



**RESEARCH PAPER**

**Political Instability and the Budget Deficit in Economy:  
A Case of Pakistan**

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**ABSTRACT**

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*This paper aimed to explore the impacts of political instability on budget deficit in the economy of Pakistan. Budget deficit is harmful for every economy and is responsible for high inflation in the world especially in developing and third world countries. Both qualitative and quantitative techniques have been used. Budget deficit, Trade deficit, political instability and exchange rate are used as variables. Time Series Test, Uni Root Test, Johansen co integration technique and error correction model were used to analyze the data to reach the required results. Unstable political environment reduced investment and the speed of economic development. Therefore, Political stability play a vital role for the stable polices for budget, under the unstable political conditions, political polarization and coalitions cause some lags in reform processes which, in turn result in budget deficits. This study recommends that government should maintain the political stability which will encourages the domestic and foreign investors. Improved business and economic conditions will be helpful in reducing the budget deficit.*

**Introduction**

The extent of budget deficit is most debated issue in economics across the world. High and unstable budget deficit may be harmful to

welfare, responsible for high inflation, low growth, and increase in supply of money in the economy and current account deficit (Chaudhary & Abhe 1999). Higher budget deficit cause more changes in government spending and taxation system, therefore, it is expected that high level of budget deficit is positively associated with budget deficit instability. Developing countries have ineffective taxation and spending system and are more prone to budget deficit and more expose to social and political conflicts (Javid, 2000). Thus constant budget deficit can obstruct the economic growth and development of economy.

Budget deficit initially consider as a simply macroeconomic phenomenon, but after 1970s due to emergence of political economics, researchers has consider this issue both from economic and political perspective. The fact that many industrialize countries has been facing substantial budget deficits due to first the oil crisis in 1973 and those deficits increase constantly over the decade of high growth while the economic theory suggest those deficits should be reduced during more successful times. As a result, debt level has been increasing gradually over the same period of time, and interestingly deficits and debt level vary in size among different countries even facing same economic shocks.

In most developing countries monetary expansion associates with the heavy government borrowing from banks as well as from other international resources to finance large budget deficits it is one of the key factor that contributes to balance of payments disequilibrium. In those countries, government depends upon the deficit financing institutions due to inability to mobilize its domestic resources, relatively narrow tax base system, and infeasible tax structure (Tanzi, 1982). In developing countries capital markets are also underdeveloped and institutions determine the interest rates which often creates a financial environment that leads towards the expansion in money supply.

In addition gradually increasing budget deficit and its instability is also a major problem for many developed and developing countries for a number of reasons. First, due to high deficit instability it is not possible to predict timing and the magnitude of fiscal policies and it will generate inefficiency in economic decision making. Second, the budget deficit may also affect the instability in government spending and distortions are created to meet fluctuations in government spending. When government spending instability

depends on budget deficit instability, the quality and efficiency of the government services like health, education may also be reduced. Third, the higher budget deficit may divert investment towards the short term investment projects and leads towards irrevocable human capital losses. High budget deficit instability may also lead to high instability of interest rates which also affect investments. High and unstable budget deficit may also increase the level of inflation in economy and also be a cause of its instability.

Pakistan has experienced constant budget deficit since independence, with the exception of few years. Size and trend of budget deficit in Pakistan is quite unsatisfactory. Pakistan annual fiscal deficit has constantly been ranged around 6% of GDP since 1990. In the Nawaz Sharif era budget deficit was 6.3% of GDP which achieved in Musharaf era with 5.4% of GDP. The average budget deficit in Pakistan people party regime from last four is 6.5% of GDP. Although the growth remains impressive for few years but it was accompanied with budget deficit and increasing public debt. Pakistan's budget deficit for the fiscal year that ended on June 30- 2012 was 6.6 % of GDP higher than last year of 5.3 % of GDP.

#### **The Review of Literature**

The literature review in general is to guide researchers for getting a better understanding of methodologies which have been used in available previous studies. Description of various available estimation procedures and the data set, clear interpretation and the understanding of the conflicting results. A brief review of some studies about budget deficit and its political determinants is as follows.

Rehman (2012) examined relationship between budget deficit and economic growth in context of Pakistan by using time series data from 1979-2009(economic survey of Pakistan) and applying the unit root test and OLS model, conclude negative impact of budget on economic growth. According to him this negative impact was that because of government had not enough revenue to meet their expenses in long run. And other variables are, inflation has a negative impact on economic growth, increasing inflation also effect interest rate which negatively effects economic growth. However, government should take some positive steps to control it by increasing direct taxes and reforms in tax system that increase revenue to the government.

Mughal and Khan (2011) examined fiscal deficit generated inflation in Pakistan by using the secondary data of 1960-2010 and applying co-integration analysis. According to this study, inflation in Pakistan is largely recognized to unsustainable fiscal deficit and there exist a positive relationship between budget deficit and inflation. It concludes that fiscal deficit display a strong and positive effect on inflation in Pakistan and there is need of coordination between fiscal and monetary policy to reduce the inflation. However, to control this deficit and inflation government should strengthen Central Bank independence and its monetary policy objectives.

According to this study this discipline comes through enhancing institutional check and balance and through better market mechanism. Unfortunately, in Pakistan bond market mechanism showed a negative trend from the last two decades (SBP). However, this study concludes that an active bond market can play an important role in bringing out fiscal policy discipline and long term solution can be found by development of political institutions and by improving governance (Uppal, 2011).

Rauf and Khan (2011) define relationship between trade deficit and budget deficit in Pakistan by using time series data of 1980-2009 (economic survey of Pakistan) and applying OLS model. According to this study trade deficit is the main cause of budget deficit and consistency in trade and budget deficit lead to borrowing internally and externally which will be harmful for future generation. However, to control budget deficit trade deficit should be minimized by increasing export and decreasing imports. Government should have different exchange rates for imports and exports.

Mukhtar and Zakaria (2010) explained relationship between budget deficit and inflation by using cointegration analysis in Pakistan. According to this study consistent higher budget deficit will lead to increase in high inflation. However, this study concludes that in long run inflation is not correlated with budget deficit but only to the money supply and money supply has no fundamental correlation with budget deficit.

Anwar (2009) had done a wonderful job in his paper and concluded that there existed a long run relationship between the budget deficit and inefficient size of the government. However he could not explain what the efficient size of government should be. According to him democracy could helpful in reduction of budget deficit, but it had not significant impact in Pakistan. Budget deficit

caused low growth and inflation, in case of Pakistan this deficit is inflationary because it would lead to increase in supply of money constantly.

Bayar (2009) examined budget deficit in European Union from population and country perspective many industrialized countries have to face deficit due to high reflections in international oil prices (1973). This study analyzed two ways, firstly, main emphasis on politically oriented variables such as political stability, size of government, destruction of government, multi coalition government and institutional factors, secondly, political business cycles are there in sequence of budget deficits.

Lucotte (2009) explained the impact of central bank independence on budget deficit in developing countries by using panel data 1995-2004 (data sample developing countries) indicated negative relationship between central bank independence and budget deficit. According to this study, the turnover rate of central bank governors was positively associated with primary budget deficit. It indicated that the higher the independence of CBI, the lower budget deficit was. However CBI must promote and consolidate in developing countries to reduce budget deficit and to strengthen the fiscal policies by exercising a discipline influence on political decision makers.

Chaudhry and Munir (2009) defined relationship between low tax to GDP and higher budget deficits in case of Pakistan by applying time series econometric technique 1979-2009. According to this study low tax revenue was due to narrow tax base system, foreign aid, more depend on agricultural sector, low level of literacy rate, unequal distribution of income and more focus on indirect taxes. However tax to GDP ratio increased by sound economic policies, boosting openness, minimizing income inequality, more focus on direct taxes, controlling external debt and over lifting tax exemptions on agricultural income.

Wehner (2009) had founded a relationship between cabinet size and budget deficit in context of 60 different countries and cross national study of (1975-1988) by using an additive model. According to this study there is a positive relationship between exceeding cabinet structure and budget deficit. This study analysis that as the government changes and number of spending ministers increases then budget deficit will increase constantly in that country. However,

to control this deficit number of spending ministers should be minimize and to be more focused on determinants of cabinet structure.

Agha and Khan (2009) investigated the long run relationship between fiscal indicators and inflation in Pakistan from fiscal year (1973-2003) by using co-integration analysis. According to this study inflation in long run was not only associated with fiscal imbalances but also those resources were used to cover up these imbalances; inflation was caused by government borrowings from banks for budgetary sports to cover up the fiscal gap. Therefore, Pakistan's fiscal sector is the dominant factor in explaining price instability. However, Pakistan government should have implement sound and stable policies to remove themselves from the crises of fiscal deficit.

Aisen and Hauner (2007) examines budget deficit and interest rate in three different ways, advanced economies, emerging economies and at large emerging market structure by applying GMM system. According to this study, there is high significant positive effect of budget deficit on interest rate and this effect is varies from different country groups and its time periods. Most of its effect on emerging economies that budget deficits are high and mostly financed from domestically, trade openness are low, interest rate more liberalized, domestic debt is high and financial resources are low. However, they suggested that fiscal policy is more effective when budget deficits and debts are low and financial debt and openness is higher.

Diokno (2005) explained the economic and fiscal policy determinants of budget deficits in Philippine economy by applying 2SLS model and using time series data of (1981-2005). According to this study the imbalances is because of investment in high public infrastructure and low tax revenue efforts. However this study analysis that policies should directed in a way that they can be revenue oriented.

George (2000) defines the relationship between interest rate and budget deficit by using time series data and applying the co-integration and ECM methodology in Greece economy. The object of this study is to check the Ricardian equivalence hypothesis and Keynesian proposition. According to this study Keynesian model had identify a positive relationship between interest rate and budget deficit, it rouses output and employment, increasing up interest rate and crowding out of private investment. While Ricardian equivalence

shows no significant impact of budget deficit on interest rate it simply implies taxes in future.

Chudhary and Shabbir (2000) explained the macroeconomic impacts on budget deficit in Pakistan by using time series data of 1965-1999 and apply the 2SLS model. According to this study increasing budget deficit is financed through expansion in domestic credit, access supply of money over the demands and it will lead to foreign reserve's outflows. To control these swings in money supply, reserves and prices, government should control short term devaluations, reduced domestic credit and stabilize the value of its external currency. However, the resources that are used to control these budget deficits are the key factors effecting BOP equilibrium.

In this study budget deficit expose high income and large budget to GDP ratio are related with budget instability. The impact of more external shocks makes budget deficit more unstable however countries with higher population growth have less explosive budget deficits. According to this study political stability and improvement in economic conditions, institutional factors and democratic regimes reduce budget deficit. Higher budget deficit cause more changes in government spending and taxation system, therefore, it is expected that high level of budget deficit is positively associated with budget deficit instability. Developing countries have ineffective taxation and spending system and are more prone to budget deficit and more expose to socio and political conflicts (Javid, 2000).

Ishfaq and Chaudhary (1999) explained high budget deficits and debt crises in Pakistan. According to this Pakistan annual fiscal deficit is around 6 % (SBP) of the GDP and to cover this deficit government increases borrowing both from external and internal resources to recover that gap. However to eliminate from this situation, it is quite difficult to remove in short term. Government should have some favorable long term policies that generate output and employment in the economy.

The literature review is conducted to obtain a brief view about past studies which has been already done, that what are their findings. In conclusion main results were that a developing country which has prevalent tax corruption, political instability, burden of debt, high rate of inflation, increasing exchange rate have to face the problem of terrorism would face a higher level of budget deficit. This study is an addition to above literature review which should shed

light on different aspects related to relationship between budget deficit and its political determinants. The present study is the attempt to examine the above relationships in case of Pakistan economy.

### **Methodology, Analytical Framework and Model Specification**

#### **Statement of Problem**

Do political determinants have significant impact on budget deficit in Pakistan?

#### **Testable Hypothesis**

For the study the Null and Alternatives hypothesis are given as;

**H<sub>01</sub>:** Political instability has no significant impact on budget deficit in Pakistan.

**H<sub>02</sub>:** Political instability has a significant impact on budget deficit in Pakistan.

#### **Procedure, Method and Conceptual Framework**

The aim of study is to check the impact of political instability on budget deficit in Pakistan. For this purpose Budget deficit, Trade deficit, political instability and exchange rate are used as variables.

#### **Data Source**

This study uses annual time series data on political variables of budget deficit from 1980 to 2014. Data has been collected from different sources like from Economic Survey of Pakistan, State Bank of Pakistan, International monetary fund, International Country Risk Data Guide (ICRG) and other statistical institutions. From these institutions we try to take the Time series data for analysis.

Political instability is the main or control variable because this study determines political determinants of budget deficit. In Pakistan political stability is a serious concern too much fluctuation in our political system, long term policies cannot run smoothly due this we have to face the problem of budget deficit. Exchange rate is also a serious concern for budget deficit constant increase in exchange rate will lower the price of our currency and we have to pay more on debt. Pakistan investment to GDP ratio is quite low, lower the investment, lower the growth, lower the income and lower the revenues and hence the cause of budget deficit.

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<b>S. No</b>	<b>Variable</b>	<b>Description / Source</b>
1.	<b>BD</b>	Data of budget deficit is taken from economic survey of Pakistan 2014
2.	<b>ER</b>	Data of exchange rate is taken world development indicators published by World Bank.

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3.	TD	Data of Trade deficit is taken from economic survey of Pakistan 2014
4.	PI	Data if political instability is taken from Polity IV project published by Systematic Peace.

### Analytical Framework

#### Time Series Test

In time series it is always assumed that data should be stationary. If data is non stationary then we cannot apply the OLS estimation technique. This study uses time series data, then it is prerequisite condition to check unit root in model.

#### Unit Root Test

To check stationary first and the widely popular test is the Unit root test. Its start as follows;

$$Y_t = (\rho Y_{t-1} + u_t) \quad -1 \leq \rho \leq 1 \quad (A)$$

$u_t$  Is the white noise error term. If the  $\rho = 1$  then there is a case of unit root, and facing the random walk model with drift, which is known as the no stationary stochastic process. If simply regress the  $Y_t$  on the lagged value of  $Y_{t-1}$  and then if the estimated  $\rho$  is equal to 1 then  $Y_t$  is the nonstationary. This is we can say the basic theme behind the unit root test.

This can also manipulate (A) as follows: subtract  $Y_{t-1}$  from both sides of (A) in order to obtain

$$\begin{aligned} Y_t - Y_{t-1} &= \rho Y_{t-1} - Y_{t-1} + u_t \\ &= (\rho - 1)Y_{t-1} + u_t \\ \Delta Y_t &= \delta Y_{t-1} + u_t \end{aligned} \quad (B)$$

Where  $\delta = (\rho - 1)$  and  $\Delta$  as usual shows the first difference. By practicing the equation (B) estimate and test that if the null hypothesis is  $\delta = 0$ . If  $\delta = 0$ , then  $\rho = 1$ , that mean we are facing unit root and the time series data is no stationary.

If we start using the equation (B) this is in of the simple equation all we have to do is to take the first difference of  $Y_t$  and regress them on  $Y_{t-1}$  after that observe that if the estimated slope coefficient is zero or not. If the results are zero that means  $Y_t$  is no stationary. But if the results are non zero then conclude that  $Y_t$  is stationary.

#### Johansen Co Integration Technique for Model

The innermost idea for co-integration test is related to the functional forms of model. This is based on the long run relationship of one endogenous variable with other exogenous variables. More clearly, co-integration defines the presence of long run stable relationship between the variables. If the time series variables are non-stationary at I (0) then they can be integrated at I(1) order of integration and their first differences are stationary. These variables can be co-integrated if they have one or more linear combinations among themselves and they are stationary. Nevertheless, if these variables are co-integrated then there occurs a constant long-run linear relationship among these variables.

The co-integration method was first used by Engel and Granger (1987). Afterwards, it was additionally developed and changed by Stock and Watson (1988), Johansen (1988, 1991, 1992, 1995) and Johansen and Juselius (1990). This test is very easy and useful to check the long run equilibrium relationships between the explanatory variables. In this study, Johansen maximum likelihood (ML) approach is pragmatic to examine the co-integration among variables. The main reason is that Johansen co-integration is the most stable one. The main benefit of this approach is that, one can estimate several co-integration relationships among the variables at the same time. Two statistical tools are used for co-integration, namely the Trace (Tr) test and the Maximum Eigen value ( $\lambda$  max) test. The estimation procedures of these statistical tools have been explained as under:

Let us suppose  $X_t$  be a ( $n \times 1$ ) vector of variables with a sample of  $t$ . It is assumed that  $X_t$  seems to follow I(1) process that recognizes the number of co-integrating vector. This technique involves estimation of the vector error correction representation as following:

$$\Delta X_t = A_0 + \Pi X_{t-p} + \sum_{i=1}^{p-1} A_i \Delta X_{t-i} + v_t \dots \dots \dots (3.15)$$

In the above equation (3.15), the vector  $\Delta X_t$  and  $\Delta X_{t-1}$  are variable integrated at I(1) order of integration. As a result, the long run stable relationship among  $X_t$  is resolute by the rank of  $\Pi$ , says  $r$ , is zero. In such context, equation (3.15) cuts to a VAR model of  $p$ th order. These have a tendency to conclude that variables in level are not having any co-integrating relationship. Instead, if  $0 < r < n$  then there are  $n * r$  matrices of  $\alpha$  and  $\beta$  such that

$$\Pi = rS \dots \dots \dots (3.16)$$

Where,  $\alpha, \beta$  are mostly used to measure the strong point of co-integration relationship and  $S'X_t$  is I (0). although  $X_t$  are I (1). In such an environment,  $(A_0, A_1, \dots, A_{p-1}, \Pi)$  is estimated through maximum likelihood methods, such that ' $\Pi$ ' can be written as in equation (3.16). Two steps approach is employed for estimation of all these parameters. Initially, we have to regress  $\Delta X_t$  on  $\Delta X_{t-1}, \Delta X_{t-2}, \dots, \Delta X_{t-p+1}$  and acquire the residuals  $\hat{u}_t$ . In the second step,  $X_{t-1}$  on  $\Delta X_{t-1}, \Delta X_{t-2}, \dots, \Delta X_{t-p+1}$  is regressed to obtain the residuals  $\hat{e}_t$ . After finding residuals such as ' $\hat{u}_t$ ' and ' $\hat{e}_t$ ', variance-covariance matrices are estimated.

$$\begin{aligned} \sum_{uu}^{\wedge} &= \left[ \frac{1}{T} \right] \sum_{t=1}^T \hat{u}_t \hat{u}_t' \\ \sum_{ee}^{\wedge} &= \left[ \frac{1}{T} \right] \sum_{t=1}^T \hat{e}_t \hat{e}_t' \\ \sum_{ue}^{\wedge} &= \left[ \frac{1}{T} \right] \sum_{t=1}^T \hat{u}_t \hat{e}_t' \end{aligned}$$

The maximum likelihood estimator of ' $\beta$ ' can be measured by solving:

$$\begin{vmatrix} \sum_{ee}^{\wedge} & -\sum_{eu}^{\wedge} \\ \sum_{eu}^{\wedge} & \sum_{uu}^{\wedge} \end{vmatrix} \text{INV} \begin{vmatrix} \sum_{uu}^{\wedge} & \sum_{ue}^{\wedge} \end{vmatrix} = 0$$

With the Eigen-values  $\hat{\lambda}_1 > \hat{\lambda}_2 > \hat{\lambda}_3 > \dots > \hat{\lambda}_n$ . The normalized co-

integrating vectors are  $\hat{S} = (\hat{S}_1, \hat{S}_2, \dots, \hat{S}_n)$ , such that  $\hat{S}' \sum_{ee}^{\wedge} \hat{S} = I$ .

Moreover, one can estimate the null hypothesis that  $r = h, 0 \leq h < n$  against the alternative one of  $r = n$  by obtaining the following statistics as given below:

$$\lambda_{\text{trac}} = L_A - L_0$$

Where,

$$L_0 = -\left(\frac{Tn}{2}\right) \log(2\Pi) - \left|\frac{Tn}{2}\right| - \left(\frac{T}{2}\right) \log \left| \sum_{uu}^{\wedge} \right| - \left(\frac{T}{2}\right) \sum_{i=1}^h \log(1 - \hat{\lambda}_i)$$

and

$$L_A = -\left(\frac{Tn}{2}\right) \log(2\Pi) - \left|\frac{Tn}{2}\right| - \left(\frac{T}{2}\right) \log \left| \sum_{uu}^{\wedge} \right| - \left(\frac{T}{2}\right) \sum_{i=1}^n \log(1 - \hat{\lambda}_i)$$

Hence

$$L_A - L_0 = -\left(\frac{T}{2}\right) \sum_{i=1+h}^h \log(1 - \hat{\lambda}_i)$$

$$2(L_A - L_0) = -T \sum_{i=r+1}^h \log(1 - \hat{\lambda}_i)$$

Where  $\hat{\lambda}_{r+1}, \dots, \hat{\lambda}_p$  are the calculated p-r smallest Eigen-values. The null hypothesis can be examined. The null hypothesis is that there are at most r co-integrating vectors among variables. Simply, it is said that it is the number of vectors that is less than or equal to r, where r is 0, 1, or 2, and so on. Like the upper case, the null hypothesis will be examined against the general alternative one. The  $\lambda_{\max}$  statistics is give below:

$$\lambda_{\max} = -T \log(1 - \hat{\lambda}_{r+1}) \dots \dots \dots (3.17)$$

The hypothesis of co-integrating vectors is being examined against the alternate hypothesis of r + 1 co-integrating vectors. As a result, hypothesis of r = 0 is tested in contradiction of the alternative hypothesis of r = 1, r = 1 against the alternative r = 2, and onward. It is well known that the co-integration tests require lag length. The Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC) have been used to select the number of lags on the basis of minimum values of both measures.

**Error Correction Model**

The above model provided the empirical results of the long run relationship among the variables i.e. the variables are co-integrated; there is an error correction representation. So this study estimated mentioned below error correction model.

$$\Delta BD = S_1 + \sum_{t=1}^n S_2 \Delta BD_{t-1} + \sum_{t=1}^n S_3 \Delta TD_{t-1} + \sum_{t=1}^n S_4 \Delta ER_{t-1} + \sum_{t=1}^n S_5 \Delta PI_{t-1} + \gamma ECM_{t-1} + \tilde{\epsilon}_t$$

If the long run relationship among the variables exists, it means that the variables under discussion move together over time and if any instability is occurred, it is corrected from the long run trend.

**Empirical results of the Study**

This section provided the interpretation of empirical results of the model, which explain the effect of political instability on budget deficit during the 1980 to 2014.

**Unit Root Results**

The first step in the time series empirical exploration is to inspect the persistence of the unit root in the time series data for escaping the problem of the spurious regression. Due to unit root problem, mostly time series data show the trend and they are named by non-stationary. They have a unit root at their level when their first difference is stationary. Furthermore, it is helpful to check the order of integration of all variables given in the model in order to select a suitable estimation technique to obtain significant and reliable empirical results.

Firstly, all independent and dependent variables were examined for the unit root over the period 1980-2014. Following table denoted to the consequences of the stationary test using ADF test with and without linear trend.

**Table 1 ADF Unit Root Results at the Level**

Variables	With trend	Without trend	Conclusion
	Test statistics	Test statistics	
BD	1.2178	3.8994	Non-stationary
TD	-2.8961	-2.0266	Non-stationary
PI	-1.7410	-1.7486	Non-stationary
ER	-0.5083	-0.9357	Non-stationary

The estimated results of the ADF test which is given in the Table.1, the values of ADF statistics of budget deficit are more than the critical values with different sign in case of without trend and without trend . That is why, the null hypothesis, that is, there exist problem of unit root, or in other words we can say there series has unit root problem. The results of the table 1 show that all other variables have unit root problem since the ADF statistics value is lower than critical value. This concludes that all series are non-stationary at their level.

**Table 2 ADF Unit Root Test Results for the first Difference**

Variables	With trend	Conclusion	Without trend	Conclusion
	Test statistics		Test statistics	
BD	-6.2246*	Stationary	-1.7891	Non-Stationary
TD	-4.3864*	Stationary	-4.4657	Stationary
PI	-5.4085*	Stationary	-5.4891*	Stationary

ER	-3.8710**	Stationary	-3.7979*	Stationary
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\*identified the significance level at 1 %, 5 and 10%

\*\* identified the significance level at 10%

The estimated results of the ADF test with trend and without trend at 1%, 5%, 10% level of significance which presented in the Table 2. The table consist of following variables unit root results Budget deficit, trade deficit, Exchange rate, and Political instability. The estimated result shows that value of ADF statistics of budget deficit are more than the critical values with same sign in case of without trend. That is why, the null hypothesis is rejected, that is, budget deficit is stationary at first difference with trend, or in other words we can say there series has no unit root problem. But budget deficit variable has unit root problem without trend, because the value of ADF statistics is lower than critical value. So there exist problem of unit root without trend in the budget deficit series. The result of the table 2 shows that all other variables have no unit root problem at first difference with and without trend since the ADF statistics value is higher than critical value at 1%, 5%, 10% level of significance. This concludes that all series are stationary at their first difference.

$$Y_t = S_0 + S_1BD + S_2TD + S_3ER_t + S_4PI + u_t \dots \dots \dots (4.1)$$

**Empirical results of Co-integration** After examining the stationary position of the time series, we have to study either these variables are co-integrated among each other or not. But for co-integration, there are two conditions to be satisfied: firstly, all variables should be non-stationary at their level; secondly, these variables must be integrated at the same order. Now the co-integration analysis is presented for the previously specified model that is given below:

To examine the co-integration between the variables, Johansen’s technique was applied. Firstly, appropriate lag length was selected for the feasible co-integration results. The Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC) were used to choose the lag length on the basis of minimum values of these both criterions. Two lag lengths were selected on the basis of -52.06, and -52.61 minimum values of AIC and SC criterion.

After the selection of the lag length, the next step was to find out the presence and number of the co-integrating vector among the

variables in the model. For this purpose, two tests were used: trace statistics test and maximum Eigen value test.

**Table 3 Johansen Co-integration Rank Test (Trace)**

Hypothesized		Trace	0.05	
No. of CE(s)	Eigen value	Statistic	Critical Value	Prob.**
None *	0.648566	65.89568	47.85613	0.0004
At most 1 *	0.506868	33.47791	29.79707	0.018
At most 2	0.292477	11.56159	15.49471	0.1792
At most 3	0.026609	0.836062	3.841466	0.3605

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

The empirical results of the trace statistics are presented in the above table 3. the estimated results of the trace statistics shows that 2 equations are co-integrating at 5 % level of significance because the value of the trace statistics are well above its critical values at the five per cent significance level.

**Table 4 Johansen Co-integration Rank Test Results (Maximum Eigen value)**

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigen value	Statistic	Critical Value	Prob.**
None *	0.648566	32.41776	27.58434	0.011
At most 1 *	0.506868	21.91632	21.13162	0.0387
At most 2	0.292477	10.72553	14.2646	0.1685
At most 3	0.026609	0.836062	3.841466	0.3605

Max-eigen value test indicates 2 co-integrating equations at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

The empirical results of the Maximum Eigen value are presented in the above table 4. the estimated results of Maximum Eigen value verify the results of trace statistics, shows that 2 equations are co-integrating at 5 % level of significance because the value of the Maximum Eigen value are well above its critical values at the five per cent significance level.

In the Johansen model, coefficients in the co-integrating vectors can be explained as the estimates of the long term co-integrating connection between the variables. The estimated parameters of these equations are interpreted in term of long term when they are normalized as given below:

**Table 5 Estimated Co-integrated Vector in Johansen Estimation**

Variables	Coefficients	t-statistics
TD	189.261	5.31022
PI	22652.85	2.119823
ER	17353.53	4.19815

$$BD_t = 766.268 + 189.2619TD_t - 22652.85PI_t + 17353.33ER_t$$

There are enamors literature are available with empirically estimated as well as theoretically explain the relationship between trade deficit and budget deficit. Theoretically and empirically there is controversial some researches focused on the positive relationship between trade deficit and budget deficit and some of them focused on the negative relationship of trade deficit and budget deficit? Evans (1988), Miller & Russek (1989), Dewald and Ulan (1990), Enders and Lee (1990) and Kim (1995) support the Ricardian equivalence that budget and trade deficits are not correlated. On the other hand Darrat (1988). Abell (1990), Zietz and Pemberton (1990), Bauchman (1992), Rosensweing and Tallman (1993). Bahmani-Oskooee (1992, 1995) and Vamvoukas (1999) argue in favor of the Keynesian proposition (the conventional view) that these deficits are closely linked and the budget deficit causes the trade deficit.

The estimated result of the study shows that there exist positive relationship between budget deficit and trade deficit which supported the Keynesian proposition. The empirical result shows that one unit change in the trade deficit lead to increase the 189.261 unit budget deficit which is statistically significant.

Economic growth and political stability are deeply interconnected; the uncertainty associated with an unstable political environment may reduce investment and the speed of economic development. So this shows that Political stability play a vital role for the stable polices for budget, under the unstable political conditions, political polarization and coalitions cause some lags in reform processes which, in turn result in budget deficits. The estimated coefficient of the political instability has significant at 1%, 5% and 10%

significance level. So  $H_0$  was rejected. It is also clear that political instability had exhibited a negative impact on the budget deficit. This shows that increase in political instability (governmental collapse) lead to decrease the budget deficit. The estimated co-efficient of Political instability revealed that on the average, 1 units change in the political instability index lead to increase 22652.85 unit in budget deficit.

The estimated coefficient of the Exchange rate (ER) also found statistically significant at 1% significance level, which shows that  $H_0$  could not be accepted. It stated that the exchange rate had discovered a positive impact on the budget deficit in the long time period. The empirical results show that one unit change in the exchange rate lead to increase the 17353.53 unit in the budget deficit.

**Table:6 The estimated results of Error Correction Model**

Dependent variable: D (BD)

Independent variables	Coefficients	Standard errors	t-statistics
Constant	-96982.2	-27035.1	[-3.58727]
$\Delta BD_{t-1}$	-0.37176	-0.46675	[-0.79649]
$\Delta BD_{t-2}$	-0.42606	-0.25657	[-1.66056]
$\Delta TD_{t-1}$	-16.7302	-11.7806	[-1.42015]
$\Delta TD_{t-2}$	21.00347	-10.6109	[ 1.97943]
$\Delta PI_{t-1}$	5674.026	-3884.45	[ 1.46070]
$\Delta PI_{t-2}$	7263.933	-4010.04	[ 1.81144]
$\Delta ER_{t-1}$	-9202.62	-7366.79	[-1.24920]
$\Delta ER_{t-2}$	9760.56	-12546.9	[ 0.77793]
ECMt-1	-0.09261	-0.03871	[ -2.39230]
<b>R-squared</b>	<b>0.655878</b>	<b>F-statistic</b>	<b>4.447213</b>

Table 6 presented the short run results of the budget deficit, trade deficit, political instability and exchange rate. The estimated results of the error correlation term (ECM) has negative sign and statistically significant. The negative sign shows that convergence take place if government reduces the trade deficit, political instability and exchange rate in short run.

The estimated coefficient of error correction term ( $ECM_{t-1}$ ) is -0.09261 which is significant with theoretically correct sign. The

coefficient of ECM 0.09261 shows that 9 percent of the convergences take place in one year, i.e. in the next year.

The  $R^2$  which is used for goodness of fit; value of  $R^2$  indicated that 65% variation in the budget deficit had been explained by the variables given in the model.

### **Conclusion and Recommendations**

This study empirically analyzes the relationship between budget deficit and trade deficit in the Pakistan economy. This study used annual time series data covering the period 1980-2014. The study presents the theoretical framework based on two hypotheses. The Ricardian equivalence neglects any relationship between the two deficits, and the Keynesian proposition confirms the existence of a positive relationship between them.

After the estimation of the results study argues that Keynesian proposition holds in case of Pakistan economy, there exists a positive relationship between budget deficit and trade deficit.

The study analyzes the stationarity, estimates the co-integrating regression and the error correction model representation, applies the Johansen co-integration method and tests the existence of the relationship of budget deficit, exchange rate and political instability. Our estimated results revealing that the time series are integrated of order one confirms the existence of a long-run equilibrium relationship between the trade deficit and budget deficit, political instability and exchange rate.

The economic implications of this paper are very important. If the government would like to reduce trade and budget deficits, the government must begin by reducing trade deficit. Economy overall growth and development in form of improvement in GDP growth will certainly leave positive economic effects. It also helps in reducing budget deficit. Political stability will encourage the domestic and foreign investors. Improved business and economic conditions will be a solution to current energy crises.

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