

FISCAL IMBALANCE: EXPLORING THE LINK BETWEEN PAKISTAN'S BUDGET DEFICIT, INFLATION, AND UNEMPLOYMENT

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ABSTRACT

This study examines the impact of Pakistan's budget deficit on inflation and unemployment, key macroeconomic variables critical for government policy and economic growth. Guided by Keynesian theory, three econometric models are used to analyze the relationship between budget deficit, inflation, and unemployment. Findings indicate that the budget deficit significantly influences both inflation and unemployment, highlighting the importance of sound fiscal policy in managing macroeconomic stability and promoting development.

Key Words: - Macro economy, budget deficit, inflation, unemployment; Pakistan.

INTRODUCTION

In view of economic Macro Policy objectives, economists emphasize on some issues in most such as full employment, fixed price (inflation control), righteous income distribution, and perpetual economic growth. Due to critical effect of inflation on economy, controlling this issue is one of main objectives of economic macro policy for economists. (Fischer et al, 2002, 837-880) Budget deficit means planned exceeding of expenditures to income. This status now exists in most countries and through which the total demand and affordability increase in national economy. This policy was introduced at the time of big crisis for the purpose of promoting demand and employment at the time of keyns. Such a policy is applied in developing countries because of non investment of private sector and total demand shortage. (King and Plosser, 1985, 147-196) Economic phenomena of each country jointly and separately have the traits of study and revision. The existing research considers 2 important issues of inflation and unemployment a significant Macro economy factors which is influenced by budget deficit and then the way of financial supply. After introduction, the theoretical concepts are studied, then the

previous surveys are reviewed, and finally the hypothesis is tested by econometric methods.

Among Fiscal imbalance is one of the prime problems for all the Macro Economics policy advisors of the World. This is the self valued among the core Objectives of Economic Development. If it is then a country can not achieve Economic Development. If a country experiences Fiscal Deficit in its budget to finance it then, a country has to rely on the both domestic and foreign borrowings which eventually devalue the self respect of the country as a whole and the citizens of the country as well. A country has to keep its Balance between its expenditures and income i.e. that could protect the objectives of economic development in the state. A rise in public expenditure as put side by side to Public Revenue entails many implications on the performance of the economy. There has been continual rise in fiscal deficits in most of the developed and developing countries. High fiscal deficit poses a major challenge to developing countries. As far as the meanings of fiscal deficit are anxious different techniques have been used in the economic literature for the budget deficit. The most commonly used terminologies are Primary

Deficit, conventional and Operational Deficit. Conventional Primary Deficit is enlarged by interest payments on both domestic and foreign debt while Operational Deficit equals conventional which has been adjusted for Inflation (Agenor and Montiel, 1999).

The financial situation is a proper pre-condition is essential to achieve macroeconomic stability, which is recognized increasingly as a fundamental element for promoting strong management can call the domestic savings and more efficient allocation of resources and helps to achieve the goals of development. On the other hand, can loose fiscal policy leads to higher inflation (K. A.E Rana and G. R Abid (2010).

Budget Deficit

The national budget deficit is distinct as the amount by all which the government expenditures are more as compare to the revenues it these receives from all types of taxes (Anusic 1994). In the situation of Budget Deficit a Government can financed through these methods observed by (Burney and Akhtar 1992) 1)Public Borrowings 2)Borrowin through external resources 3) Draw external resources 4)Increase the level of money supply 5) Mix up the above four method.

Budget Deficit reduces National Saving because it's initial effect. National saving is the sum of Private saving (the amount of money which save after -tax through household) and Public saving

Budget deficit is one of the momentous factors of inflation. Increasing budget deficit means overindulgence of income above expenditures and this would achieve the budget deficit throughout printing new money notes, controlled credit and external credit. When the new money came into the marketplace, it inflamed the insist for commodities and services but on the other side it remain the same as supply amplified and inflation will grow as the result of this price. An amplified in the grasp prices may have positive effect on inflation through increasing food prices as wheat and wheat connected products. Borrowing by the private sector is expected to apply a positive weight on inflation due to amplified demand in the increasing. Impact of Inflation on Interest rate is to be up or downbeat depending on the purpose of loaning. If the main part of the construct is for loaning division, an improved in interest rate would have improved the cost of borrowing and

increase inflation. And, if loaning if main part is for expenditure, inflated in aggregate demand and the negative in interest rates would reduce inflation. Money supply and inflation are implicit to be positively correlated (Shams et al., 2013).

In a government budget deficit can be financed through following methods which are observed by (Burney and Akhtar 1992) 1) Rise in money supply level 2)Public borrowing 3)External sources of borrowing 4)Draw external reserve 5)the mix up of above four methods

Budget deficit have many effects because its initial effect reduces national saving. As national saving is the sum of Private saving (amount of money which household save after-tax) and Public saving (its tax revenue which saved by government) so, in this situation when government faces Budget Deficit, the public saving going negative saving (Ball and Mankiw 1995).

Objective of the Research

1. To find out the impact of Budget Deficit on Pakistan Economy.
2. To determine the effect of Budget Deficit on inflation and unemployment in Pakistan Economy.

Purpose of the Study

This study has an objective to determine the effect of Budget Deficit on inflation and unemployment in Pakistan Economy in time period 2004 to 2013.

Research Gap

There is too little work in this area to impact of Budget Deficit on inflation and unemployment in Pakistan Economy.

Data collection

Researcher collects the data from Second hand data were the economic data gathered in Central Bank, Statistics Organization, and Management and Planning Organization. Data banks, computer networks, and websites of Statistics Organization, and Management and Planning Organization Central Bank, were applied. Time domain was (1979-2016), and the effect of budget deficit on inflation and unemployment variables are shown after studying the findings.

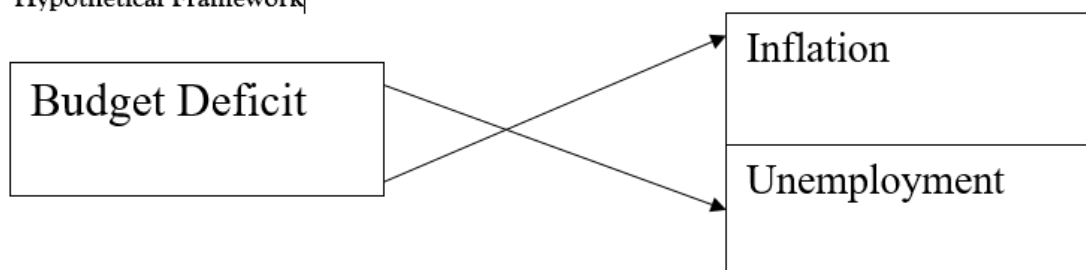
Theoretical concept

Today, monetary policy is applied for making decision about the appropriate amount of money or the appropriate rate of money growth to influence economic activities (e.g production, employment,...) (Moraseli, 2005, p189-193). The name of Milton Freedom is integrated with monetary economy theory. Freedom says: 'inflation is basically a monetary phenomenon which is created by increasing money volume faster than production volume. Outstanding change in prices or nominal income in most likely the reason of change in nominal money supply.

(Ahmadi Kashani, 2010,12) Based on a dynamic systematic analysis, the relation between budget deficit, money supply, and inflation can be analyzed as follows: increase in government budget deficit leads to more debts for public sectors, and further increase in monetary base balance, and finally more money supply. Now, considering the positive relation between general inflation and liquidity, the money supply increase will result in more general inflation. One the other hand, price growth also decreases actual value of cabinet expenditure in the next run, and enforces the cabinet to compensate such a decrease by increasing the figurative expenditure increase (budget deficit) and inflation. (Piontkivsky, 2001) Inflation is a situation where general level of prices is continuously growing. An important point in inflation is time and continuation of general price level (Tafazoli, 1997, p.431). Keynes believes inflation takes place when consumables demand is more than their supply.

This exceeding demand makes an inflation gap so that the price goes up to the level of filling the gap. The distinctive point between classic economists (advocates of money value theory) and Keynesians changes have no effect on real economic variables; production is placed in full employment level. So, production is determined according to real economic factors. But in Keynesian model, money can affect production (Tashkini, 2004. P.10). its supply as an inflation reason has drawn a great attention since freedman's approach (1968). In the literature, the relation between budget deficit and inflation is important in many respects: budget deficit increases total expenditure and price level because economy involves in full employment. (Dwyer, Gerald P. 1982, 315-329) Keynesian approach supports the positive relation between budget deficit and actual demand. In economic literature there is a theory called demand management policies about unemployment which is mainly based on keynz theory. It states that unemployment can be affected by increasing total production demand or increasing money supply many economists believe when economy confronts high rate of unemployment and capital exploitation is low, growth in total production demand usually leads to unemployment reduction, and decrease in demand usually leads to higher unemployment. (World Economic Outlook, 1995, 74-75) Low inflation rate is an objective of economic poly like low unemployment rate.

Hypothetical Framework



Budget deficit may have direct effect on Pakistan economy.

H_0 : Budget deficit doesn't have a straight cause on Pakistan economy.

H_1 : Budget deficit has a straight cause on Pakistan economy.

Evidence from literature

Shams et al., (2013) investigated the long run relation of fiscal determinants and inflation in

Pakistan. In this, data from 1975-2008 is used and Johnson con integration approach applied to check the long run relationship of local credit GDP, exchange rate and inflation. In long run this relation exists and ECM shows the short run equilibrium take place to equalize it, the model in long run to check the model stability CUSUM and CUSUM Q diagnostic tests used by them. Anwar. M & Ahmad. M (2012) describes relationship between Budget deficit, democracy

and cabinet size for Pakistan economy in time of short and long run by involving some political factors which determine the budget deficit. For this (ECM) error- correction model and autoregressive distributed lag (ARDL) framework is used to annual data for the time period of 1976 to 2009. The result shows that this relation exists and large government add more budget deficit. Democracy can reduce the budget deficit while result shows it has weaker impact in Pakistan case for the sample period.

Shehzad. F et al., (2012) found the impact of deficit on stock prices. They changed when deficit changed and if so, what is direction. For checking this relation long run annual data from 1990 to 2010 for Pakistan and India has been used and Augmented Dickey Fuller (ADF) unit root test, Johnson co integration technique and Granger causality test applied. The findings shows that there is positive long term causal relationship between budget deficit and stock prices due to high development expenditures in Pakistan while in case of India this relationship is negative in long term because of high current expenditures, So, it is suggested by this study that the government of both countries should adopt solid tactics for the improvement of budget deficit because stock market performance effected by the economic condition of a country along with other important factors.

Gul.S & Iqbal.H (2014) has focused on the impact of money supply on inflation in Pakistan. Data is used in it support the hypothesis. To check the inflation data from 1990-2010 have taken and growth of inflation shown by the time from 2000-2009.

Kakar.K.Z (December 2011), said in his research paper that fiscal policy is very significant for balanced economic growth in Pakistan and fiscal policy measures in long run more, rather than in short run. But in sort run economic development can be attained by controlling interest rate and government expenditure at the cost of inflation. But a policy can be affected by speed of growth process and time series data is used for the period of 1980-2009. Co integration and error correlation techniques apply for determine the direction of causality Granger test was used.

Serfraz.A & Anwar. A (2009) stated that all the aspects of financing deficit are directly or significantly correlates with inflation in Pakistan.

For this proof, they took long run data of Pakistan from the fiscal year of 1976 to 2007 using the keywords of Fiscal Imbalances, Money supply, Borrowing and inflation in Pakistan with the help co integration test.

Ahmed.H (2007) found in this study that fiscal deficit has strong influence on inflation in Pakistan. Results also shows that in long run there is 1% increase in fiscal deficit led to a 0.447% increase in seignior age which resulted in price like of 0.5156%.

Khan, Bukhari and Ahmed (2007) examined that through money producing fiscal deficit in financing create inflationary pressure. On the other side, if there is increase in government borrowing from central bank it leads to serious outcomes.

Agha.A & Khan .S (2006) investigated in this paper about the long run relation of inflation and fiscal indicators in Pakistan by taking the data form fiscal year (FY) 1973 to FY 2003. Quantity theory of money is used here and Johnson co integration analysis, result shows that inflation is not only factor which is related to create fiscal imbalances but also a source to generate fiscal deficit, effect of real GDP and exchange rate are exogenous variables. So in Pakistan, fiscal sector is the dominating part in setting price movements.

Alavirad & Athawale (2005) found the determinants of inflation in Islamic Republic of Iran by using annual data from 1963-1999. In the Islamic Republic of Iran, they found that in the long run budget deficit has significant impact on inflation rates. In short run budget deficit and liquidity as compared to long run have less effect on price levels the estimated value - 0.2 of co efficient of error correction which shows relatively slow speeds.

Goharian and Nazari's survey (2002) reveals a controversial relation between liquidity and employment in economy. Jafari Samimi etal (2006) found la long term negative relation between budget deficit and economic growth and between inflation and economic growth, while a positive meaningful relation exists between inflation and growth in money volume and oil income-Bonato (2007) concluded that money growth rate leads to inflation even in short term. Monjazez (2006) emphasizes neutral effect of money on production in long term. It is also

focused that inflation has a neutral affect on production as a nominal variable, and short term money growth really affects inflation. Harberger (1963) starts in his research on Chil'e economy that a direct relation exists between general price level and production level, and money growth increases general price level. Aghevli and Mohsinkhan's survey (1987) on Indonesia economy indicates that money extension is affected by inflation, rate through cabinet budget, and a cause-effect relation between money supply and price level is acknowledged Vamvoukas (2000) states there is a positive meaningful relation between actual GDP, money demand, budget deficit, money demand, budget deficit, and inflation rate in Greece economy. The findings of Salman Saleh (2003) show that according to Keynzian model there is a positive meaningful relation between budget deficit and interest rate, and budget deficit may lead to inflation because of national income deficit and money supply increase. Boariu and Bilan (2007) state in their research on the effect of financing budget deficit in contemporary economy that if governments seek supplying their budget deficit through increasing money supply, the reason will be higher inflation rate. Makochekanwa's survey on Zimbabwe economy (2008) reveals a positive relation between budget deficit and inflation because of increase in monetary base. Carp and Vasiliu's experimental study throughout Europe (2010) shows if investment rate is fixed, and average budget deficit decrease of 0.673 percent will lead to one percent increase in unemployment rate. Gherghina et.al (2010) compares Romanian economy with other members of EU and finds a decrease of budget deficit policy in 2000 which has led to inflation rate reduction proper with budget deficit reduction. Rana Ejaz Ali Khan et al (2011) survey on Pakistan economy reveals more unemployment, unbalanced income and increased inflation due to budget deficit reduction. Titan et.al (2011) state in their survey on Romania economy that budget deficit or economic activities reduction is associated with more inflation and unemployment, and public income reduction causes more, inflation unemployment.

METHODOLOGY

The existing research is applied in view of scope, and retrospective and deductive in view of methodology. The theoretical structure of the research is based on Keyn's theory. Based on case studied data collected in time series, the hypothesis is defined as mathematical equations and analyzed by statistics. Here, 3 models for estimating required functions and multi-variable linear functions were applied to measure the effect on dependent ones. To estimate the considered parameters, OLS, and LS square minimum methods were used together with Eviews 5/1 and

SPss17 programs. The tables show the result of linear regression, correlation coefficients, Watson Camera test statistic, Fischer test statistics, T Test statistics. Variance analysis, and other statistics and coefficients which shows insurance level of 95% or 0.05 error between budget deficit and inflation unemployment. The models are:

1- Vamvoukas relation of budget deficit and money demand (2000).

$$Mt = B0 + BRGNP + B2 INTR + B3 BDFF + B4 INFL + B5 GF + B6G + B7 Mt-1 + Ut$$

Mt= overall definition of money with actual prices;

RGNP= GDP growth to fixed prices

INTR= average of one-year-bonds nominal interest rate

BDFF= level of families general expenditure

INFL= calculated inflation rate through consumer price index

GF= Goods and services purchase by government with fixed price

GT= remitted payment with fixed price by government

Mt-1= one-year pause money

Ut= Model disorder sentence

2- Azizi (2006) survey on the relation between budget deficit and inflation.

$$Y = B0 + B1 X1 + B2 X2 + B3 X3 + B4 X4 + B5 X5 + U1$$

$$CPI = 2/63 + 1/01CPI(-1) - 0/002BD(-1) + 0/0003YO(-1) + 0/01GM - 1/6DUM$$

3- The relation between economic growth and budget deficit; Nelson and Singh's relation between inflation unemployment; in Jafari Samini et.al (2006).

$gGDP = a_0 + a_1gBD + a_2gGTR + a_3gPUIN + a_4gPVI$
 $N + a_5gEMP + a_6INF + U$
 $gGDP$: economic growth (GDP changes with
 base and fixed price (1997)
 gBD = growth in budget deficit

$gGTR$ = growth in government tax revenue
 $gPUIN$ = growth in public investment expenses
 $gPVIN$ = growth in private investment
 $gEMP$ = growth in employment
 INF = inflation

Results and findings

Table 1: Results of estimating function between budget deficit and inflation

Name	variable	Value of estimated coefficient	Prob
Width from origin	B0	3/17	0/05
Budget deficit	BD	0/025	0/03
INF rate of last run	INF(-1)	0/023	0/02
Dummy war change	DUM	1/4	0/03
R Square		0/91	
F-Statistic		22/50	0/02
Durbin-Watson stat		1/97	

$$INF = 3/17 + 0/025 BD + 0/023 INF(-1) + 1/4 DUM$$

C	BD	INF(-1)	DUM	DW	F	R2	R2
T1= 1.76	T2=3.78	T3= -4.83	T4=2.43	1/97	22/50	89	91

According to estimated regression shown on table 1, all parameters coefficient are meaningful (T1 to T4 are all over 2), so the existing regression is efficient and valid. R2 and F=22.50 show that estimated model is meaningful and valid. (R2) coefficient shows that 91% of changes in dependent variable (INF rate) are due to changes in independent variables and the remaining 9% relates to other factors. The above table reveals

that if budget deficit increases for 1%, inflation rate will increase for 25%. If inflation rate of last run has an increase of 1%, present inflation rate will increase for 23%. So, there is a direct relation between inflation rate of last run and present run, and the relation has a ratio of 1 to 4. In case of war inflation rate increases up to 1.4% in a run. So, there is a direct relation between budget deficit, dummy variable, and inflation rate.

Table 2: Results of estimating function between budget deficit and unemployment

Name	variable	Value of estimated coefficient	Prob
Width from origin	B0	2/25	0/002
Budget deficit	BD	-0/13	0/02
INF rate of last run	INF(-1)	0/04	0/01
Dummy war change	DUM	1/11	0/04
R Square		0/89	
F-Statistic		37/02	0/04
Durbin-Watson stat		2/02	

$$UE = 2/25 - 0/13 BD + 0/04UE(-1) + 0/11 DUM$$

C	BD	INF(-1)	DUM	DW	F	R2	R2
46 T1= 3	55/T2=4	93/T3= 2	13/T4=5	2/02	02/37		89

According to the estimated regression on table 2, all parameters coefficients are meaningful (T1 to T4 are all over 2), so the present regression is

efficient and valid. R2 and F=37.02. Show that estimated model is meaningful and valid. (R2) coefficient shows that 89% of changes in

dependent variable (INF rate) are due to changes in independent variables and the remaining 11% relates to other factors. The above table reveals that if budget deficit increases for 1%, unemployment rate will decrease for 13%. If inflation rate of last run has an increase of 1%, present unemployment rate will increase for 0.04%. In case of war unemployment rate increases up to 0.11% in a run. So, there is a

reverse relation between budget deficit, and unemployed rate.

Budget deficit has direct effect on Pakistan economy.

H_0 : Budget deficit has no direct effect on Pakistan economy.

H_1 : Budget deficit has direct effect on Pakistan economy.

Variables Entered/Removed (1)

Model	Variable Entered	Variables Removed	Method
1	BD ^a		

a. All requested variables entered

b. Dependent Variable: INF

Model Summary (2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.821 ^a	.674	.012	8.59302	.012	434.313	4	295	.000	2.038

a. Predictors: (Constant), BD

b. Dependent Variable: INF

ANOVA(3)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	99.737	1	99.737	21.351	.025 ^a
Residual	2141.359	29	73.840		
Total	2241.097	30			

a. Dependent Variable: BD

b. Predictors: (Constant), INF

Coefficients(4)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	19.975	1.755		11.380	.000
BD	7.6355	.000	.211	3.162	.025

. Dependent Variable: INF

According to the above table the correlation coefficient value between budget deficit and inflation is 82.1 which show a direct and effective relation between these 2 variables. Moreover, the coefficient 67% shows that 27% of changes in dependent variable are due to changes and effectiveness of independent variable (budget

deficit). Considering (T1=11.38) and (T2=3.16), the dependent variable coefficient is confirmed. In addition, according to (sig=0.02) and (sig=0.00) we can say that: " $H_0: B_1 = 0$ " with over 97.5 assurance is rejected. So, budget deficit has a direct effect on inflation.

Budget deficit has a direct effect on inflation and unemployment in Pakistan economy.

H₀: budget deficit doesn't have a direct effect on inflation and unemployment in Pakistan economy.

H₁: budget deficit has a direct effect on inflation and unemployment in Pakistan economy.

Variables Entered/Removed (1)

Model	Variable Entered	Variables Removed	Method
1	BD ^a		Enter
2	BD ^a		Enter

a. Dependent Variable: INF

b. Dependent Variable: UN

Model Summary (2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.811 ^a	.656	.812	8.59302	.045	1.351	1	29	.255	2.038
2	.734 ^a	.532	.616	1.76865	.018	.528	1	29	.473	1.968

a. Predictors: (Constant), BD

b. Dependent Variable: INF

ANOVA(3)

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	99.737	1	99.737	18.351	.025 ^a
		2141.359				
	Residual	2241.097	29	73.840		
			30			
	Total					
	Regression	1.652	1	1.652	16.528	.043 ^a
	Residual	90.715	29	3.128		
	Total	92.368	30			

a. . Predictors: (Constant), BD

b. Dependent Variable: INF

Coefficients(4)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.975	1.755	Beta	11.380	.000
	BD	7.6355	1.478	.211	5.162	.032
2	(Constant)	12.607	.361		34.896	.000
	BD	9.8286	2.079.	.134	4.727	.0173

a. Dependent Variable: UN

According to above tables, the value of correlation coefficient between budget deficit and inflation is 81.1% which shows a direct and effective relation between these 2 parameters. Also, the determination coefficient 65% shows that 45% of changes in dependant variable (inflation) are due to changing and effectiveness of independent variable (budget deficit). On the other hand, the value of correlation coefficient between budget deficit and unemployment is 73.4% which reveals a direct and effective relation between these 2 parameters. Also the determination coefficient 53% shows that 53% of changes in dependant variable (unemployment) are due to changes and effectiveness of independent variable (budget deficit). So, budget deficit has a direct effect on inflation and unemployment. Based on ANOVA (3) total squares, df (degree of freedom), average squares, and Fischer Statistics ($F=18.35$) and ($F=16.53$), and meaningfulness level of regression (0.0250), (0.043) which means the hypothesis 'regression is not meaningful' is rejected with more than 97.5% and 95.7% assurance, H_0 is rejected and the regression is meaningful. Coefficients (4) show independent variable coefficient, model standard deviation, standard deviation, T test Statistics, and the meaningfulness level of estimated regression. So, the values of ($T_1=5.16$) and ($T_2=4.72$) of independent variable coefficient (budget deficit) are confirmed. Also, based on the found meaningfulness level of ($\text{sig}=0.01$) and ($\text{sig}=0.03$) we can say: " $H_0:B_1=0$ " is rejected with more than 97 and 99 percent certainty. So, budget deficit has a direct and meaningful effect on inflation unemployment.

Discussion and Conclusion

The research results show that not only budget deficit increase cause more inflation rate up to 25%, but also the inflation rate affects next year inflation up to 23%. Also, a non-structural element (war) can increase inflation rate of a period for 1.4%. So, there is a direct relation between budget deficit and dummy variable, and inflation rate. 6984 Budget deficit increase brings us 13% reduction of unemployment rate in the country. This budget deficit has a reverse effect on its next year unemployment rate and causes 0.04% growth in unemployment rate. Moreover, if the country is involved with war, unemployment rate will increase up to 11% in a period. Therefore, a

reverse relation exists between budget deficit and unemployment. The results show that budget deficit has a meaningful effect on inflation and unemployment in Pakistan economy. Therefore, the findings reveal us that Keynz theories are dominant in Pakistan economy.

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