



Impact of Interest Rate on Economic Growth of Pakistan

Saira¹, Kanwal²,

ARTICLE DETAILS	ABSTRACT
History Revised format: May, 2020 Available Online: Jun, 2020	This study examined the impact of interest rate on economic growth of Pakistan. Explore the relationship between dependent variables Gross Domestic Product and independent variables interest rate, employed labour force, domestic investment and inflation. The annual time series data used from 1991 to 2018. The study also applied Ordinary Least Square (OLS)
Keywords Interest Rate, Employed Labour Force, Domestic Investment, Inflation, Pakistan, OLS	method to co-integration and to estimate the relationship between dependant variable and independent variables. The result of OLS method shows interest rate has negative and significance and employed labour force has positive and significant impact on economic growth of Pakistan. While the domestic investment and inflation have insignificant.

¹National College of Business Administration & Economics Multan Campus.

²District Health Authority, Multan.

1 Introduction

Economic development of the country is measured by the gross domestic product of the country. If the country's GDP is in better condition and going to increase it means economic growth is increase. Any type of fluctuations in GDP will affect the overall economic growth of the country. There are many factors which influence the economic growth of the country. Interest Rate is one of them. The interest rate plays a vital role in the economy of the country. The economy of developing and developed countries can be affected positively or negatively by interest rate. If the interest rate changes and implemented effectively that the investment and also effect the economic growth. Some researcher evidence found for developing and non-developing countries including Pakistan. According to Idris (2019) interest rate are having adverse effect on the Country's GDP. have negative effect on the real GDP. According to Werner and Lee (2018) The research has finding that interest rate follows growth in GDP and has frequently positively correlation with GDP growth. The study believed that if rates are set in consistent with the recovery by the policy makers, there would be a need to increase it. According to Binh and Dan (2017) interest rate affect adversely the growth in the context of developing economies. According to Ayub and Shah (2015) interest rate greatly affected the GDP and there are various unknown factors that impact on Gross Domestic

Product (GDP). According to Lut and Moolio (2015) economic growth was not affected by any change in interest rate over the period of the study. According to Ihsan and Anjum, (2013) GDP was significantly affected by interest rate. According to Ahmad et al (2016) interest rate has a negative impact on economic growth.

Research Questions

- What is the Impact of Interest rate on Economic Growth?
- How the employed labor force effect economic growth of Pakistan?
- What is the Impact of domestic investment and inflation on Economic Growth in Pakistan?

Objectives of study

- To determine the impact of interest rate and economic growth
- To determine the impact of employed labor force and economic growth
- To determine the impact of domestic investment and inflation economic growth

Scope of the study

To determine the scope of this topic the impact of interest on the economy of Pakistan we have to discuss and explain the scope of this topic and also try to present a thorough view of this topic and draw possible outcomes which leads towards the betterment of the economy, after keeping in view of interest rate like as everyone knows the current situation of Pakistan's economy and it has to confront and raising a questions about which should be adopted and what measures we should take to draw maximum output after lowering and rising the interest rate our core aim should be to put on track our economy towards rising side and draw our economy from developing to developed and it can only happen after taking decisive measures about interest rate. Here are some draw backs of this topic are as follows and also some points to be discussed and explained like if the government remains fail to take decisive steps of how and what effects one should have to be faced if the interest rate is vice versa it will also be in a position of takeoff.

2 Literature Reviews

Idris (2019) explored the effect of the monetary policy of an economy on the growth of the economy. However, the evaluating the policy connection between the two phenomena remains unsettled and there is no general agreement among researchers about this relationship. The study focused on the economy of the Nigeria and collected the time series data to find the association in these two constructs by having data from 1980 to 2017. Monetary policy believed to affect the employment position, price stability, growth of aggregate output and equilibrium (in the balance of payment) for the case of world of developing economies. Co Integration test, the Ordinary Least Square (OLS) techniques, the Phillips Perron (PP) and Augmented Dickey-Fuller (ADF) tests are used for indicate the existence of long-run relationship between monetary policy indicators and economic growth. Empirical findings put forward that money supply has positive effect on GDP. Findings also showed that both exchange rate and interest rate are having adverse effect on the Country's GDP. have negative effect on the real GDP. The study concluded that appropriate monetary measures are obligatory for satisfactory managed economy. Nguyen (2019) analyzed the role of monetary policy on the economy by focusing on the developing and emerging economies. The study Used 32 countries which are either developing countries or emerging countries covering the time period between 2001 and 2014. Meta-regression analysis (MRA) conducted to in order to explore the synthesize vector-autoregressive findings. The study revealed that tightening monetary policy has a adverse

influence on output while commodity price variable indicates stronger negative effect. The study found no significant effect on independence of central bank and variation in output. Regarding financial structure, furthermore findings showed economies with high inflation volatility have lower output effects and more effective in those economies which have developed financial system. Abdinur and Mustafa (2019) Examined Monetary Policy effects over the productivity growth in Somalia. Their research covered time period from 1970-2010. Productivity and output level both influenced by money factors as well as capital accumulation, technological progress and population growth. Monetary policies have effect on these factors which interrelate each other. The study aimed to assess the role of monetary policy of country on output growth in Somalia in order of monetarist view using the equation of exchange presented by Irving Fisher. The study adopted the regression technique namely OLS method for the purpose. Data obtained from World Bank, SESRIC, and World development indicators (WDI). The effect of inflation rate, exchange rate, money supply considered as independent variables and their influence on the growth of the economy considered as GDP as dependent variable. Findings revealed positive and significant association between economic growth and money supply and negative but significant relationship between exchange rate and inflation on economic growth (GDP). Werner and Lee (2018) analyzed the reconsidering Monetary Policy. The study focused on empirically type of the study to analyses the relationship Between Nominal Growth of GDP and Interest Rate in the United State, UK, Germany and Japan. The study emphasized on the fact that interest rate (the cost of capital) is generally accepted key policy tool. Dynamic framework Axiomatic deductive methodology has done for theoretical support. The study argued that in equilibrium situation the constraints of quantity have more influence than price for determining the outcomes of market while in disequilibrium circumstances are different as interest rates ought to be indecisive as variable of policy and then outcomes ought to be more concerning to the quantities including the constraint of resources. The research has finding that interest rate follows growth in GDP and has frequently positively correlation with GDP growth. The study believed that if rates are set in consistent with the recovery by the policy makers, there would be a need to increase it. The study concluded that standard monetary policies which are traditionally regulated by central banks of the countries in the previous five decades are basically defective. The study recommended that Policy maker authorities have to more focus should be paid on the quantity related variables which enhance growth. The study of Dalhatu et al (2018) found the relationship between unemployment and growth of the economy of Nigeria by using time series data from 1986 to 2015. Unemployment rate and rate of GDP growth are independent and regressed variables respectively. ARDL, Bound Testing and the Parsimonious Error Correction Model (ECM) of the ARDL Model conducted to test the relationship between both variables. The study found no long run relationship between the rate of unemployment and growth rate of economy in the developing country of Nigeria but the empirical evidence provides that the increased rate of unemployment sharpens the economic growth. About 20.6 percent increase has been observed in the economic growth with each one percent increase in the unemployment and the results with the significance criteria. In other words, it is believed that findings put forwards the inclusion of informal sector in sharpen the growth. These findings are traditionally unexpected. Binh and Dan (2017) examined the influence of Macroeconomic Variables on growth of the economy focusing on 68 countries under study. The study involved panel data from the period 1996 to 2016. Dynamic framework used system GMM (System Generalized Method of Moments) for the purpose. The relation among growth of economy and other economic variables like domestic investment, trade openness, inflation, money supply and interest rate analyzed in the research. Findings put forward that increase in domestic trade openness and investment positively and significantly affect the growth of economy but inflation, interest rate and money supply affect adversely the growth in the context of developing economies. The study of

Alavinasab (2016) in the context of Iran focused on examining the influence of monetary policy and growth of economy by focusing on time series data during 1971-2011. The study involved Keynesian IS – LM function for theoretical framework. Unit Root Test, Regression Analysis, Co-integration Test, Error Correction Model, Diagnostic Tests, Test for Autocorrelation and Normality Test also conducted for the purpose. Regression model showed that explanatory variables have effect on the dependent variable in accordance with the expected models. In specific, negative impact of inflation and exchange rate on growth was found, similarly, money supply positively effects on the growth. Furthermore, the ECM's coefficient has significant and negative sign coefficient in the short run. The findings showed that inflation rate, exchange rate and money supply influence the growth of economy significantly in the long run analysis. Ayub and Shah (2015) analyzed the Impact of Monetary Policy on Gross Domestic Product (GDP). The data of 10 years from 2005 to 2014 has been used for generating the results. The study involves regression and correlation techniques among Money supply M2, interest rate, inflation and GDP. The studies also focused on determine the fluctuation of inflation rate and its impact on economic growth. The study found that money supply, interest rate and inflation greatly affected the GDP and there are various unknown factors that impact on Gross Domestic Product (GDP). The study also found monetary policy of Pakistan for some years has been largely supportive of the dual objectives of increasing economic growth and price stability. The study concluded that GDP is greatly affected by money supply, interest rate and inflation rate. Rahim et al (2012) examined the Linkage between Monetary Instruments and Economic Growth. The study put light on situations in which decisions of monetary authorities influence the macro variables as Gross Domestic Product, Interest rate, Exchange rates, Inflation and Money supply. The leading objective of monetary policy is to increase the level of welfare in economy and involved price stability, economic growth, checking Balance of Payments deficits and lower unemployment rate. Method of least square OLS applied which showed positive relationship between money supply and output while negative between exchange rate, inflation and output level. Babatunde and Shuaibu (2011) analyzed the case of Nigeria for relationship among Inflation rate, economic growth and money supply. Capital stock, money supply, economic growth and inflation are under consideration variables. The study spans over the years from 1975 to 2008 with time series data. Error correction mechanism, bound test, Autoregressive distributed lag used in the study for result generating purpose. The empirical results revealed capital stock has significantly positive relation with money supply while growth and inflation have negative relationship. Hammed (2011) examined the impact on Gross Domestic Product by monetary policy. The study used past 10 years' data involved different variables like money supply, GDP and interest rate. Regression Analysis technique has been found the relationship between variables. The study concluded that Money Supply has greater impact on GDP as compare to interest rate. Robert and Alexander (1997) put light on economic growth and inflation interacted with evidence from a growth equation. The study explored little existence of empirical evidence with respect to association between growth and inflation and much of evidences failed to hold adequate control for growth in real inputs. The study used sample of OECD countries to explore the relationship between macro-economic variables. Inflation, Capital stock, economic growth and labor force variables have been taken to investigate in a pooled time series, crosssection fashion, relationship between inflation and growth (GDP). The study found Strong evidence contrary to the constructed hypothesis that there should be no coalition amongst real growth and inflation. Lut and Moolio (2015) analyzed the impact on Economic Growth by monetary policy in a study of Cambodia using quarterly time series data from 2002 to 2012, to observe the impact of interest rate and money supply on GDP growth by using the technique of applying regression model. Estimated results proved that GDP growth was positively affected by money supply but that impact was relatively weaker as anticipated or discussed in previous studies, while economic growth was not affected by any change in interest rate over the

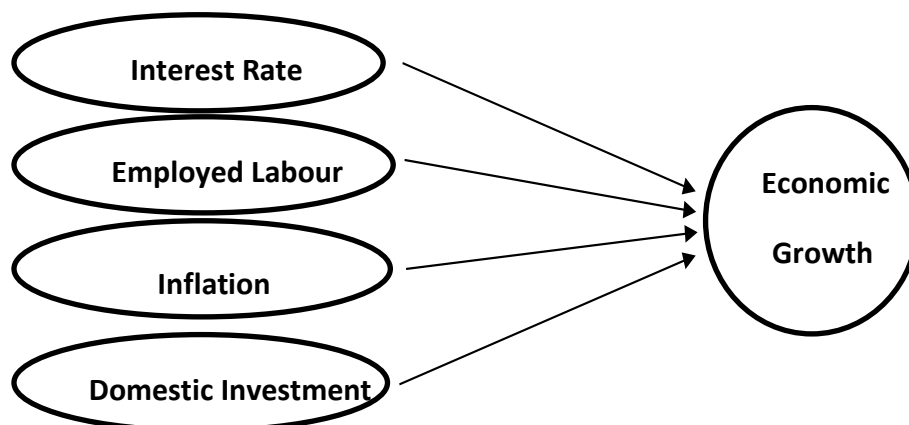
period of this study. Gladima, and Ngada, (2017) examined the Impact of Money Supply on Economic Growth in Nigeria over the period of 1981 to 2015. Johansen co-integration approach is used to check the long run relationship among the variables while Vector Error Correction Model (VECM) is used to measure the short run dynamics and Pairwise Granger causality test is used to check the direction of the causality between the variables. The empirical result confirms long run relationship among the variables where money supply and interest rate have positive significant impact while real exchange rate has negative significant impact on the economy. short run lagged value of MS has negative significant effect but lagged value of EXR has negative significant effect while lagged value of GDP and lagged value of INT do not have any significant effect on the economy. Ihsan and Anjum, (2013) investigated the Impact of Money Supply (M2) on GDP of Pakistan over the period of 2000 to 2011. By using the Regression model estimated results showed that GDP was significantly affected by interest rate and the CPI whereas GDP was insignificantly affected by inflation rate. Ayub and Shah, (2015) Analyze the impact of Monetary Policy on Gross Domestic Product over the period of 2005 to 2014. Regression and correlation techniques have been used to explain the relationship between the two variables. The study suggests that GDP is significantly affected by interest rate, inflation and money supply. Ahmad, Afzal and Ghani (2016) examined the Impact of Monetary Policy on Economic Growth of Pakistan over the period of 1973 to 2014. Autoregressive Distribution Lag (ARDL) Cointegration approach applied. Empirical findings of the mentioned studies suggest long-run relation exists between variables; i.e. exchange rate and money supply, economic growth is positively influenced by the variables. Economic growth is insignificantly but positively influenced by inflation, whereas interest rate has a negative impact on economic growth.

3 Data and Methodology

To find the relationship between economic growth and different macroeconomic variables in Pakistan, the present study used the annual data from the period of 1991 to 2018. It was taken from various sources as world development indicator (WDI), State Bank of Pakistan (SBP) and Pakistan Economic Surveys. It is clear that in the present study, the data is obtained from those sources which are generally accepted or globally approved.

Ordinary least square (OLS) is an important statistical technique which comes under the umbrella of linear least square methods. OLS is famous for assessing the population parameters of linear regression models. The OLS method focuses on the least square principle in which the summation of differences square between the linear function predicted and observed value of the dependent variable is minimized.

Framework



The mathematical model of the study is this;

$$GDP = f(IR, ELF, DI, INF)$$

The econometric model can also be written as:

$$GDP = \beta_0 + \beta_1 IR_t + \beta_2 ELF_t + \beta_3 DI_t + \beta_4 INF_t + \mu_i$$

Here,

GDP = Gross Domestic Product

IR = Interest Rate

ELF = Employed Labor Force

DI = Domestic Investment INF =

Inflation μ_i = Disturbance Term β_0

= Intercept $\beta_1, \beta_2, \beta_3, \beta_4$ = Slope of

Coefficients

4 Results and Discussion Descriptive Analysis

Examine the trends and association between explained and stimulus variables Expressive statistic is recycled. It runs normal inclinations and dissemination of information which broadens the territory of research and gives better gauging of future conduct. Determined outcomes are beneficial support for further analysis and strategy.

Table: 4.1 Descriptive Statistics

	GDP	IR	DI	INF	ELF
Mean	4.2325	11.803	15.7155	8.34308	45.18451
Median	4.5355	11.25	15.4707	7.80662	45.295
Maximum	7.7058	20	19.2354	20.2861	61.71
Minimum	1.0143	6.25	12.5206	2.52932	29.04
Std. Dev.	1.8207	3.8612	1.82297	4.23705	10.66124
Skewness	0.1426	0.3128	0.12403	0.64476	-0.08402
Kurtosis	2.3896	2.1044	1.96578	3.32149	1.491149
Jarque-Bera	0.5296	1.3923	1.31966	2.06063	2.689008
Probability	0.7673	0.4984	0.51693	0.35689	0.260669
Sum	118.51	330.5	440.034	233.606	1265.166

Sum Sq Dev.	89.506	402.54	89.7277	484.721	3068.876
Observations	28	28	28	28	28

Source: Software E-Views 9.0

Table of descriptive statistics show the 28 observations for the era of 1991 to 2018. In this study variables are Interest Rate (IR), Domestic Investment (DI), Inflation (INF) and Employed Labor Force (ELF) are Independent variables while the Gross Domestic Product (GDP) is dependent variable. Mean value of Gross Domestic Product (GDP) is 4.232536, median value is 4.535582, maximum value is 7.705898, minimum value is 1.014396. The standard deviation points out the spread out used data while higher value of standard deviation displayed larger spread. The value of the standard deviation of Gross Domestic Product (GDP) is 1.820725. Skewness is used to measure the symmetrical trend of data. The skewness value of the Gross Domestic Product (GDP) is 0.14269 and show GDP is positively skewed. For Kurtosis, 3 is the standard value but Gross Domestic Product (GDP) has 2.389616 value of kurtosis that represent the data has Platykurtic distribution. Jarque-Bera test for Gross Domestic Product (GDP) has 0.529679 value which is greater than 0.5 and forecast that data is not normally distributed. If probability of data is less than 0.05 means rejected null hypotheses. Probability (P) value of Gross Domestic Product (GDP) shows that it is statistically insignificant. In the table, second variable is Interest Rate (IR). Its mean value is 11.80357, median value is 11.25, maximum value is 20 and minimum value is 6.25. The value of standard deviation of Interest Rate (IR) is 3.861225 and 0.312819 is value of skewness, represent that Exchange Rate (ER) is positively skewed. Kurtosis value of Interest Rate (IR) is 2.104429, represent that the data has Platykurtic distribution. Jarque-Bera is 1.392381. Probability value is 0.498481 that is showing Interest Rate (IR) is statistically insignificant. In the table, third variable is Domestic Investment (DI). Its mean value is 15.71552, median value is 15.47078, maximum value is 19.23542 and minimum value is 12.52063. The value of standard deviation of Domestic Investment (DI) is 1.822978 and 0.124035 is value of skewness, represent that Domestic Investment (DI) is positively skewed. Kurtosis value of Domestic Investment (DI) is 1.965782, represent that the data has Platykurtic distribution. Jarque-Bera is 1.319669. Probability value is 0.516937 that is showing Domestic Investment (DI) is statistically insignificant. In the table, forth variable is Inflation (INF). Its mean value is 8.343085, median value is 7.80662, maximum value is 20.28612 and minimum value 2.529328. The value of standard deviation of Inflation (INF) is 4.237058 and 0.644766 is value of skewness, represent that Inflation (INF) is positively skewed. Kurtosis value of Inflation (INF) is 3.321497, represent that the data has leptokurtic distribution. Jarque-Bera is 2.060631. Probability value is 0.356894 that is showing Inflation (INF) is statistically insignificant. In the table, fifth variable is Employed Labor Force (ELF). It's mean value is 45.18451, median value is 45.295, maximum value is 61.71 and minimum value 29.04. The value of standard deviation of Employed Labor Force (ELF) is 10.66124 and -0.08402 is value of skewness, represent that Employed Labor Force (ELF) is negatively skewed. Kurtosis value of Employed Labor Force (ELF) is 1.491149, represent that the data has Platykurtic distribution. Jarque-Bera is 2.689008. Probability value is 0.260669 that is showing Employed Labor Force (ELF) is statistically insignificant.

Correlation Matrix

To recognize the statistical association among the variable correlation matrix is used. When one variable is increased but other variable is decreased then the association between the variable is negative. On the other hand, when one variable is increased along with other variable, then association is positive between the variables. It also indicates the direction of the variables through the sign whether variable has positive or negative direction in data.

Findings of the table 2 represent that Interest Rate (IR) has positive association with the Domestic Investment (DI), Inflation (INF). While Interest Rate (IR) has negative association with the Employed Labor Force (ELF).

Table: 4.2 Correlation Matrix

	IR	DI	INF	ELF
IR	1			
DI	0.476212	1		
INF	0.666184	0.37075	1	
ELF	-0.63042	-0.65471	-0.17154	1

Source: Software E-Views 9.0

Domestic Investment (IR) has positive association with Inflation (INF). While Domestic Investment (DI) has negative association with Employed Labor Force (ELF). Inflation (INF) has Negative association with Employed Labor Force (ELF). Correlation Matrix is also used to check the multicollinearity in the data. According to the findings of the correlation matrix, multicollinearity not exist in the data of the study.

Table 4.3 Auto-correlation

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.885852	P. Value	0.179

Source: Software E-Views 9.0

Auto-correlation is checked by employing the Breusch-Godfrey Serial Correlation LM Test in the data. Findings of the test show that auto-correlation is not present in the data because probability value is 0.179 that is greater than 5%.

Table 4.4 Heteroskedasticity Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.072927	P. Value	0.0256

Source: Software E-Views 9.0

Heteroskedasticity is checked by employing the Heteroskedasticity Breusch-Pagan-Godfrey test. Findings of the test show that heteroskedasticity is present in the data because probability value is 0.0256 that is lesser than 5%.

Regression Analysis

Regression analysis is applied to check the impact of all the independent variable on the dependent variable. In this study dependent variable is GDP while the independent variables are IR, DI, INF and ELF. After checking the multicollinearity that is data problem and error terms such as auto correlation and hetro. If they exist in the study, then after removing them we will be able to run the regression analysis.

Table 4.5 Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IR	-1.98086	0.993554	-1.99371	0.0593
ELF	20.99984	6.025267	3.485296	0.002*
DI	1.595483	1.611148	0.990277	0.3333
INF	0.024337	0.553517	0.043968	0.9653
R-squared		0.52147	F-statistic	3.814073
Adjusted R-squared		0.384748	Prob(F-statistic)	0.009971
Durbin-Watson stat		2.362844		

Source: Software E-Views 9.0

Findings of the table 5 represent the regression results of the data that show the how much the independent variables like Interest Rate (IR), Domestic Investment (DI), Inflation (INF) and Employed Labor Force (ELF) have impact on the dependent variable that Gross Domestic Product (GDP). Probability value of Interest Rate (IR) is 0.0593 and its coefficient value is -1.98086 that indicate that Interest Rate (IR) is statistically insignificant. Interest Rate (IR) is not taking the part in the economy of Pakistan. Probability value of Domestic Investment (DI) is 0.3333 and its coefficient value is 1.595483 that indicate that Domestic Investment (DI) is statistically insignificant. Domestic Investment (DI) is not taking the part in the economy of Pakistan. Probability value of Inflation (INF) is 0.9653 and its coefficient value is 0.024337 that indicate that Inflation (INF) is statistically insignificant. Inflation (INF) is not taking the part in the economy of Pakistan. Probability value of Employed Labor Force (ELF) is 0.0022 and its coefficient value is 20.99984 that indicate that Employed Labor Force (ELF) is statistically significant and has positive impact on the Gross Domestic Product (GDP) of the country. When Employed Labor Force (ELF) is increased by 1 percent, then the GDP will be increased by 20.99984 percent. Value of R squared is 0.52147 that indicate 52 % variations in the model is explained by independent variables for the dependent variable. Overall fitness of the model is representing by the F-Stat. Its value is positive and its probability value is 0.009971 that show model is fit.

4 Conclusions and Policy Recommendations

The fundamental target of the examination is to explore Ordinary Least Square (OLS) Method for the period of 1991 to 2018 is used to find out the empirical results. In this study variables are Interest Rate (IR), Domestic Investment (DI), Inflation (INF) and Employed Labor Force (ELF) are Independent variables while the Gross Domestic Product (GDP) is dependent variable. Main findings of the study show that Interest Rate (IR) is statistically significant and has negative impact on the Gross Domestic Product (GDP) of the country. Domestic Investment (DI), Inflation (INF) are statistically insignificant and it is not taking the part in the economy of Pakistan. Employed Labor Force (ELF) is statistically significant and has positive impact on the Gross Domestic Product (GDP) of the country. That show as the employed labor force increased in the country, due its Gross Domestic Product of the Pakistan will be increased. To get more improvement in Gross Domestic Product (GDP) in many ways need to improved, some recommendations are following:

- Government would try to improve the Domestic Investment in the economy that will increase the opportunity of employment for the residents of the country and unemployment will decrease.
- Policy makers would adopt all those measures that become the cause to increase in value of currency.
- State Bank of Pakistan provides loans on low interest rate for industrial and agriculture sector.
- Commercial banks should provide loans for small industries on low rate of return.

REFERENCES

- Alexander, W. R. J. (1997). Inflation and economic growth: evidence from a growth equation. *Applied Economics*, 29(2), 233-238.
- Ayub, S., & Shah, F. M. (2015). Impact of monetary policy on gross domestic product (GDP). *Asian Journal of Business and Management* (ISSN: 2321-2802), 3(06).
- Alavinasab, S. M. (2016). Monetary policy and economic growth: A case study of Iran. *International Journal of Economics, Commerce and Management*, 4(3), 234-244.
- Ayub, S., & Shah, F. M. (2015). Impact of monetary policy on gross domestic product (GDP). *Asian Journal of Business and Management* (ISSN: 2321-2802), 3(06).
- Ahmad, D., Afzal, M., & Khan, U. G. (2017). Impact of Exports on Economic Growth Empirical Evidence of Pakistan. *International Journal of Applied*, 5(2).
- Babatunde, M. A., & Shuaibu, M. I. (2011). Money supply, inflation and economic growth in Nigeria. *AsianAfrican Journal of Economics and Econometrics*, 11(1), 147-163.
- Gul, H., Mughal, K., & Rahim, S. (2012). Linkage between monetary instruments and economic growth. *Universal Journal of Management and Social Sciences*, 2(5), 69-76.
- Garrison, C. B., & Lee, F. Y. (1995). The effect of macroeconomic variables on economic growth rates: A cross-country study. *Journal of Macroeconomics*, 17(2), 303-317.
- Galadima, M. D., & Ngada, M. H. (2017). Impact of Money Supply on Economic Growth in Nigeria (1981–2015). *Dutse Journal of Economics & Development Studies*, 3(1), 133-144.
- Hussain, S., & Malik, S. (2011). Inflation and economic growth: Evidence from Pakistan. *International Journal of Economics and Finance*, 3(5), 262-276.
- Hameed, D. (2010). Impact of monetary policy on gross domestic product (GDP). *Interdisciplinary journal of contemporary research in business*, 3(1), 1348-1361.
- Ihsan, I., & Anjum, S. (2013). Impact of money supply (M2) on GDP of Pakistan. *Global Journal of Management and Business Research*.
- Idris, M. (2019). Monetary Policy and Economic Growth in Developing Countries: Evaluating the Policy Nexus in Nigeria. *Journal of Business and Economics Research*, 8(5), 290-300.
- Lee, K. S., & Werner, R. A. (2018). Reconsidering monetary policy: An empirical examination of the relationship between interest rates and nominal GDP growth in the US, UK, Germany and Japan. *Ecological Economics*, 146, 26-34.
- Lut, M., & Moolio, P. (2015). The impact of monetary policy on economic growth in Cambodia. *Journal of Management for Global Sustainable Development*, 1(1), 40-63.
- Mohamed, A. A., & Mohamed, M. Examining how Monetary Policy Effects the Productivity Growth in Somalia.

- Razzaque, M. A., Bidisha, S. H., & Khondker, B. H. (2017). Exchange rate and economic growth: An empirical assessment for Bangladesh. *Journal of South Asian Development*, 12(1), 42-64.
- Seth, A., John, M. A., & Dalhatu, A. Y. (2018). The Impact of Unemployment on Economic Growth in Nigeria: An Application of Autoregressive Distributed Lag (ARDL) Bound Testing. *Sumerianz Journal of Business Management and Marketing*, 1(2), 37-46.
- Soylu, Ö. B., Çakmak, İ., & Okur, F. (2018). Economic growth and unemployment issue: Panel data analysis in Eastern European Countries. *Journal of International Studies Vol*, 11(1).