

Does Fiscal Deficit Dampen Down Economic Growth in Pakistan? An ARDL Bound Testing Approach

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Abstract

The present study excavates the fiscal deficit situation in Pakistan with special emphasis on economic growth. The study has employed ARDL technique using the secondary data for the period of 1972 to 2010. The findings show that debt financing of fiscal deficit may only involve the transfer of financial resources from private sector to government sector and can have negative effects on economic growth. The study claims that fiscal deficit in Pakistan is due to inefficiencies in tax system and large proportions of unproductive expenditures like defense, debt repayment, and unnecessary parliamentary expenditures. The study has also suggested some policies to overcome the deficit problem. The main focus polices is that the government should control excessive domestic credit expansion in the economy to avoid the adverse effects of fiscal deficit. Also, government should decrease the lending rate so that a healthy environment of investment prevail which leads to enhance the employment opportunities and government revenue.

Keywords: *Fiscal Deficit, Economic Growth, ARDL, Pakistan*

1. Introduction

Each country prefers to achieve stable economic growth as its major economic goal. The economists are attempting to discover the ways of achieving sustainable economic growth for getting a higher living standard. Nevertheless, history has repetitively revealed that it is difficult to get constant economic growth as it can be interrupted by many economic fluctuations. Economists define these

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fluctuations in terms of economic activities as business cycles. However, to ensure a sustainable level of economic growth and appropriate protection for the exposed section of society, greater emphasis is placed on the financing of government operations. Hence, the presence of fiscal deficit and its impact on macroeconomic performance of a country has become the major issue of concern in developing and developed countries.

Fiscal deficit is simply the amount by which government expenditures exceed its revenues during a particular year (Agénor and Montiel, 2008). There is traditional thought about the fiscal deficit of causing economic instability. There is strong evidence that fiscal deficit may affect economic growth positively or negatively depending upon its financing methods. The fiscal deficit may enhance economic growth if the funds allocated are invested in productive and developmental projects. It may affect economic growth adversely when funds are used for unproductive and current expenditures i.e. debt repayments, unnecessary parliamentary expenditures and etc. The detrimental effect of fiscal deficit may cause economic fluctuations and generate trade cycles in the economy.

Most developing countries like Pakistan are facing adverse effects of fiscal deficit on economic activity from many decades. IMF (2005) states that the main causes of generating deficit in budget of a country may be:

- Poor system of tax collection
- Narrow export base and high dependency on imports
- Shortage and underutilization of resources to meet expenditure requirements in long run
- Unproductive expenditures of budget (Defense, Debt payment etc.)

The key focus of the research paper is to evaluate the effects of fiscal deficit on Pakistan's economy. The rest of the paper is structured as follows: Various theories on fiscal deficit are described in section 2. Section 3 provides the review of existing literature on the subject. Section 4 is allocated for data and description of variables. Methodology is explained in section 5 and in the section 6 we present the results of the study. Section 7 concludes and suggests some policies to overcome fiscal deficit.

2. Theoretical Underpinning

Fiscal deficit is considered as the major phenomenon in the economic world of today. Different studies have been conducted to analyze the concept of fiscal deficit and its impacts on valuable

macroeconomic variables. These studies are based on different theories which explain the relation of fiscal deficit with other variables and also the modes of financing of fiscal deficit.

2.1 Keynesian Theory

This theory is also called Income Expenditure Approach and Conventional Approach. According to Keynesian approach, fiscal deficit positively affects growth. There would be an increase in government outlays due to addition in money supply. There is short fall of demand in accordance with money supply. The lending rate will decrease as a result of increased money supply. Investment will increase specially in private sector due to incentive of reduced lending rate. Keynesian multiplier will work and investment will increase. As investment increases, the output capacity will be enhanced. Keynesian theory also provides the room for crowding out private investment. If fiscal deficit is financed through debt instrument then there will be increase in lending rate and private investment will be crowded out due to limited availability of finance (Saleh, 2003).

2.2 Monetarist Theory

According to monetarists, government deficits, financed by domestic debt, only involves transferring funds to public sector from the private sector with no effect on output. The private sector is more efficient than the government sector; such a transfer could have a negative effect on output. The monetarists argue that monetary financing affects the economy by increasing aggregate demand (Mitchell, 2002; Okpanachi and Abimiku, 2007). Debt financing of fiscal deficit raises the interest rate and leads to decrease in investment which as a result decreases economic growth (Chakraborty and Chakraborty, 2006).

2.3 Neo-classical Theory

According to this theory fiscal deficits raise aggregate consumption in the economy which brings a reduction in national savings, and a higher real interest rate will generate (in a closed economy). This, in turn, negatively affects investment and overall economic activity. Increase in fiscal deficit causes increase in capital flows which leads to appreciation of exchange rate in an open economy. In both cases, crowding out investment and reduction in net exports are the results of increased fiscal deficit. The crowding out investment and existence of external debt has adverse consequences for future output.

2.4 Endogenous Growth Theory

The endogenous growth theory proposes that economic growth is an endogenous outcome of the system. Since growth is endogenous, government policies can influence its magnitude and the government plays a vital role in economic development. Capital formation in physical assets of a country, human capital formation and public investment in areas such as infrastructure, and science and technology yields a positive impact on output. Similarly, government policies about law and order situation and the economized taxation system encourage growth in an endogenous manner. Thus, unlike other theories, the fiscal policy can affect long run growth performance if growth is considered as endogenous variable (Saleh, 2003).

2.5 Sargent and Wallace Hypothesis

According to this hypothesis, fiscal deficit affects output growth through two channels. First, fiscal deficit affects money growth through its financing. When funds are generated by increasing money supply, the surplus money may not be absorbed by the economy due to shortage of aggregate supply. The increased demand may push the general price level which may result in inflation. Second, inflation generated from increased money growth may affect output growth negatively by rising cost of production and decreasing aggregate supply (Lozano, 2008).

2.6 Golden Rule of Public Finance (GRPF)

The rule states that government adopts deficit budget if the deficit is used for productive and profitable investment projects. The rule can generate less balanced growth in long run. In short run, its results are dependent on the initial level of public debt. GPRF states that funds used for productive projects may generate growth in both periods so deficit budget is acceptable. Adoption of GPRF for economy depends on the original level of public debt as for short run results, country's debt situation may be considered due to external debt (Ismihan and Özkan, 2012).

2.7 The Tax and Spend Hypothesis

According to this hypothesis, the policy of government to increase taxes for reducing deficits would result in decrease in private consumption and politicians would encourage increasing their expenditure while deficit would remain same in long run. On the other side, if deficit is financed by tax cut, there would be pressure on government spending but it would increase private consumption

without changing the budget deficit and national savings. This would be more desirable as compared to tax increase. The deficit has to run if government expenditure does not decrease because there would be addition in the interest payments (Chang and Ho, 2002).

In a nutshell, various theories describe the transmission mechanism of fiscal deficit for affecting the economy. According to these theories, fiscal deficit may have positive, negative or neutral effects on economic activities.

3. Review on Assorted Studies

There are a lot of studies that have been carried out to analyze the effects of fiscal deficit on economic growth which are as follows:

Fatima *et al.* (2012) observed true impact of fiscal deficit on economic growth. The sample taken for the study consists of time series data during period 1978-2009. Regression analysis along with unit root test and OLS model is used to get the final results. The main objectives of this study are: (i) Findings of causes of fiscal deficit (ii) Impact of fiscal deficit on growth of GDP (iii) Suggestions to overcome fiscal deficit. The results of the study showed the negative impact of budget deficit on economic growth and also described that this negative relationship is due to the shortage and underutilization of resources. The findings suggested that government should increase tax ratio to enhance its revenues and such policies should be designed those can encourage people to pay tax and give incentives to those who evade taxes.

Fatima (2011) investigated the relationship of fiscal deficit with private investment and GDP using data for thirty years from 1980 to 2009. The study analyzed the impact of economic policy on Structural Adjustment Program (SAP) and other macroeconomic indicators. Simultaneous equation model and two stage least square method were used to examine the connection between fiscal deficit and macro variables. The findings showed the adverse effects of fiscal deficit on Pakistan's economy. The facts depicted the sluggish level of private investment and GDP and increase in unemployment from less than 4% in 1980 to 7.8% by 2001. The study also mentioned the reasons of existing fiscal deficit which are poor tax collection and unproductive expenditures.

Dalyop (2010) studied the impact of fiscal deficit on domestic output growth through theoretical and practical approaches. According to this study, fiscal deficits were counterproductive to economic growth. The study discussed the effectiveness of fiscal deficit as a tool for the enhancement of

growth of domestic output in Nigerian economy using data from 1982 to 2008. The linear regression model was used to show the negative and insignificant impact of fiscal deficit on the growth of real GDP. The study recommended that if fiscal deficits were the essential tool for correcting short term fluctuations in economy, then these deficits should be invested in self-liquidating and profit ventures.

Keho (2010) investigated the causal relationship between fiscal deficit and growth in West African Economic and Monetary Union (WAEMU) countries by using time series data. Granger Causality test (1995) was used to find the causality relationship between fiscal deficit and growth. The study explored the mixed results in different countries by following three approaches (i) Keynesian approach (ii) Neo classical approach (iii) Ricardian approach. In three countries, no causality between fiscal deficit and growth had been found while there were adverse effects of deficit on economic growth in other three countries. Empirical study for seven countries exhibited the conformity of Ricardian approach having neutral relationship between deficit and growth.

Lozano (2008) investigated the dynamic of relationship between fiscal deficit, money growth and inflation by taking the quarterly data of last twenty five years of Colombia using Vector Error Correction (VEC) model. This analysis considered four hypothesis to understand the dynamics of these variables (i) Monetary hypothesis (ii) Fiscal theory of price level (iii) New Keynesian hypothesis and (iv) Sargent and Wallac (SWH) hypothesis. The study indicated that SWH is the most suitable approach for the comprehension of these variables. This analysis explored a causal relationship between these variables having two parts (i) Fiscal deficit to money growth (ii) From money growth to inflation. They found positive relationship between fiscal deficit and money growth that leads to decrease in growth.

Khan and Naeem-ur-Rehman (2008) discussed the short run effects of fiscal deficit and macro-economic variables taking evidence from Pakistan using data of 1960 to 2005 obtained from Pakistan economic survey and international financial statistics. Error correction model was used for the estimation of the results. The study considered major macro-economic variables and explores their relations with fiscal deficit in short run. Most important variables considered by this study were money supply, private and public investment, output, and balance of payment, foreign reserves and unemployment. The conclusion illustrated the results that short-term policies for raising foreign reserves had favorable effects on money supply and output, as, depreciation of domestic currency increased exports causing increased in private and public investment in short-term. Due to these short-term changes, unemployment response was significant but not encouraging.

Chauhdry and Shabbir (2005) explored the macro economic effects of fiscal deficit on foreign sector of Pakistan. This study investigated the impact of fiscal deficit on money supply, change in price level, balance of payments, output and international reserves using data for the period 1965 to 1999 in Pakistan. Simultaneous equation model technique with 2SLS method was used to determine relationship between these variables. The results determined positive relationship among money supply, bank credit, foreign reserves and deficit financing, while there was negative relationship between demand for money and rate of interest. This study explores how expansion of domestic credit to finance fiscal deficit creates excessive money supply over money demand and then lead to foreign reserves outflow.

Minea and Vallieu (2005) examined the impact of persistent deficit on economic growth in long run and short run. The data were taken from OECD countries for year 1971-2005. Researchers have also used endogenous growth model, extending it with productive public spending and budget deficit. This analysis explored the presence of persistent fiscal deficit in OECD countries which affects balanced growth power of these countries but no empirical and theoretical evidence was found to this impact. This study considered the long run and short run effects of fiscal deficit on rate of economic growth. Baro model includes the general hypothesis of adopting 'golden rule of public finance' (GRPF) which means government is allowed to run a budget deficit, if the deficit is used to finance productive expenditure. In this way GRPF leads to lower balanced growth in long run while for analyzing its impact in short run, it depends on initial level of public debt. The findings show that Baro model does not deny the Keynesian view in the short run but may contradict in the long run. Similarly GRPF may be good in short run but it can never promote long run economic growth.

Adam and Bevan (2004) highlighted the relationship of fiscal deficit with growth of 45 less developed countries taking data from year 1970-1999. The study found the evidence of threshold effect in these countries. This analysis empirically examined that there was linear relation between deficit and growth. For many countries, this relation was nonlinear especially for sample of developing countries. Simple overlapping generation model of saving behavior was used with an endogenous growth model. The study also discussed different modes of financing deficit and their impact on growth.

Cheng (2003) observed economic fluctuations and growth in Malaysian economy using time series approach of multivariate cointegration, Vector Auto Regressive (VAR) modeling and Causality test. To get the appropriate results, the data of period 1975-2002 is used. The results explained the impact of fluctuations in money supply and fiscal deficit on economic growth. The study was concerned

with the relation of changes in major macro variables with economic growth to help out policy makers in economic crises. The analysis of the study exhibited negative relation between deficit and real GDP growth.

It can be concluded that the impacts of fiscal deficit on economic growth are mixed for different economies. For example, in some studies, the impact of fiscal deficit on growth of real GDP is contrary to Keynesian theory and in conformity with monetary theory, while some studies favor Ricardian equivalence approach relating to impact of fiscal deficit. The review supports the opinion that fiscal deficit can affect the economic growth positively by the working of multiplier. It can also have negative effects by creating surplus money in the economy which may not in accordance with the physical volume of goods and services and can lead to increase in imports. As a result, the balance of payment may deteriorate and can disturb the economic activities. Fiscal deficit can also show neutral effect if the individuals may not respond to changes in tax system.

4. Data and Description of Variables

For the estimation of GDP equation, we have used time series annual data for the period 1972-2010. The time period has been selected for the two reasons i) the reliable and authentic data of all variables are not available ii) after the separation of east Pakistan (now Bangladesh), we have now new Pakistan in the form West Pakistan. The data are taken from *Pakistan economic survey* published by ministry of finance, government of Pakistan. The Autoregressive Distributed Lag Model (ARDL) bound testing technique has been employed to find the results. Following the theoretical underpinning in section II, we have constructed the following model.

$$RGDP = f(FD, PI, LR, LF, EXP, FR)$$

(1)

Where:

RGDP = Real Gross Domestic Product

FD = Fiscal Deficit

PI = Real Public Investment

LR= Lending Rate

LF = Labor Force

EXP = Real Exports

FR = Real Foreign Exchange Reserves

5. Methodology

The methodology employed for this study is Autoregressive Distributed Lag Model (ARDL). ARDL approach to cointegration has superiority to the Engle–Granger (1987) two-step residual-based cointegration technique and Johansen and Juselius cointegration technique. This technique does not need the order of integration of the variables. ARDL model can be applied if the variables are stationary I(0) or integrated of order one I(1) or both. It can be applied in the small sample size as well. The Unrestricted Error Correction Model (UECM) to explore the impacts of fiscal deficit on economic growth is given below:

$$\begin{aligned} \Delta(RGDP)_t = & \alpha + \beta_1(RGDP)_{t-1} + \beta_2(FD)_{t-1} + \beta_3(PI)_{t-1} + \beta_4(LR)_{t-1} + \beta_5(LF)_{t-1} + \beta_6(EXP)_{t-1} \\ & + \beta_7(FR)_{t-1} \\ & + \sum_{i=1}^{p_1} \delta_{1i} \Delta(RGDP)_{t-i} + \sum_{i=0}^{p_2} \delta_{2i} \Delta(FD)_{t-i} + \sum_{i=0}^{p_3} \delta_{3i} \Delta(PI)_{t-i} + \sum_{i=0}^{p_4} \delta_{4i} \Delta(LR)_{t-i} \\ & + \sum_{i=0}^{p_5} \delta_{5i} \Delta(LF)_{t-i} + \sum_{i=0}^{p_6} \delta_{6i} \Delta(EXP)_{t-i} + \sum_{i=0}^{p_7} \delta_{7i} \Delta(FR)_{t-i} + \varepsilon_t \end{aligned}$$

(2)

The β_i are long run multipliers and δ_i are short run dynamic coefficients of the ARDL model. ε_t is white noise error and Δ is the first difference operator. To validate the long run relationship we have applied Wald coefficient test of joint significance before estimating long run coefficients and error correction models. We have estimated the ARDL model specified in equation (2) with the following hypothesis.

$$H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0 \quad (\text{No Cointegration})$$

$$H_1 = \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq \beta_7 \neq 0 \quad (\text{Cointegration})$$

The null hypothesis shows that the parameters in equations (2) are simultaneously equal to zero or no long run relationship. The alternative hypothesis shows that the parameters are not equal to zero suggesting long run relationship. After applying the Wald test, the computed F statistic is compared with critical values proposed by Pesaran *et al.* (2001). If the computed F statistic is greater than the

upper bound critical value, the null hypothesis of no long run relationship is rejected. If F-statistic is less than the lower bound critical values, the null hypothesis is accepted implying that there is no a long run relationship or cointegration. Finally, if the F-statistic lies between the lower and upper bound critical values, the test is inconclusive for the given level of significance. If long run relationship exists, the long run parameters can be estimated by using the following equation:

$$\begin{aligned}
 & + \sum_{i=0}^{p_5} \beta_{5i} (LF)_{t-i} + \sum_{i=0}^{p_6} \beta_{6i} (EXP)_{t-i} + \sum_{i=0}^{p_7} \beta_{7i} (FR)_{t-i} + \varepsilon_t \\
 RGDP_t = & \alpha + \sum_{i=1}^{p_1} \beta_{1i} (RGDP)_{t-i} + \sum_{i=0}^{p_2} \beta_{2i} (FD)_{t-i} + \sum_{i=0}^{p_3} \beta_{3i} (PI)_{t-i} + \sum_{i=0}^{p_4} \beta_{4i} (LR)_{t-i}
 \end{aligned}
 \tag{3}$$

The short-run dynamics can be found by estimating the following equation:

$$\begin{aligned}
 \Delta RGDP_t = & \alpha + \sum_{i=1}^{p_1} \delta_{1i} \Delta (RGDP)_{t-i} + \sum_{i=0}^{p_2} \delta_{2i} \Delta (FD)_{t-i} + \sum_{i=0}^{p_3} \delta_{3i} \Delta (PI)_{t-i} + \sum_{i=0}^{p_4} \delta_{4i} \Delta (LR)_{t-i} \\
 & + \sum_{i=1}^{p_5} \delta_{5i} \Delta (LF)_{t-i} + \sum_{i=0}^{p_6} \delta_{6i} \Delta (EXP)_{t-i} + \sum_{i=0}^{p_7} \delta_{7i} \Delta (FR)_{t-i} + \omega ECM_{t-1} + \varepsilon_t
 \end{aligned}
 \tag{4}$$

6. Results and Discussion

The Schwarz Bayesian Criterion (SBC) has been used to determine the maximum lag length of the variables. The SBC has suggested optimal lag length 2. The results of Wald test are reported in Table 1.

Table 1: F-Test For Cointegration

N o t	Equation	Computed F-Statistics	5% Critical Value Bounds		Outcome
			I(0)	I(1)	
	$eRGDP / FD, PI, LR, LF, EXP, FR$	7.19	2.32	3.50	Cointegration

s

Critical values are obtained from Pesaran *et al.* (2001).

The calculated value of F-statistic is 7.19, which is greater than the upper bound at 5% suggesting that we are unable to accept the null hypothesis of no cointegration.

6.1 Long-Run Estimating Results

Now the next step is to find out the long run coefficients of ARDL model. The results of the estimated long run coefficients are presented in Table 2.

Table 2: Estimated Long Run Coefficients using the ARDL Approach
Dependent Variable: RGDP

Regressors	Coefficient	Standard Error	T-Ratio[Prob]
FD	1.5734	.17164	9.1671[.000]
PI	.040333	.0014807	27.2399[.000]
LR	.0011367	.3557E-3	3.1954[.005]
LF	-.016963	.0093007	-1.8238[.083]
EXP	-.0086085	.010650	-.80829[.428]
FR	-.36504	.21892	-1.6674[.111]
C	-2.8006	.25818	-10.8473[.000]

Source: Authors' calculations.

We have arranged the long run results of estimation of equation 3 in Table 2. There are seven variables specified in equation 2. RGDP is dependent variable exhibiting the economic growth, whereas fiscal deficit, Public Investment, Lending rate, Labor force, Exports and Foreign reserves are used as independent variables. We have hypothesized in the light of theoretical underpinning that each regressor in equation 3 is positively related with real GDP except fiscal deficit and lending rate.

The more concerned variable in this study is fiscal deficit and the value of regression coefficient of fiscal deficit is -1.5734 which exhibits that an addition in fiscal deficit by one million decreases the RGDP by about 1.5734 million. The effect is strong and statistically significant. Fiscal deficit can negatively affect through various mechanisms. Firstly, according to monetarist, an increase in fiscal deficit, if financed by internal borrowing may involve transfer of resources from private to public sector, can bring reduction in RGDP. In this mechanism the transfer of resources involves crowding out private investment due to rising lending rate; as a result the economic growth shows negative impact of fiscal deficit. Secondly, fiscal deficit can negatively affect the economic growth, if funds raised for fiscal deficit may invest in unproductive project. Thirdly, according to Keynesians, the monetary deficit financing can affect economic growth by affecting aggregate demand. Increase in money supply, if does not match supply of output, cannot be absorbed by domestic economy and may outflow from the economy in the form of increased demand for imports. This channel adversely affects balance of payments which as a result affects economic growth. Our findings related to negative impacts of fiscal deficit on growth are matched with studies (Chaudhary and Abe, 1999; Fatima, 2011; Keho, 2010; Dalyop, 2010; Fatima *et al.*, 2012).

The value of coefficient of public investment is .040333 indicating that one million worth of public investment would add to RGDP by .040333 million. The effect of public investment on RGDP is very minor but statistically highly significant. Our results are consistent with the investment multiplier theory by J. M. Keynes. So, RGDP and public investment should be positively related. The public investments may induce higher economic growth and higher level of private investment, because both investments are complement and have positive externalities. Government investment can crowd in private investment by targeting the activities which have strong link with the infrastructure and provision of public goods (Tun and Wong, 1982). In developing economies, public investment may cause economic growth through private investment, as private sector can be considered more efficient as compared to public sector in these economies. Private investment in Pakistan is positively affected by public investment to generate economic growth. Our results are consistent above mentioned studies.

The value of parameter lending rate is -.0011367. It indicates that when lending rate increases by one percent, RGDP goes down by about .0011367 million. The effect is very minor and statistically significant. In the phase of higher fiscal deficit, the government can escalate money supply as one of the options of deficit financing. An increase in money supply boosts the real GDP as a result of decrease in lending rate. With lower lending rate, consumers intend to purchase more durable goods and firms intend to enhance their investment. This leads to increase in private investment, which

positively affects output growth. Studies that strongly favor the negative relationship between the lending rate and growth are (Aisen and Hauner, 2008; Fatima, 2011).

The coefficient of labor force is .016963 which demonstrates that addition in labor force by one million will result in .016963 million increase in RGDP. The impact of labor force on RGDP is also minor but statistically significant. Technical labor force is considered the human capital⁴ of a country. The effective labor force is an asset of a country. In the era of knowledge-based economy, human capital has become a very vital factor for generating economic growth. The Dixit and Stiglitz, a neoclassical model, predicts that increase in size of population positively stimulates economic development due to economies of scale. It is the quality of labor forces not its quantity that matters. Human capital formation raises the workers' productivity which is positively related to economic growth. Our findings support the studies (Pissarides, 2000; Stadler, 2003; Mortensen, 2004).

The value of regression coefficient of export is .0086085, which means that one million rise in exports will lead to .0086085 million increase in RGDP. This impact of exports on GDP is very minor and statistically insignificant. According to traditional Keynesian theory an increase in exports is one of the factors that can stimulate the aggregate demand and will lead to increase in outputs. An export-led growth strategy focuses to offer various benefits for exporters to increase their exports by different governmental policies (Abou-Stait, 2005). Exports increase the volume of indigenous output to attain more production. Exports can support the country to correct its Balance of Payment and to lessen the external shocks on the economy. Fatima (2011) found positive relationship between exports and RGDP. Chaudhry and Shabbir (2005) report that export earnings enhance the economic growth. Saima *et al.* (2008) examines that export led growth hypothesis is validated in Pakistan. Ruppel (1997) finds positive relationship between exports, RGDP and foreign reserves. Therefore, our results are in line with the above mentioned studies. The value of regression coefficient of foreign reserves is 0.36504 which indicates that one million increase in foreign reserves will lead to 0.36504 million increase in RGDP. This value of coefficient is very minor and statistically insignificant. According to Keynesian policy of fiscal expansion, formation of foreign exchange reserves (FER) can decrease the exchange rate, which may enhance the export-led growth. So, the economies with rapidly growing FER, can have higher investment and economic growth. Our results are consistent with following studies (Pomfret, 1997; Rodrik, 2005; Fukuda and Yoshifumi, 2007; Aurangzeb and Anwar, 2012).

⁴The trained, educated and skilled persons of the country are called human capital.

6.2 Error Correction Estimating Results

The short run dynamic parameters are estimated by the unrestricted error correction model (UECM). We have reported the error correction estimation results in Table 3. All the coefficients have the same signs in the short run as well. So far as the error correction term (ECM) is concerned, it is negative and statistically significant. The value of ECM is -0.84620. It suggests that 84 percent converging towards equilibrium. The speed is very quick.

Table 3: Error Correction Representation For The Selected ARDL Model Dependent Variable: DRGDP

Regressors	Coefficient	Standard Error	T-Ratio[Prob]
dRGDP1	-.45452	.11300	-4.0224[.001]
dFD	-.033943	.0019943	-17.0202[.000]
dPI	1.4280	.22990	6.2116[.000]
dPI1	-7.4845	.36760	-20.3605[.000]
dLR	-.4804E-3	.3766E-3	-1.2754[.217]
dLF	.67024	.29485	2.2731[.034]
dEXP	-3.3096	.33391	-9.9118[.000]
dFR	.51416	.15684	3.2781[.006]
Ecm(-1)	-.84620	.039562	-21.3896[.000]

Source: Authors' calculations.

7. Conclusions and Policy Implications

This paper focuses on the relationship between fiscal deficit and economic growth in developing countries like Pakistan. The analysis is done on the basis of annual time series data for the period of 1972 to 2010. The main findings of the study are as follows: The study observes a complete evidence to conclude that Pakistan is facing adverse effects of fiscal deficit from decades. The reason of this fiscal deficit is inefficient system of tax collection. Another reason is large proportion of unproductive expenditure like defense, debt repayment, unnecessary parliamentary expenditure and etc. This fiscal deficit may affect growth differently whether the effects are positive, negative or neutral. In this context, various theories presenting in previous chapters provide the channels to show the effectiveness of fiscal deficit on economic growth. Fiscal deficit may have positive effects on GDP growth if debt financing is used to generate funds, then the

increased government internal borrowing may increase the domestic lending rate which can create crowding out private investment. The small volume of private investment can lower the output growth in the economy as the private sector considers the efficient sector. It can be concluded that the debt financing of fiscal deficit may only involve the transfer of financial resources from private sector to government sector and can have negative effects on economic growth.

To alleviate the adverse effects of fiscal deficit on the economy, the study make the following policy prescriptions: Government should control excessive domestic credit expansion in the economy to avoid the adverse effects of fiscal deficit. To control fluctuations in money supply, price level and rate of interest, government should avoid short run devaluation and stabilize external value of currency. Government should utilize its resources properly to control deficit to meet its expenses. Such policies should be designed that can encourage people to pay taxes and give incentives to those who avoid to pay taxes. Government should decrease lenders' interest rate so that small domestic investors can invest to create employment opportunities along with increase in government revenue. Government should improve tax system. The allocation of tax revenue should be growth generating. In order to avoid deficit budget, the parliamentarians should reduce their personal and unproductive expenditures. The study recommends that if fiscal deficits are the essential tool of correcting short term fluctuations in economy then these deficits should be invested in productive and profitable projects. Especially deficit should be invested in infrastructure to get sustainable economic growth. In Pakistan, elimination of corruption will reduce fiscal deficit and improve performance of economy.

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