based on secondary data. Period is covered during 2000-2017 for gathering data. State bank of Pakistan and World Bank these two websites are used for collection of data. Regression analysis is used to determine the relationship of macroeconomic variables and economic growth.

Research Hypothesis:-

$\boldsymbol{H_1}$: There is negative and insignificant relationship between inflation and economic growth.
$\boldsymbol{H_2}$: There is negative and significant relationship between interest and economic growth.
$\boldsymbol{H_3}$:There is positive and significant relationship between export and economic growth.
$\boldsymbol{H_4}$: There is negative and significant relationship between export and economic growth.

Results and interpretation:-

Descriptive analysis:

Table1 Descriptive analysis:

Variables	Mean	Maximum	Minimum	Std. Dev.
GDP	0.050200	0.110000	0.000000	0.022990
INFLATION	0.087000	0.270000	0.000000	0.053500
INTEREST	0.127000	0.180000	0.060000	0.033518
EXPORT	0.060600	0.330000	-0.18	0.121494
EXCHANGE	39.93200	122.3000	4.800000	33.46455

Table 1 shows the descriptive statistics to analyze the effect of macroeconomic factors on the growth of economy. The tables express the mean, minimum, maximum and standard deviation value for variables. Mean exemplify the average value, standard deviation represent deviation from mean.

Correlation analysis:

Table 2 Correlation analysis:

	GDP	INFLATION	INTEREST	EXPORT	EXCHANGE
GDP	1				
INFLATION	-0.104035843	1			
INTEREST	-0.197837596	0.066577237	1		
EXPORT	0.368937528	-0.228918997	0.051568308	1	
EXCHANGE	-0.27182798	-0.074426142	-0.007772658	-0.046801907	1

Table 2 represents that the correlation between independent variable (what is the effect of one variable on the other variable). Low correlation (below 90%) describes that multi co linearity does not exist.

Regression analysis:

Table 3 Regression analysis:

variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.072994	0.013122	5.562760	0.0000
Inflation	-0.011153	0.057417	-0.194254	0.8469
Interest	-0.148694	0.088989	-1.670932	0.1017**
Export	0.068514	0.025219	2.716794	0.0093*
EXCHANGE Rate	-0.000178	8.92E-05	-1.991702	0.0525*

Level of significance 10% and 5%***

R-Squared 0.249

Prob 0.010

The "R" demonstrating the coefficient of correlation. The coefficient of correlation "R" defines the degree and way of the variables which are related with each other from the sample data. There is a range of coefficient of correlation which expresses the strength and course of the correlation among the variables. Regression results shows in table 3 GDP is dependent variable which measures from inflation, interest, export and exchange. Inflation has insignificant but negative relationship with GDP growth rate. Interest rate shows significant but negative relation with gross domestic product (GDP). Export has positive and significant relationship with GDP growth rate. Exchange rate is significant and negatively influence on GDP growth rate. T-statistics should be 2% or more than 2%.

Conclusion and Recommendations

For constant growth of 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 on the health of economy (Barro, 1995).

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

On the basis of this research, it can be recommended that the policy makers and 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 exchange rate is positively influence on GDP of Pakistan. So the study proposed to policy makers to keep high exchange rate to enhance the 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 in this study use the sample of 50 years so next for the research increase the time period.

References

Chughtai, M. W., et al. (2015). "Impact of Major Economic Variables on Economic Growth of Pakistan." Acta Universitatis Danubius: Oeconomica11(2).

Durham, J. B. (2004). "Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth." European economic review48(2): 285-306.

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

Jayathileke, P. M. B. and R. M. K. T. Rathnayake (2013). "Testing the link between inflation and economic growth: evidence from Asia." Modern Economy4(02): 87.

Jilani, S. and M. Asim (2010). "Exploring Impact of Macro Economic Variables on GDP of Pakistan." Journal of Management and Social Sciences6(2): 65-73.

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

Mallik, G. and A. Chowdhury (2001). "Inflation and economic growth: evidence from four south Asian countries." Asia-Pacific Development Journal8(1): 123-135.

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 Sciences7(1): 91.

Obwona, M. B. (2001). "Determinants of FDI and their Impact on Economic Growth in Uganda." African development review13(1): 46-81.

Rehman, N. U. (2016). "FDI and economic growth: empirical evidence from Pakistan." Journal of Economic and Administrative Sciences32(1): 63-76.

Uddin, G. S., et al. (2013). "The causal nexus between financial development and economic growth in Kenya." Economic Modelling35: 701-707.

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 Science3(10).

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