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The Deficit Conundrum Beyond the Fiscal Cliff: Exploring The Impact on Economic Growth in South Asia

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ABSTRACT

This study investigates the relationship between budget deficits and economic growth in South Asia focusing on Pakistan, India, Bangladesh, and Sri Lanka from 2002 to 2021. Persistent fiscal deficits, fueled by rising government expenditures and weak revenue mobilization, pose significant macroeconomic challenges, including increased borrowing, debt servicing pressures, inflation, and exchange rate instability. These factors erode public investment, crowd out private sector activity, and hinder long-term growth. Using advanced panel data econometrics, including unit root tests, the Auto-Regressive Distributed Lag (ARDL) model, Error Correction Model (ECM), and Johansen co-integration analysis, the study explores short- and long-run dynamics. The empirical framework incorporates GDP growth, budget deficits, exchange rates, inflation, investment, and interest rates. Findings reveal that while exchange rate depreciation and investment positively influence growth, high interest rates and inflation have adverse effects. Although sustainable deficits can boost short-term demand, chronic excessive deficits undermine long-run growth and macroeconomic stability. The study concludes with actionable policy recommendations, emphasizing fiscal discipline, tax reforms, strategic expenditure management, monetary-fiscal policy coordination, and prudent external debt practices. Despite limitations in sample size and cross-country variability, the research provides critical insights for policymakers aiming to reconcile fiscal sustainability with economic development in South Asia.

INTRODUCTION

Budget deficit and economic growth is one of the important discussing issues in economic literature. For this purpose it has given the top priorities among developed and under-developed economies including south Asian countries. Budget deficit means when government expenditure exceeds over its revenue. For sustained economic growth and stability in macroeconomic policies it is necessary to brought about the issue of budget deficit into main

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focus. In all over the world particularly developing economies like Pakistan, India, Bangladesh and Sri Lanka suffer from continuous budget deficit and economic stability. The magnitude of budget deficit or surplus is very crucial statistic for the measurement of budgetary policy and economic growth of a particular country. This relationship has been the subject matter for policy makers and academic circle, (Siegel,1979). So, if government expenditure exceeded its revenue so this situation is worst, there has to be incur deficit for financing its revenues, there is mismatching of expenditure for financing of investment. Big problem arises if deficit become higher and higher and not ending. (Fatima, et al., 2012).

Budget deficit create more macro-economic problems when it becomes larger, therefore a large budget deficit means heavy borrowing and large debt services, all this creates pressure on government to minimize its spending on health, education and infrastructure facilities. All this cause decreasing physical and human capital ((Fischer, 1993). Avery high public borrowing causes that investment becomes get crowding out and therefore fluctuations coming in the exchange rate. (Chaudary & Abe, 1999). Therefore, if there is upward increase in productive public investment as the private and public investment is complementary, so the negative impact on the public borrowing on the private investment may be counterbalance. If budget deficit used for ill targeted areas and for infrastructure facilities to be more likely giving outcomes and for this purpose human capital also give a different side of impact, thus, the fear of budget deficit can be justified there if government make the overall financing of deficit of currently expenditure to capital assets expenditure.

According to Ramzan, et al., (2013) the ill effect of the budget deficit is associated to the way how is it financed and used. To overcome the budget deficit the government has to print money or borrow nationally and internationally, and or also by selling bonds or securities. We know that when there is too much usage of excessive thing financing the budget deficit gives overall adversely macroeconomic results, and that is through budget deficit printing of money give inflationary pressure as a whole on the economy. Therefore, borrowing of non-banking for example financing of bonds goes to increase the rate of interest so that crowding out of private investment happened. Budget deficit through external financing can spell over balance of payment issues that is appreciation of the exchange rate return in rising of debt.

When there is huge amount of budget deficit then there will be raising of debt services so as debt grows, the rate of interest payment gives upward slope that is serves the tax of investment. So in this way private investment is reduce and unemployment goes up, that is overall revenue

goes down and hence, more deficit is here. All this shows that the country's economy continues to go through the rising debts that might collapse growth, it is also argued that rising debt compels the government for targeting high financial growth and income in order to finance any rising debt duties (Barua, 2005). Due to the fear of burden of taxes on future generations, most of the economists are agreed on the financing of overall deficit all the way through external debt means that delay of tax increase. That is instead of getting debt increase the tax ratio. Therefore, it is emphasized on that such likewise burden depends on that how the contracted loan must be is utilized. In this situation if this burden is used on present consumption expenditure, then future output are likely to be made worse-off, on the other side if it spent on productivities activities such as education sector and health sector then future generations is likely to better-off. Now days, like other developing countries, South Asian Countries economy also needs to minimize his overseas borrowing in order to stay away from the problems of dealing with increased foreign debt. Therefore, it has to reduce budget deficit, or to make reduction in domestic investment, or to some extent rise private savings.

There is advice for policy makers, whether from International Monetary Fund (IMF), World Bank, or many neo-classical economists, is to reduce the budget deficit. However, South Asian Countries confirmed to be very difficult, like most of developing countries suffering from stationary tax collection, as well as rigid public spending. It is almost impossible for these countries to minimize current expenditure due to the fear of unemployment or protest alongside decline in wages and thus, it reduces only the capital expenditure. Therefore, this reduction may, in turn, the effect of falling the productivity of private sector and hence, economic growth. According to world bank data the average fiscal deficit as a percentage of GDP and economic growth for six developing regions, including the South Asia, over the period 2002 to 2021. Considering the fiscal position, the SAARC region, on average, has the highest fiscal deficit (7.52 per cent) among the six developing regions (World Bank, 2019a). During this period, the economic growth in South Asian was 6.6 percent, which is the second highest rate compared with other developing regions except the East Asia and Pacific region which had highest economic growth (8.2 per cent).

Therefore, there is a question arises whether this budget deficit hamper economic growth in South Asian Countries or not. And another question whether in last few decades this budget deficit have some kind of impact or not. Now in this situation it is important to know the prone and cons of budget deficit in these Countries economy. Among the South Asian economies,

there have been persistent tendency towards fiscal deficit due to continually expanding government expenditure (such as fuel and fertilizer subsidies and social welfare programs) and inadequate revenue generation capacity of government (World Bank, 2013a). Notably since early 1980s, the South Asia witnessed an unprecedented increase in fiscal deficit (Ravinthirakumaran et al., 2016).

Statement of the Problem

South Asian economies like Pakistan, India, Sri Lanka and Bangladesh have been facing budget deficit for last few decades. It is an important factor in achieving and establishes social and economic objectives which include macroeconomic stability with sustainable growth and poverty reduction. However, now a day the continuous and chronic budget deficit position of these countries has becoming worse, drawing the attention of policy makers to its long term sustainability. The present study attempts to examine all the studies by empirically and the relationship between them, therefore, the problem statement of the current analysis and study is however, the impact of budget deficit on the economic growth of these selected South Asian Countries that is Pakistan, India, Sri Lanka and Bangladesh for the period of 2002 to 2021.

Research Questions

As we know these South Asian Countries economies has been suffering from budget deficit continuously. Therefore, the government has been using different techniques like borrowing, printing of money, and increase in tax rates etc. To get rid of this deficit but all these measures again in result deficit directly or indirectly. Now the question of interest is how to control this deficit to improve the economic condition the country.

The paper investigates the efficiency of borrowing, money printing, and tax increases in reducing the ongoing budget deficits in South Asian countries including Pakistan, India, Sri Lanka, and Bangladesh. The following study questions direct the effort:

1. Which main factors lead to budget deficits in high-deficit South Asian nations?
2. In what ways might budget deficits affect the economic development of these nations?
3. Which policies can be followed to lower budget deficits and raise general state of affairs?

LITERATURE REVIEW

Theoretical Perspective

Generally, there is no agreement among economist and policy makers on the basis of analytical situation or on empirical results by financing the expenditure through budget deficit is good or not, or neutral in sense of growth and investment. In general, there are three school of thought

that explaining budget deficit and economic growth of our country. The Keynesian, new classical and the Ricardian. Among this the Keynesian model explains the important policy prescriptions, New classical contributes that budget deficit is detrimental to the overall investment and growth, while Ricardian view of budget deficit is not really matter except for smoothing the expenditure adjustment over the revenues shocks. In addition the Keynesian school of thought stressed on short run analysis while the New classical a;nd Ricardian give effect to the long run analysis of budget deficit and economic growth.

Neo-classical view of budget deficit

The term budget deficit means deficit in revenues of the government that is overall saving of the government declines so it means dis-saving happened. In the Neo-Classical prospective, that have harmful effect on the economic growth here is the decline in government saving is not fully balance by increase in private saving, therefore, resulting decrease saving rate. Apart from this will adversely affect the economic growth of a country. The Neo-Classical economists assumed when all resources are full employed then market is cleared. so in this situation, budget deficit increases life time consumption that is shift taxes to the new generation. Here if the overall economic assets are completely employed, the increase consumption expenses necessarily implies fall in saving in a closed economy. If we see the situation in open economy, then there is no affect on investment and interest rate and remain unaffected, there may decrease in national saving and financed by high borrowing then it will result an appreciation of the currency and also decreases exports. In all these cases saving falls and consumption rises accompanied by fall in investment and exports. The Neo-Classical paradigm assumed that that the consumption of each individual is determined as the solution to inter- temporal optimization problem where both borrower are lender are permitted at the market rate of interest. It is also assume the individual has finite life spans where each consumer belongs to a specific generation and life span successive generation is overlap.

Keynesian school of thoughts about budget deficit

Keynesian school of thought encourages increase in autonomous expenditure whether consumption or investment that is supporting by budget deficit would make output to expand throughout multiplier process. Keynesian framework does not differentiate between alternative uses of budget deficit, nor make a distinction between the alternative sources of deficit financing all the way through internal or external borrowing. Therefore, there are no precise budget constraints in this analysis. In the Keynes framework throughout multiplier base

development of output make to rise to the demand for money, if supply of money is fixed so deficit get bound to financed, the rate of interest would give partial increase and multiplier effect would be offset. Therefore, Keynes paradigm suggests that upward increase in demand would increase productivity of private sector investment and that gives more investment with the given interest rate.

Keynes suggest that budget deficit may increase investment and saving even if the rate of interest increases, consequently, because of the yet underutilization of resources. Therefore, when there is full employment, leading crowding out of investment in Keynes model, If we see the standard Keynesian model, if a person think that budget deficit is good and get them wealthier, this can lead to increase output and employment level, so that everybody feel wealthier as unlike the loanable fund theory. Keynes view clinched away any kind of direct effect on the rate of interest of borrowing by the government.

Ricardian view of budget deficit

Ricardian of the view that budget deficit is neutral in terms of impact on economic growth of In these South Asian Countries. He is of the view that financing of deficit only to be rescheduling by the taxes. All this deficit is going to be the current period that is exactly equal to the present value of future taxation which is mostly required for the paying off that increment to debt resulting from deficit. All the government spending should be paid for now or latter, so the current worth of spending should be equal to the present overall revenues of taxes and of non taxes revenues. Sometimes budget deficit is very helpful for encouraging the smooth function of the revenue shocks and for the uneven expenditure, which financing during taxes and spread over through period of time. Therefore, that kind of budget deficit has no contact on aggregate demand if the spending of household decisions are mainly based on their current incomes and takes an amount of current value of future liabilities of taxes.

Therefore, a decline in present saving of the government implies through budget deficit accompanied by an offsetting upward increasing in private saving, in this way leaving the national saving unaffected and, so that investment does not change. Therefore, there is no impact on the interest rate. In the Ricardian equivalence theory required that every individual is foresighted including in economy and having discount rates that is equal to the government discount rates on expenses and spending and therefore, they have particularly longtime prospect which is evaluating the current worth of future taxes. Particularly, like this point in

time prospect can be well extended outside their own lives in which case they save and making noble transfer for caring tax liabilities of their future generation.

The Empirical outcomes and Studies

There is bulk of literature about the association between budget deficit and economic growth. The debate on the correlation between these two variables is quite controversial. The debate is not much focused on tax but all of the theoretical and empirical literature suggests that unrestricted increase in tax rate will oppose to the endogenously increase in tax resulting from others development in the economy and will result in growth declining.(Barro & Redlick, 2011).

The background of empirical study and observational investigation on the connection between spending shortage and monetary development is followed back to crafted by Barro (1979), where he investigated a positive and noteworthy effect of spending shortfall on financial development; this effect was because of the positive connection between spending deficiency and expansion. Be that as it may, Adam and Bevan (2002) examined the effect of spending deficiency on monetary development for the example of 45 creating nations for time period 1970 to 1999. They discovered conceivable non-direct connection among development and spending shortage for the arrangement of these developing nations. Keho (2010) dealt with the causal connection between spending shortfall and monetary development for seven West African nations for day and age 1980 to 2005. The exact confirmations indicate blended outcome. For three nations, he didn't found any causality between spending shortfall and monetary development. Furthermore, for the staying four nations, shortfall effectively affected monetary development and economic growth.

Nelson and Sing (1994) using cross section data studied empirically on the relationship between GDP growth rate and budget deficit for the panel of 70 countries over two time period that is 1970-1979 and from 1980-1989. This investigation uncovered that the spending deficiency had next to zero noteworthy impact on the financial development of these nations in the 1980s.

Avila (2011) explored on the connection between spending deficiencies, macroeconomic vulnerability, and development of Argentina for the time period 1915-2006. He discovered that shortage hampered the development rate in Argentina through the instability in relative costs. Taylor, et al. (2011) analyzed the cooperation between the essential spending shortages, financial development and obligation for the period 1961-2011 for United State of America

(USA). They found a solid beneficial outcome of higher essential deficiency on financial development of USA, even considering the possible rise in interest rate.

Osinubi, et al. (2006) studied empirically on the connection of budget deficit and external debt in Nigeria economy over the period of 1970 to 2003.From the study he find out that econometric analysis concluded the subsistence of the debt Laffer curve and non-linear impact of external debt on growth of Nigeria.The studied concluded that if debt-finance budget deficit is going to operate and make stabilize the debt ratio at best possible sustainable level debt overhang problem could be avoided and the benefits of external borrowing would be maximize. (Bose, et al. 2007) investigated the effect of the budget deficit on economic growth for 30 under develop countries for the period 1970 to 1990 that used the panel data. He noticed that budget deficit increases the economic growth if the budget deficit is due the productive expenditure like expenditure on education, health, and capital, but in case of current expenditure the impact is insignificant.

Rehman (2012) empirically worked and showed the impact of the budget deficit and the economic growth situation for Malaysia economy by using quarterly data from 2000 to 2011. He concluded that there is no correlation between economic growth and budget deficit for Malaysia, consistent with Ricardian perspective. Gupta, et al. (2005) examined the effect of the budget consolidation and expenses on economic growth in panel of 39 under develop countries during 1990s. The result showed that strong budgetary position is generally associated with high income growth in both short and long run. Cebula (1995) investigated the budget deficit impact an American economy using per capita real economic growth. He used quarterly data for the time period 1955 to 1992. The empirical finding showed that budget deficit shrink the rate of economic growth.

Brender and Drazen (2008) provided proofs that a country suffering from very heavy budget deficit will move negative signal to the country that the government authorities have not performed well in supervision the fund of country. Tan (2006) worked on the relationship among inflation rate, economic situation with growth, and budget deficit over short and long run for Malaysia economy during the time period of 1966 to 2013. The research completed that there is no association among these variables in long run. Further, the budget deficit has no connection with economic growth neither in short run or in long run. Alesina and Ardagna (2010) found the negative impact of cyclically adjusted budget deficit on economic growth for United States of America (USA) and other Countries of Organization of (OECD).

The effect of the budget deficit on economic growth level have been found in many empirical studied, such as Huynh (2007) conducted research for the Vietnam economy for the explaining to interdependence deficit with growth level. He accomplished that there is negative impact of budget deficit on economic growth. Saleh (2003) in his work found that budget deficit has diverse effect on economic growth. Fischer (1993) also find out empirically the outcomes between the budget deficit and with the economic growth for the country of Morocco and Italy. He argued that enormous budget deficit helped the economy of Morocco and Italy for helping to grow because too much spending give to boost private consumption in short run. He further pointed-out that it is the deficit which reduces the burden of taxation from consumer prospective here is in long run there is negative effect of budget deficit on economies of both countries.

The empirical studies are diverse. Some studies are providing support for hypothesis of negative impact of higher budget deficit on growth, while, some are of the responded that there is positive impact of budget deficit on economic growth. Easterly and Rebelo (1993), for instance, are amongst the first they examine the correlation between budget deficit and per capita economic growth. The found that strong adverse effect of budget deficit on growth, using 5 years period average data since 1960. Gemmell, and Kneller (2001) have established the same result by proving growth adverse effect of budget deficit for the period of 1970-1995.

Others analysis provided different conclusion, criticizing existing finding in number of direction. For example, Levine and Renelt (1992) studied the broad country sample for the time period 1960-1985. They questioned the results of earlier studied by showing sensitivity to the small variation in the set of repressors. In their finding they found nothing about the adverse effect budget deficit on economic growth. Similarly, Hsieh and Lai (1994) satisfied the same result by analyzing the data of G-7 countries using vector auto regression analysis. While, Miller and Russek (1997) have achieved the same result by analyzing the upward situation of debt finance expenditures and shown the growth level in the advanced economies using both fixed and random effect panel estimation.

Barro and Redlick (2011) provided identical result, concluding that budget deficit has positive effect and not necessarily harmful for growth of the country. They suggested that budget deficit has multiplier effect for the US economy during the time period 1950-2006 that included purchases of government defense expenditure and non- defense government purchases, that have fixed changes in taxes. At the same time, Lin (2000), Futagami, Lawaisako, and Ohidoi

(2008) found the non-linear relationship between budget deficit and per capita income growth. Reinhart and Rogoff (2010) got the same result of the existence of non-linear association between growth and the level of debt-to-GDP ratio that is less than 90 %. They worked on historical data almost covering two centuries period for the sample of the 44 countries.

Fatima, et al. (2011) emphasized the impact of deficit on growth for In these South Asian Countries economy. They analyzed time series data from the year 1978 to 2009, by using simultaneous equations and two stages least (2SLS) method. They found that budget deficit effects economic growth both directly and indirectly. Chaudary and Shabir (2005) found that increase in government budget deficit is partially due to an inelastic revenues structure, excessive supply of money over demand. This leads to foreign reserve outflow, which in return effects growth of country. Sadique and Ilyas (2011) worked on the relationship among revenue gap, budget deficit, debt burden, and economic growth. In addition they used co-integration, ARDL and error correction techniques. They worked on time series analysis for the year 1980 to 2008 and explored that revenues gap and budget deficit affects the economic situation and growth in the country.

Different investigations have been completed to look at the connection between monetary development and spending shortage, going from various strategies, procedures, and size of the sample utilized for the different countries. As far as, there is by all accounts few examinations worried to this theme is done on the effect of the spending deficiency on monetary development on particular nation. The present examination plans to add to the writing by looking at the relationship of financial development and budget deficit of South Asian Countries.

METHODOLOGY

Research Methods

It can divided into two broad sections. First section discusses data, model specification, definition of variables used in the study, and measurement of these variables. The theoretical background of the model specification will also be discussed. The other section focuses on estimating methods. This consists of panel properties data and econometric method used in estimation of model.

Economic Growth and Budget deficit-An Overview

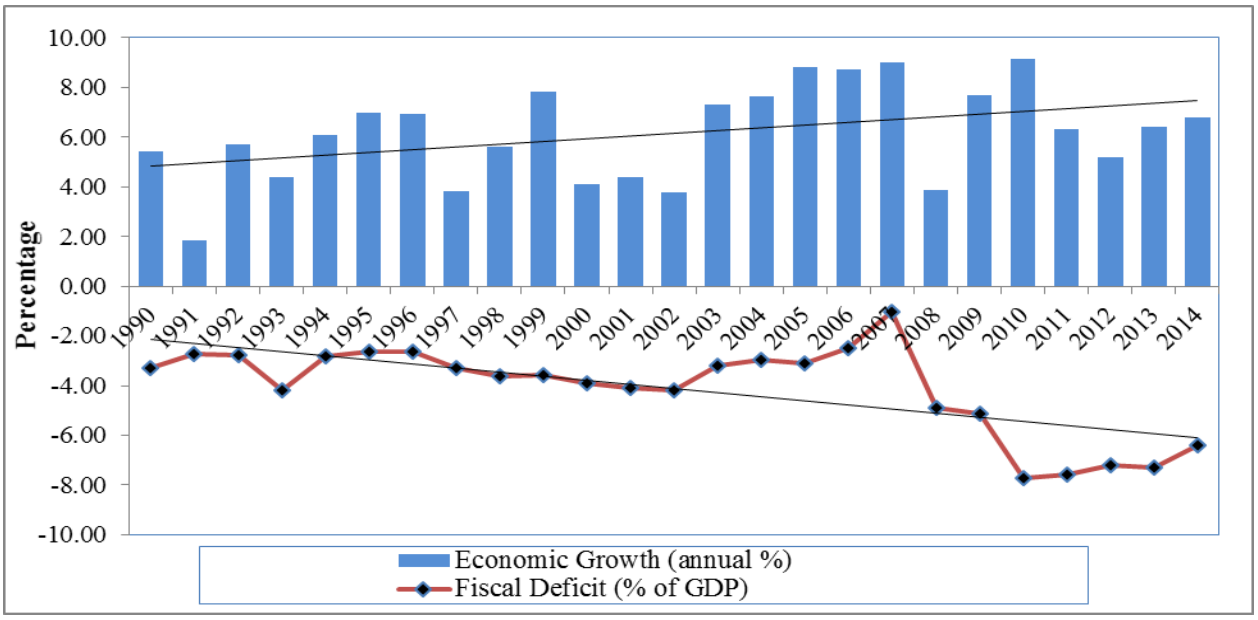
An essential budget position is needed and pre-requisite for making macroeconomic stability. This is recognized as an important factor for promoting a sound and sustainable economic growth. A prudent budget management can mobilize domestic savings, increase the efficiency

of resources allocation and helps to meet the development goal. On the other hand, the weak budget position can provide a way to high inflation, and also high interest rate and providing crowding out private investment. All of these factors hamper economic growth and therefore sound budget position cannot be ignored.

All the South Asian Countries have been confronting the budget deficit almost in all decades. These countries have been suffered from budget deficit ranging from lowest 2.4% to highest 8.75% of GDP. Similarly, observing the budget balance, it is also emanating that heavily from the unsatisfactory revenues creation, and therefore, due the lack of suitable policies measures that tend to persuade tax evasion here and large number of current expenditures and having very weak discipline of budget has been aggravated by feeble cash management. The below table give the true picture of budget deficit % of GDP and GDP growth rate.

Fiscal Deficit and Economic Growth in South Asia

World Bank (2013a), Global Economics Prospects (2019)



In the given figure it is illustrates the trend of fiscal deficit and economic growth in the South Asian region in the last two decades. It can be seen that the trend of fiscal deficit in the South Asian region has continuously increased from 1990 to 2014 while the actual rate varies substantially over time. Conversely, the trend of economic growth in the region gradually increases while the actual growth rate fluctuates significantly over time. TheSouth Asia's average economic growth was around 5.5 per cent in the period from 1990 to 1999, 6.5 per cent in the period from 2000 to 2009, and 6.8 per cent in the period from 2010 to 2014. Economic growth inSouth Asian region decelerated sharply during 2012, extending a slowing

trend following the rapid recovery from the financial crisis in 2008. The slowdown in 2012 mainly reflects a continuing steep deceleration in India, which represents about four-fifth of the region's GDP, to 5.0 percent in the 2012 from 6.2 percent in 2011 and 9.3 percent in 2010. At the same time, growth in other regional economies also slowed. In this regard, growth in Sri Lanka slowed sharply, by almost 2 percentage points in 2012 (WorldBank, 2013a).

However, in order to gain a clear understanding on the existing relationship, the trend of growth and deficitare individually plotted over the period 1990 to 2014 illustrate the fiscal balance and economic growth in the selected South Asian countries.

The above table traces the trend in growth of real GDP and budget deficit. The data shows that during the budget year 2002-03 the budget deficit was recorded 6.2 % of GDP and growth rate was 5.57%. This budget deficit is considered the highest of all budget deficits in the economic history of the country. South Asian Countries faced chronic budget deficit during the 1990s. The pattern of deficit is almost same from 1990 to 1993. However, there was continuous declined in growth rate. Although, deficit was reduced to 6.4% of GDP during the budget year 1996-97 but unfortunately the growth was only 1.93% in that budget year. There was continuous rise and fall both in budget deficits and economic growth during the whole decade.

The data shows that South Asian Countries has witnessed a large and continuous budget deficit over many decades and budget imbalance remains one of the main macroeconomic problems. In past the government tried it very hard to achieve budget balance, including the implementations of reforms with assistance from international borrowing agency, but partially succeeded. South Asian Countries large deficit witnessed during the 1990s. In addition realizing the limitation and weakness of tax structure rigorous reforms were initiated during the early 2000s. At that time the total income was RS. 5,35,091 million in 2000-01 and was increased to RS. 6,19,069 million in 2001-02. This increase in revenue was possible due to sensible budget policy of the government. However, on the other hand the total government expenditure is continuously increasing from 2000 onward.

By analyzing the above data it is proved that whenever the deficit was reduced the growth rate boost up. Like in the budget year 2003-04 the budget deficit was reduced to 2.4% of GDP and same period the growth rate was recorded as 7.5%. In 2000s the highest deficit was recorded in budget year of 2007-08 and highest growth rate was 7.5% in 2003-04. The deficit again reached to its peak in budget year of 2012-13 but unfortunately there is continuous fall

in growth rate after 2004-05. The lowest of growth rate is recorded as 0.4 % in 2008-09. Growth rate during the first five decades (1951-2000) at this time the average economic growth rate of South Asian Countries was higher than the world average growth rate at that period. Thus, its decade wise growth performance shows violent fluctuation during the whole economic history. In the decade of 1990s the growth rate was about 4.6% and significantly there was low growth rate was found in 1990s as compared to first half. Afterwards the decade of 2000s the growth rate on average was about 4.7% (Economic Survey, 2019)

As consequences of budget deficit, and given the unpredictability of financing requirement and availability, the government needs to borrow from banks and from other international borrowing agencies like World Bank. There are several reasons behind the budget deficit of country. For examples:

- slow-moving revenue growth
- wide ranging exemption, evasion of tax, and
- narrow tax base provided and tax incidence that is skewed towards industrial sectors and small number of return filer
- High reliance on indirect tax. On the other hand side the expenditure side which encumbered by defense and interest expenses is not amenable to cuts.

The main focus of government policies was to achieve sustained economic growth. However, due to the number of the macroeconomic problems, such as budget deficit, high indebtedness, low saving and investment, undeveloped financial market, and unstable exchange rate, the government unable to succeed in its policy. Some of these factors also contribute to low domestic saving, high inflation and unemployment. Due to this reason the GDP growth is stuck at level and does not reach to the point which is the requirement of sustainable development.

Despite the fact that most of the countries experienced slow growth rates throughout the 1970s decades, they have made structural reforms during 1980s.So the result, the region has transformed itself from a position of slowest growing region during the 1970s to oneof the fastest growing regions in the world since 1980s (Jain and Singh, 2009 and Radha, 2011).

Fiscal balance in Bangladesh was high during the 1980s but managed to record a surplus in the first half of the 1990s. Since then, the fiscal balance has deficit and remained steady, except 2001 and 2008. When looking at the economic growth, it has continuously increased during 1990 to 2014 period. The country's average economic growth was around 3.2 per cent in the periodfrom 1980 to 1989, 4.8 per cent in the period from 1990 to1999, 5.8 per cent in the period

from 2000 to 2009 and 6.2 per cent in the period from 2010 to 2012. Thus the economic growth was very impressive butit was adversely affected by rapid population growth.

Data Details

To consider the availability of data, four south Asian countries namely, Bangladesh, India, Pakistanand Sri Lanka were considered in this analysis. The data included in the study is secondary panel data for time period 2002-2021. The data for variables Real Economic Growth (GDP), Budget Deficit (BD), Real Investment (INV), Real exchange rate (EXG) in term of US dollar, interest rate (INT) and inflation (INF) is obtained from economic survey (various issues), World Bank data base, State Bank, WDI, Hand Book of Statistics 2020 and different years annual reports of South Asian Countries. All the variables have been taken at constant market price.

Model Specification

The aim of the present study is to determine the impact of budget deficit on real economic growth of South Asian Countries Pakistan, India, Bangladesh and Sri Lanka. The analysis of the present study is based on panel data combined with cross sectional and time series data. This consists of panel Levin, Lin, and Chu and Im, Pesaran, and Shin panel unit root test is used in this methodology. Panel (ARDL), co integration regression analysis method is used in this study for answering the problem of the impact of budget deficit on economic growth as proxied by real GDP in South Asian Countries (Pakistan, India, Bangladesh and Sri Lanka). The present study has also employed panel data analysis.

Theoretical Framework

The analytical framework adopted for this study follows essentially the Keynesian paradigm as used by simple Keynesian framework; desired aggregate demand connection is specified in the goods market as follows:

$$\boldsymbol{Y = C + I + G + (X - M)} \quad \textbf{(1)}$$

With the following behavioral equations:

$$C = a + bY^{d}, assuming \quad b > 0 \quad (2)$$

$$Y^{d} = Y - T \quad (3)$$

$$I = \delta + \gamma i \quad \gamma < 0 \quad (4)$$

$$G = \bar{G} \quad (5)$$

$$X = s + \sigma e, assuming \quad \sigma > 0 \quad (6)$$

$$M = m + \phi Y^{d}, assuing \quad \phi > 0 \quad (7)$$

Y = Output
C = Consumption
I = Investment
G= Government spending which is assumed to be exogenous
X= Exports
M= Imports
Y^d= Disposable income
T= Tax revenue
i= Interest rate
e= Exchange rate.

In equilibrium (after substituting behavioral equations into the desired aggregate demand equation (1), (2) ,(3) ,(4) ,(5) ,(6) ,(7) output will be given as follows:

$$\boldsymbol{Y = a + bY^d + \delta + \gamma i + \bar{G} + (s + \sigma e - m + \phi Y^d)} \quad \textbf{(8)}$$

Similarly

$$Y = a + b(Y - T) + \delta + \gamma i + \bar{G} + (s + \sigma e - m + \phi(Y - T)) \quad (9)$$

Where

$$Y = a + bY - bT + \delta + \gamma i + \bar{G} + s + \sigma e - m + \phi Y - \phi T \quad (10)$$

Separate Y from the equation (10)

$$Y - bY - \phi Y = a - bT + \delta + \gamma i + \bar{G} + s + \sigma e - m - \phi T \quad (11)$$

Re –arrange equation (11)

$$Y(1 - b - \phi)/\phi = (a + \delta + s - m) + (\gamma i + \sigma e + \bar{G} - (b - \phi)T$$

We get

$$Y = A/\Theta + 1/\Theta \ (\gamma i + \sigma e + G - (b - \phi)T) \quad (12)$$

Where

$A = a + \delta + s - m$
$\Theta = 1 - b + \phi$

From equation (12), increasing taxes will reduce output, while increasing government spending will increase output. The budget deficit is given as follows:

$$\boldsymbol{BD = G - T \approx G - (b - \phi)T} \quad \textbf{(13)}$$

We know that Budget deficit represent that when the government expenditure exceeds its revenue it is called deficit of budget. Assuming that the government takes its total revenue from tax sources (which are quite realistic), G-T gives the deficit position of the government. So all the individuals no in position to consume all their income, the total revenue that could be generated from consumption expenditure is (b –Θ) T. Therefore, deducing this from government expenditure will give good budget balance position.

Putting (13) into (12) gives :

$$\bar{Y} = A/\Theta + 1/\Theta\ (\gamma i + \sigma e + FD) \quad (14)$$

This model is expended to incorporate it the money sector as well as the external sector. The money market in an open economy can be represented by the following equations:

Function of demand for money:

$$MD/P = ky + \lambda i,\ assuming\ k > 0\ ,\ \lambda < 0 \quad (15)$$

Function of supply of money:

$$Ms/P = m_1 B/P + m_2 i,\ assuming\ m_1 m_2 > 0 \quad (16)$$

Condition of equilibrium:

$$MD = Ms \quad (17)$$

Where P is the general price level, B is the international reserves held by the central bank and $m_1 m_2$, are coefficients. As the explained money market model, the LM schedule can be specified as:

LM Schedule

$$i = \Psi\frac{B}{P} + \varphi Y, \qquad \Psi < 0\ ,\ \varphi\ 0 \quad (18)$$

Given that the external sector importance of the economy, the impact of the sector is added through the balance of payments schedule.

BP Schedule

$$B = A_2 - \theta_0 Y + \theta_1 e + \theta_2 i, \qquad \theta_0\ \theta_1\ \theta_2 > 0 \quad (19)$$

Here is A_2 is the exogenous components net export function and, $\theta_0\ \theta_1\ \theta_2$ are the coefficients. Similarly equation (18) into (13) gives

$$Y = A_1 + \beta_1 B/P + \beta_2 Y + \sigma e + FD \quad (20)$$

where

$$\beta 1 = \Psi Y/\Theta\ and\ \beta_2 = \varphi y/\Theta$$

Putting equation (19) into (20) produces

$$Y = A_1 + \beta_1/P\ (A_2 - \theta_0 Y + \theta_1 e + \theta_2 i) + \beta_2 Y + \sigma e + FD \quad (21)$$

Re-arranging equation (21) gives

$$Y = C + 1/P\ (\alpha_1 e + \alpha_2 i) + \alpha_3 e + \alpha_4 FD \quad (22)$$

The LM curve is used to determined equilibrium in the money market. The L stands for liquidity and M for Money.

Where

$1 + \beta_1\theta_0 - \beta_2 = \varphi$,

$C = A_1 + \beta_1\frac{A2}{\varphi}$,

$\alpha_1 = \beta_1\frac{\theta 1}{\varphi}$,

$\alpha_2 = \beta_1\frac{\theta 1}{\varphi}$,

$\alpha_3 = \frac{\sigma}{\varphi}$,

$\alpha_4 = 1/\varphi$

on the right hand side of equation (22) in logarithmic generic term gives

$$Y = C + \lambda e + \alpha_2 i - \pi + \alpha_4 BD \quad (23)$$

So, π = represent rate of inflation and $\lambda = \alpha_1 + \alpha_3$

So, here equation (23) represents equilibrium output which is positively related to budget deficit.

From the equation here, time series analysis, the output is affected by its own past level (output dynamics) such that, which is comprises with the accelerator principle. The Equation (23) is written as:

$$Y_t = c + \varpi Y_{t-1} + \alpha_2 i_t + \lambda e_t + \alpha_4 BD_t - \pi \quad (24)$$

Re-arranging

$$Y_t = c + \delta_1 i_t + \delta_2 e_t + \delta_3 BD_t + \delta_4 \pi \quad (25)$$

Where

$Y_t = Y_t - Y_{t-1}$

This captures the change in GDP that is (growth rate of GDP).

Equation (25) is importantly give output (GDP) growth model that is provide long run association between budget deficit and output growth, this can be represent positive association; means that expanding of budget deficit giving high growth, but there are some empirical studies like Fischer, S. (1993). Easterly and Rebelo (1993). Huynh (2007) have analyzed the negative relationship between growth and budget deficit. However the simple Keynesian framework indicated a positive relationship between growth and budget deficit .This clearly indicate the situation between budget deficit and growth making a threshold impact of

budget deficit on the level of growth .All this will provide the empirical modeling relation of growth-deficit in this analysis.

Empirical Model and specification

In determining the exact empirical model, the examination depends on the hypothetical theoretical system. From both the interest and supply sides of the economy, factors, for example, loan cost interest rate, conversion scale, swelling or inflation, Budget shortfall, and investment venture (change in capital stock) are distinguished as the key factors clarifying development. Nonetheless, it is fitting to incorporate into the exact model those change factors that likewise impact monetary development. The key factors in the observational model are characterized as pursues as follows.

$$GDP_{ti} = b_0 + b_1\, BD\, it + b_2\, EXCit + b_3\, INF\, it + b_4\, INVit + b_5\, INTit + U_{it} \quad (26)$$

Where b_0 is the intercept and $b_1, b_2 \ldots\ldots\ldots b_5$ are the co-efficient.

Dependent variable

$Y = GDP = Growth\, rate\, of\, real\, GDP$

Independent variables

INT = InterestRate = LendingRate

EXC = represent Exchange Rate (Depreciation/ appreciation)

INF = Inflation rate measured by consumer price index.

INV = represent investment (Gross fixed capital formation)

BD = BD/GDP = Budget deficit/GDP, excluding grants

Other than investment venture and Budget shortage; other control factors (variables) incorporated into the model are, to be specific, financing cost (interest rate), conversion scale devaluation/gratefulness (exchange rate), and swelling (inflation) has a critical job in financial development. Higher financing costs diminish the development of buyer spending and growth development. This is on the grounds that high loan fee makes more motivation to spare instead of spend, makes borrowing more costly, along these lines less spending on credit and less venture or investment. Thus, an opposite relationship is normal between interest rate and growth development. Conversion scale advancement impacts on the monetary development process. On equalization we expect a positive connection among devaluation and monetary growth development.

Inflation is another noteworthy variable impacting yield development rate. This variable is particularly critical in developing nations, where nourishment cost and different exogenous elements including high imports of foods and intermediate items assume essential role. When all is said in done, large amounts of inflation may undermine financial development. Nonetheless if the inflation rate is low, steady and manageable, it might be translated as a marker of macroeconomic security that would upgrade development. What's more, if the economy is at balance higher expansion should affect antagonistically on development. Henceforth, we hope to get inverse association with yield development and growth.

Budget deficit is another noteworthy variable affecting yield development and growth rate. This variable is noted by a few investigations to be particularly enormous for most developing nations including South Asian Countries, where spending discipline assumes vital job. By and large abnormal amounts of Budget deficiency may undermine financial development. In any case if the spending deficiency is low, steady and practical, it might be interpreted as an expanded demand for goods and services. Also, if the economy is underneath its balance on Keynesian cross, higher Budget deficiency, that is expanded government expenditures, ought to empower development. Therefore we hope to get positive association with output and growth expansion.

In view of the general structure gave and the previous factors recognized, the direct development condition is unequivocally determined as follows:

The condition of equation provide a plan of the hypothesis that the growth in developing Countries relies upon the development rate of Budget deficit as a proportion of GDP, real investment, the rate of interest, rate of devaluation of the local currency and inflation rate.

Panel Unit root testing

Levin, Lin, and Chu and Im, Pesaran, and Shin panel unit root test is used in this methodology. We know that a stochastic procedure is assumed to be stationary there if its mean and variance became constant over time and covariance among these two times periods depends only distance between the time period and not on the actual time period in where the covariance can be computed respectively (Gujrati, 2008). Here one problem exist about the data that is not stationary and use in an econometric equation, here exist a problem of spurious regression, which lead to unpredictable outcome. For this purpose it is necessary to check the panel unit root testing for Stationary properties. likewise, for this reason Levin, Lin, and Chu test is used. The test without trend and with trend as given below respectively.

Test without trend

$$\Delta yit = \beta 1 + \delta Y_{t-1} + \sum_{j-1}^{p-1} aj\, \Delta y_{t-1} + uit \quad (27)$$

Test with trend

$$\Delta yit = \beta 1 + \beta 2\ t - j + \delta Y_{t-1} + \sum_{j-1}^{p-1} aj\, \Delta y_{t-1} + uit \quad (28)$$

U_{it} is the error term Δy_{it} represent the difference term of the corresponding panel series data, and p is the lag order for Δy_{it} also rise and fall for cross sections and class auto regression. We test whether $\delta = 0\ and\ if\ it\ is\ rejected,$ y trend Δy_{it} is stationary around the deterministic trend.

Panel Co-integration: the ARDL approach and Johanson co integration test.

The panel ARDL approach to co-integration has been chosen for this analysis, which is comparatively a best procedure for detecting Co integration amongst variables. This technique is consider to be the more well-organized technique in determining co-integrating association in small as well as large samples as compared to others co-integrating techniques. Pesaran and Shin (1999) and Pesaran, et al. (2001). Here ARDL model become standard least square regression that has includes the explanatory variables lags and the dependent variable lags. (Greene, 2012) The ARDL Model is usually denoted by ARDL (p,q_1,q_2…….q_k) here P is the number of the lags of dependent variable and q1 represent lag of the first explanatory variable and, Similarly , qk is the number of Lags *K-th* explanatory variable. Another very important feather of the technique is that this can be applied irrespective of whether the variables are I (0), I (1) or fractionally co integrated [Pesaran and Pesaran (1997)].

More particularly, in the first step the stationary of variables will be tested through Levin, Lin, and Chu and Im, Pesaran, and Shin panel unit root test is used in this methodology. That is all of variables are integrated of order I(1) . In the second pace the subsequent unrestricted Error Correction Mechanism (ECM) version of the panel ARDL model is estimated for every of the examine variable.

The error correction model of panel ARDL is given below for the above given equation

$$\Delta GDP_{it} = B_0 + B_1 \sum_{i=1}^{p} \Delta GDP_{t-i} + B_2 \sum_{i=1}^{p} \Delta BD_{t-i} + B_3 \sum_{i=1}^{p} \Delta EXG_{t-i} + B_4 \sum_{i=1}^{p} \Delta INF_{t-i} + B_5 \sum_{i-1}^{p} \Delta INT_{t-i} + B_6 \sum_{i=1}^{p} \Delta INV_{t-i} + \delta_1 GDP_{t-i} + \delta_2 BD_{t-1} + \delta_3 EXG_{t-1} + \delta_4 INF_{t-1} + \delta_5 INT_{t-1} + \delta_6 INV_{t-1} + \mu_{it} \quad (29)$$

Where Δ denotes the drift component and $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ are the coefficients of respective parameter and u_{it} is pure white noise for the above equation. Furthermore there is

summation sign which represent the error correction model and dynamics while the second part of the equation represents to a long run relationship.

On the basis of the above equations, the Johanson co integration test is performing usually for the occurrence of the long run association. Therefore, F-test is useful technique for combined null hypothesis that coefficients on the levels are equally unlike to zero. If the test figures exceed their particular upper critical value, it might be argue that there is indication of long run equilibrium correlation, otherwise, to reject null hypothesis. The restricted long run model can be extract from the reduced form. In this case the subsequent model will be use to locate out the long run association among the variables for equations.

$$\Delta GDP_{it} = \int_0 + \int_1 BD_{t-1} + \int_2 INR_{t-1} + \int_3 EXC_{t-1} + \int_4 INT_{t-1} + \int_5 RINV_{t-1} + \varepsilon_{it} \quad (30)$$

$$BD_{it} = \gamma_0 + \gamma_1 EXC_{t-1} + \gamma_2 RINV_{t-1} + \gamma_3 Y_{t-1} + \mu_{it} \quad (31)$$

To find out here, if there is test statistics come between these two bounds, so here the test becomes questionable (inconclusive) (Pesaran & Shin, 1999; Pesarn, et al., 2001).When the first difference of the variables jointly zero. The long run coefficients of the error correction model (ECM) are estimated through ARDL approach to co-integration and use of the ordinary least square (OLS). The lag structure of ARDL of the short run dynamic, in this thesis has resolute by the Akaike Information Criteria (AIC). The correspondence measurement is base on the ARDL specification, which is a simple linear transformation (Pesaran & Pesaran, 1997).

ANALYSIS

Descriptive statistics

The variable which is used in this analysis represents the mean, median, maximum and minimum values, kurtosis, skewness and standard deviation of the variables are presented at the table below

	GDP	EXG	BD	INF	INV	INT
Mean	5.327140	4.405319	-1.554217	7.246542	3.260745	3.508830
Median	5.981847	4.360362	-1.304207	6.691213	3.330990	4.669164
Maximum	8.681229	5.292120	4.823228	22.56450	3.736497	9.248012
Minimum	-6.596081	3.722037	-9.543199	2.135038	2.647637	-13.64214
Std. Dev.	2.657495	0.387230	2.545929	3.620434	0.309394	3.975726
Skewness	-1.823759	0.319093	-0.488757	1.702256	-0.590533	-2.169653
Kurtosis	6.944160	3.389904	2.228113	2.365978	2.181201	9.395176

We analyze to see the average economic growth which is measured by GDP that is 5.3 % with a minimum -6.5 % and maximum 8.6%.Intersest rate is 3.5 % with a minimum -13.6 % and

maximum 9.2%. Budget deficit has an average -1.55 % with a minimum -19.6 % and maximum 5.2%.Data analysis indicates if the skewness and kurtosis is a range between -2 to +2 is the sign which represents the distribution is normal (Kothari, 2021).One the other hand, if if the skewness and kurtosis is above the range -2 to +2 is the represents the distribution is not normal.

If the linear combination of the variable is stationary at same order, then co integration test can be applied. In a panel data it is required to investigate the stationary of variables in order to avoid the trouble of spurious regression. To fulfill this task the first step involved for possible co integration is to analyze the properties of stationarity. In general, many macroeconomic variables are non-stationary (Nelson and Plosser, 1982).For this purpose Levin, Lin, and Chu and Im, Pesaran, and Shin panel unit root test is used for all the variables (GDP, BD, INV, INF, INT, and EXG) as well as at first difference is presented in tables as below.

Levin, Lin, and Chu and Im, Pesaran, and Shin panel unit root test with no trend and intercept only. (Maximum 2 lags at level)

Variable	Maximum Lags	Test-Statistics	P-Value	Remarks
GDP	2 (AIC)	-2.098116	0.2421	Not stationary
BD	2(AIC)	-2.299406	0.9179	Not stationary
Exg	2(AIC)	2.421031	0.9979	Not stationary
Inf	2 (AIC)	-3.675335	0 .4635	Not stationary
Int	2 (AIC)	-2.252825	0.0820	Not Stationary
inv	2 (AIC)	-2.213212	0.2046	Not stationary

Levin, Lin, and Chu and Im, Pesaran, and Shin panel unit root test with no trend and intercept only. (Maximum 2 lags). (1st Difference)

Variable	Maximum Lags	Test-Statistics	P-Value	Remarks
GDP	2 (AIC)	-0.168116	0.0001	Stationary
BD	2 (AIC)	1.339406	0.0000	Stationary
Int	2(AIC)	-1.25282	0.0120	stationary
Exg	2(AIC)	-0.421031	0.0287	Stationary
Inv	2(AIC)	-1.375335	0.0000	Stationary
INF	2(AIC)	-1.528259	0.0050	Stationary

Unit Root Test with Intercept and Trend (at level)

Variable	Maximum Lags	Test-Statistics	P-Value	Remarks
GDP	2(AIC)	-2.098116	0.9421	Not stationary
BD	2 (AIC)	-4.299406	0.29790	Not stationary
Exg	2(AIC)	-5..42103	0.9979	Not stationary
Inf	2(AIC)	-2.6753	0 .4635	Not stationary
Int	2(AIC)	-3.25282	0.1120	Not stationary
Inv	2(AIC)	-2.213212	0..4504	Not stationary

Unit Root Test with Intercept and Trend (1st Difference)

Variable	Maximum Lags	Test-Statistics	P-Value	Remarks
GDP	2 (AIC)	-1.168116	0.0003	Stationary
BD	2 (AIC)	-0.339406	0.0000	Stationary
Exg	2(AIC)	-1.421031	0.0344	Stationary
Int	2(AIC)	-1.375335	0.0109	Stationary
INF	2 (AIC)	-0.528259	0.0002	Stationary
inv	2(AIC)	-0.213212	0.0450	stationary

Many time series are needed to be properly differenced in order to achieve the stationarity. As result, we proceed to test and confirm the stationarity of the variables after their first difference. Furthermore, all the remaining variables are stationarity after first difference with trend, and, hence, do not following any trend.

The panel ARDL (Auto Regressive Distributed lag) Model ***Approach to Co-integration***

The procedure of panel ARDL model consists of two stages. If we analyze the first stage and evaluate it, the test is conducted to examine the existence of long run connection among the variables and identified series. After performing the test and conducting by comparing F-statistics of the unrestricted error correction model as comparing with the critical value F-statistics. If value of F-Statistic of unrestricted error correction model becomes higher than critical value of bounds F-Statistic it will be completed that there exists a long run association between the variables. The null hypothesis of the below equations can be defined as no long relationships between dependent variables and independent variable and similarly null hypothesis can be constructed for other two equations

$$DGDP = B_0 + B_1 \sum_{i=1}^{p} DBD_{t-i} + B_2 \sum DINV_{t-i} + B_3 \sum DEXC_{t-i} + B_4 \sum DINF_{t-i} + \sum DGDP_{t-i} + \int 1BD_{t-1} + \int 2INV_{t-1} + \int 3\ Exg_{t-1} + \int 4\ INF_{t-1} + \int 5\ GDP_{t-1} + \mu t \quad (3.23)$$

$$DBD = \propto_0 + \propto_1 + \propto_1 \sum DBD_{t-i} \quad \propto_2 \sum DEXC_{t-i} + \propto 3 \sum INF_{t-i} + \propto 4 \sum DINR_{t-i} + \gamma_1 BD_{t-1} + \gamma_2 EXC_{t-1} + \gamma_3\ INF_{t-1} + \gamma_4\ INV_{t-1} + \mu 2 \quad (3.24)$$

If we find-out a long run association the coefficients of equation (3.23) are estimated by maximum lags of 2.The Akaike Information Criteria (AIC) has selected a model of ARDL (, 1, 2, 2) for equation (3.23).

Thus, to find-out the long run association for equation (3.23). It is therefore, likely that the computed value of F-Statistics is greater than all of critical value of zero bound tests (10%, 5%, and 2.5%). There we have to reject our null hypothesis of no relationship and found that all of our independent variables are strongly co-integrated with dependent variable.

Johanson co integration test.

Now for this study the Johanson method for co integration is considered. The Johanson (1988) technique of co integration is a method that allows computations of how much independent co

integration relationship among the variables exist to be considered. There are two test statistics to be considered as trace and maximum Eigen value of statistics will be applied to this study. In addition, the lag length criteria is selected through AIC which minimizes the overall sum of residuals, in otherworld's maximizes the likelihood ratio for the lag selection.

Estimation results

Estimated variable	Co-integration	What next
GDP	YES	Estimate ECM (Error correction model)
BD	YES	Estimate ECM (Error correction model)
EXg	Yes	Estimate ECM (Error correction model)
INF	YES	Estimate ECM (Error correction model
Int	YES	Estimate ECM (Error correction model
INV	YES	Estimate ECM (Error correction model)

From the table it can be easily concluded that gross domestic product and budget deficit have long run co-integration, and next we go for error correction model to estimate the impact of gross domestic product on other variables such as exchange rate, investment, inflation, interest rate, investment and budget deficit. Now we can draw short run and long run panel ARDL approach for estimation analysis.

Estimate Coefficients (long run) ARDL Approach (1.1.2.2)

Regressors	Coefficients	T. Statistics	P-Value
EXC	-0.149959	-2.105723	0.0056
BD	-0.850858	-1.223146	0.0411
INT	-0.003576	-1.899517	0.0104
INF	13.46824	6.103438	0.1754
INV	0.174694	5.460768	0.7771
c	9.383313	6.460142	0.0000

On the basis of results of the above table it is concluded from the present study that there exists a long run association between (GDP) and budget deficit (BD). The co-efficient of budget deficit is negative and significant. It means that budget deficit hampers economic growth in long run.

Based on above table the value of F-statistic shows long run associations among variable. Examining the coefficient of long run estimated in the above table explaining long run relationship with economic growth at five percent of significance level. The sign of the coefficients of budget deficit is negative. It means that the budget deficit affects economic growth in long run negatively.

The co efficient of Exchange rate in long run also negative and significant means when there is one percent change in exchange rate will decrease the GDP by 14 units.

Long run co efficient of Interest rate become negative and significant and has negative relationship with economic growth.

Estimated Coefficients (short run) ARDL Approach (2.2.4.4)

Regressors	Coefficients	t. Statistics	P-Value
EXC	0.3424995	2.105723	0.0075
BD	0.507659	1.78654	0.0011
INT	-0.650350	-8.098675	0.9104
INF	1.657778	3.32567	0.6754
INV	1.753897	1.32145	0.0077
c	4.785232	0.43256	0.0000

To measure the short run association between economic growth and budget deficit, the equation is further tested through error correction mechanism. When the model is tested for short run, on analysis it is importantly found here that there is strongly short run association between economic growth and budget deficit. The analysis of the model reveals that budget deficit over growth has significant contribution in short run.

Theory also shows that budget deficit is also an important statistic to measure the economic stability of the country. Both Budget deficit and growth are known as the key issues of any developing country, which is a debatable concept of macroeconomic portfolio. Therefore, the present study also measures the impact of budget deficit on GDP and it is therefore implemented further affects the economic growth of the country or not. This study on the basis of F-statistics found that there is long run relationship between Gross Domestic Product and Budget deficit 10%, 5%, and even at 1% level of significance

Error Correction Model Estimate Using ARDL Approach (2.2.4.4)

Regressors	Coefficients	T. Statistics	P-Value
BD	0.008090	0.850539	0.4010
EXG	-4.4131365	-0.069286	0.9452
INT	0.098526	1.891395	0.0663
INF	-0.002102	-3.601943	0.3777
INV	-0.087632	-0.896543	0.0010

As all of above tables prove long run association of independent variables with dependent variables. Then, going for estimation of error correction model based on the linked long run estimates as shown in the table. Gross domestic product (GDP),exchange rate (EXG) and budget deficit (BD).Therefore, the coefficient of error term become significant with the absolutely correct sign. Analyzing the ECM coefficient that is -0.837290 (83 %) which suggests that there is highly speed of convergence towards equilibrium whenever the overall

economy is becoming shocked. Here we see the convergence to the state of equilibrium is helped by the change is the level of economic growth, Gross domestic Product, investment and Budget deficit. Thus, the overall effect of the error correction model could lead to reliability because it makes all diagnostic tests correctly, therefore, the model is seeing highly significant based on the probabilities of F-Statistic.

In table above the value of Durbin Watson Statistic is 1.92. This test used to find serial correlation or in other words to measures the linear association between the adjacent residual from a regression model. Similarly what say the rule of thumb if we see the value of Durbin Watson (DW) is 2 or near to 2 there will be no serial correlation. If the values of DW test less than 2 and near to 1, there will be positive autocorrelation. Similarly, if value of DW test greater than 2 or near 4 will represent negative autocorrelation. However, Gujarati (2008) argue that the main limitations of DW statistic are that when the model includes dependent variables lags in the right hand side, then DW test is no longer valid.

The analysis of the above tables as well as economic theories prove that investment is an important variable for the country economy. Now the question of interest is that whether investment of the country also suffers from budget deficit or not. Whether there is some sort of relationship between these two variables are not. That is why we estimate the long run and short run association of gross domestic product with budget deficit.

KEY POLICY RECOMMENDATIONS, CONCLUSION ANDLIMITATIONS

Conclusions

If we see the result of this study on the basis of different tests performed to determined the short run and long run association between budget deficit and economic growth of South Asian Countries. Now we are in a position to give and answer the questions of research which has been set in the present study. This analysis revealed that our variables gross domestic product, budget deficit, exchange rate, human capital, inflation and investment are examined not stationary at Level. Now we have taken the 1st deference of the non-stationary variable with intercept and these variables become stationary at 1st difference with intercept only.

The analysis and result after obtaining from the unit root test, the results coming from independent variables which are I(1) and I(1) means that all the variables are not in level, so in this situation we use panel (ARDL) approach for possible co-integration technique to measure short run and long run relationship between gross domestic product and budget deficit and other macroeconomic verifiable.

Now from the result of panel ARDL test it has been accomplished that budget deficit has long run co-integration relationship with economic growth. The budget deficit negatively affects the economic growth in long run. If we see on the other hand side, exchange rate and investment have short run relationship with budget deficit in this study. next for long run co-integration analysis we have used the error correction model technique to determined the the speed of adjustment of the previous year disequilibrium to the current year equilibrium, therefore, the ECM showed evidence of negative and significant relationship between gross domestic product and budget deficit.

The key outcome from this study indicated that budget deficit hampers economic growth in long run, however, this is against the Keynesian school of thoughts that suggest as an increase in budget deficit would enhance aggregate output and growth. If we see on the other hand real investment and exchange rate have a positive and significant relationship with budget deficit in short run, that's why Keynes contribution are in short run rather than applicable in long run. In addition, we have seen in this study the association between the budget deficit and interest rate which is negatively related to each other and have a significant effect in long run analysis. This study examined strong indication that budget deficit increase money supply might lead to inflation. Therefore, the inflationary effect of government deficit depend upon the means by which the deficit is financed and the impact on the aggregate demand

Another major outcome drawn from this study is the impact of budget deficit on exchange rate is as inconclusive in long run as shown in the theoretical literature. Thus, from the analysis it can be completed from this study, that the empirical facts do not shed any definitive light on the association between the budget deficit and economic growth. Overall, from the evidence it is clear that budget deficit negatively affect economic growth in long run. Many researcher also argue that budget deficit improve the overall economic activities in short run. Here one question arises that it depending on how the budget shortfall and development is measured, the model which is used in econometric problem is adopted, the econometric technique also very important or methodology presented or adopted, different conclusion can be reached.

Policy and Recommendation

The main outcomes comes from the study that budget deficit has a negative and significant impact on economic growth of high deficit South Asian Countries. So there is a way to make or formulate policies for controlling budget deficit in upcoming years. Therefore the important

achievement from the analysis that reduction in budget deficit further improves the empirical study which will improve balance sheet and investment in the country.

If we see the situation of South Asian Countries particularly Pakistan, India, Bangladesh and Sri Lanka which is facing huge deficit in every year. There are many causes of it.

Firstly tax collection of these countries is very poor and weak and that is shown the economic history and the process of revenue generation is not good due to high indirect tax than direct tax and the result almost fifty percent of population not paying tax and that is the main thing of country's revenue generation source. It almost gives a glance to complicated tax system. The complicated law, the tax exemptions situation and incentives have more add up budget deficit in the country. Now the question is that how to tackle this situation. It mainly the government should make such kind of arrangement which will increase direct tax and reduce indirect tax means high tax from richest people and lower tax from poor people. on the other hand tax net is too small should be increase that more people will pay the tax. Similarly the unproductive tax evasion must be reduced. Through this enhance economic growth with the effect of multiplier process.

Secondly, if we see the expenditure side of these highly deficit countries, mainly the defense services and debt have a major role and taking huge amount of revenue. We should discourage budget deficit through very high borrowing. The balance of payment of the country shows a persistent deficit in country's economic history. This will further make deficit and fluctuations in exchange rate. Which is very harmful for economy's growth? Therefore the country's revenue gap is financed from external borrowing, and borrowing from the banks and public domestically, again create budget deficit in the country directly or indirectly.

The important policy implications that can be drawn from this study are budget liberalization, sound and stable macro economies and policies for achieving economic growth with the provision of some important factors of the economy like health facilities, education facilities, infrastructure and most important strong and judicious tax system and capable professional government. Therefore adjustment in budget sector needed to reduce unproductive expenditure that can be proven for sustainable economic growth. Monetization and sustainable budget policies are needed for effective running of economic outflow and for encourage economic growth faster.

From all these facts to make arrangements for money supply and prices, devaluation should be avoided and government should take action to stabilize external value of its currency. From

this when the value of external currency stabilizes or moves upward there will be positive impact on budget balance of the country. Therefore to prove this commercial policy must be adopted. So that credit must be obtained from banks and government sector and all these are to be utilize for development and growth purposes and investment sector not for current expenditure.

The reason behind this government should come forward and take some actions to control budget deficit in upcoming years. How, investment opportunities should be provided through when lending rate or interest rates become low. The overall employment can be increase when there are investment opportunities in the country. If there is a strong tax collection system then there is generation of the revenue for the government so that government will focus on stability of the economy as a whole.

Proper allocation of revenues and resources are much needed, on the other hand the officials of the government should minimize their expenditure as much as possible.

Summing up, synchronization policies should be adopted. That is budget policy and monetary policy, and government should pursue it. Only cutting expenditure is not enough to sustained economic growth. One of the main aim of this research to be helpful for other researcher to validate their result in other different countries. In our study the model which is adopted helpful for other economies for the same study and for facilitation of their result. We use different variables in this analysis which is also in context of economic theories, and highlight the problems of budget deficit.

Limitations of the present Study

We see like in every study, some kind of limitations is there. firstly, this analysis depends upon four high budget deficit South Asian Countries. and that is the effect of budget deficit on economic growth and other major economic variables are vary among different countries. Furthermore, these analyses ignored the demand and supply side factors in full detail but taken the values only .In other words, this analysis also ignored the causes of budget deficit rather than the effect of budget deficit on other major economic variables. Lastly, but not the least in this study the sample size is very small.

We know that sustainable budget deficit is very helpful for evaluation of policy recommendation depends upon on the stability of past data continuously; one of the main limitation of the present study data inconsistency that is different sources data has been used in this analysis. The difference may be the values which means the final result is mislead for

conclusion and policy structures.

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