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Economic, Political, and Institutional Determinants of Budget Deficit: A Dynamic Panel Data Approach to South Asian Countries

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ABSTRACT

The study conducted on South Asian countries spanning from 1995 to 2023 using the pooled mean group (PMG) and mean group (MG) approaches for the dynamic panel data has yielded insightful findings regarding the long-run relationships between economic, political, and institutional determinants of the budget deficit. Through empirical analysis, the study confirmed the presence of these relationships, highlighting key factors that significantly impact budget deficits. Specifically, inflation, debt servicing, slow economic acceleration, and large government size were identified as major determinants of budget deficits in the region. Interestingly, the study also incorporated a dummy variable for elections, revealing a positive relationship between election years and budget deficits. This suggests that governments may increase spending during election years to gain political support, leading to higher deficits. These findings provide valuable insights for policymakers, emphasizing the importance of addressing these factors to achieve fiscal sustainability and economic stability in South Asian countries.

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1. Introduction

The incessant deficit status is one of the most essential macroeconomic issues in recent times that elevated noteworthy concerns regarding the long-run sustainability of fiscal policy and has motivated many studies in this aspect. South Asian economies' including Pakistan are persistently experiencing this situation. Budget deficit affects policies that are either related to macroeconomics or microeconomics it has abridged the government's ability to use fiscal policy of reducing taxes or increasing expenditures and has also led it to increase public investments. Consequently, governments have to take loans from international or domestic sources to control the deficit situation. Many governments enhance taxes when they face complexity in paying back debt which directly affects the living standards of people. On the other hand, to maintain full employment without inflation government has to increase interest rates as there is less

opportunity for investment when the economy is running at full employment. While deficit financing escorts less investment consequently lowers output in the long run.[1]

1.1. Overview of Budget Deficit in Some Key South Asian Countries

From 1993 to 2023, the Pakistan government's revenue, expenditure, and net lending/borrowing showed varying trends. Government revenue ranged from 12.31% to 17.502% of GDP, with an overall increasing trend over the years. Government expenditure fluctuated between 15.182% and 23.124% of GDP, generally increasing with some fluctuations. Net lending/borrowing ranged from -8.984% to -0.148% of GDP, indicating periods of deficits and surpluses. Overall, there was a trend of increasing deficits, especially in the early 2000s and after 2010, reflecting the challenges in balancing government finances during those periods. The minimum net lending/borrowing occurred in 2003, with a value of -0.148% of GDP. The maximum net lending/borrowing occurred in 2019, with a value of -8.984% of GDP.

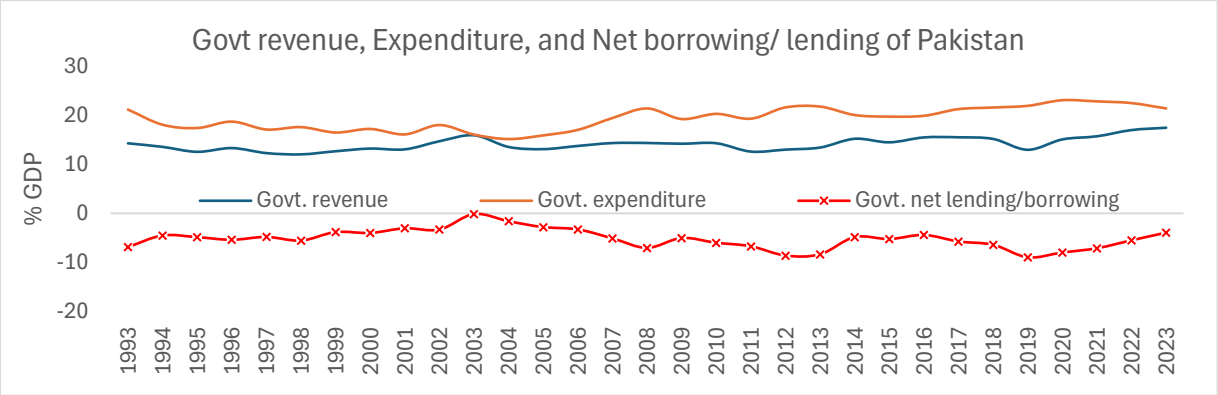

Figure 1: Budget Deficit of Pakistan, Source: WEO, 2023

The figure 2 explores the situation of a budget deficit in Bangladesh we can see that the government's net lending/borrowing varied significantly, reflecting the fiscal challenges and economic conditions during this period. The highest deficit, indicating borrowing, was recorded in 2019 at -5.433% of GDP. This suggests that in 2019, the government's expenditures exceeded its revenues by 5.433% of GDP, leading to a need for borrowing to cover the shortfall. On the other hand, the smallest deficit, indicating the lowest borrowing, was observed in 1993 at 0.502% of GDP. This suggests a relatively balanced budget in 1993, where the government's expenditures were nearly matched by its revenues. Overall, the data shows a trend of increasing deficits, especially in the later years, indicating a growing imbalance between government revenues and expenditures.

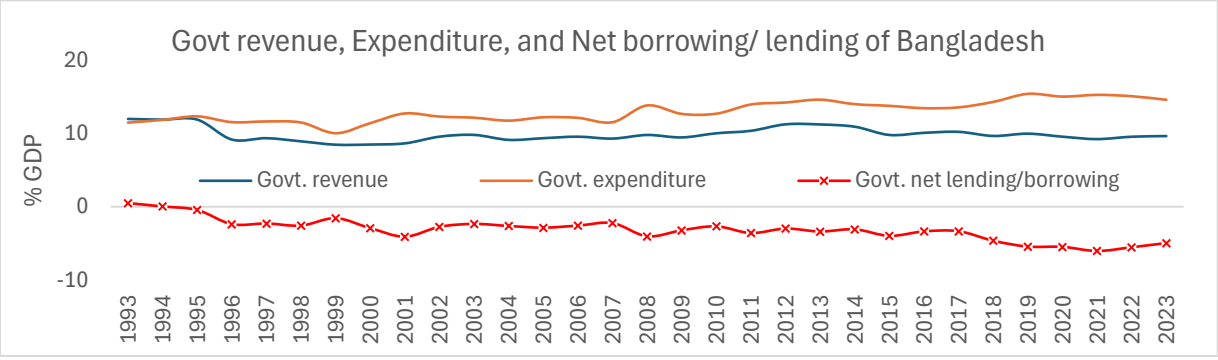

Figure 2: Budget Deficit of Bangladesh, Source: World Economic Outlook

[1] cited Stiglitz (1999).

India's government experienced fluctuations in net lending/borrowing, reflecting its fiscal position. The highest deficit was recorded in 2020 at -12.255% of GDP, indicating significant borrowing to cover government expenditures exceeding revenues. This was likely influenced by the economic challenges posed by the COVID-19 pandemic.

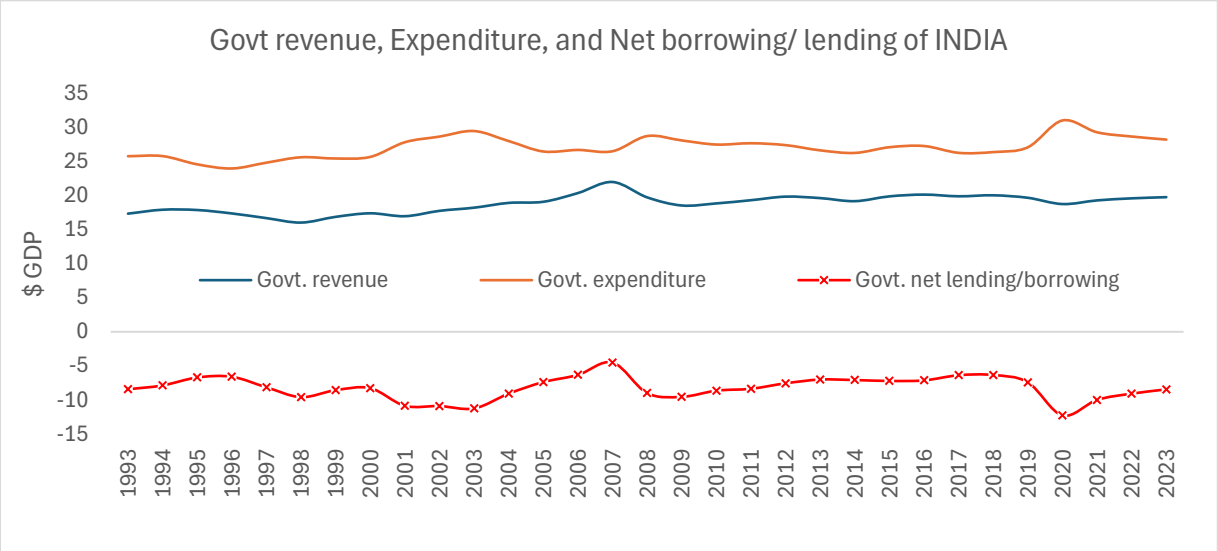

Figure 3: Budget Deficit, Government Expenditures and Revenue of India % GDP, SOURCE: World Economic Outlook

Conversely, it is depicted in Figure 3 that the smallest deficit was observed in 2007 at -4.505% of GDP, indicating a relatively better fiscal balance. Overall, the data shows a trend of varying deficits, highlighting the importance of fiscal management in ensuring sustainable government finances.

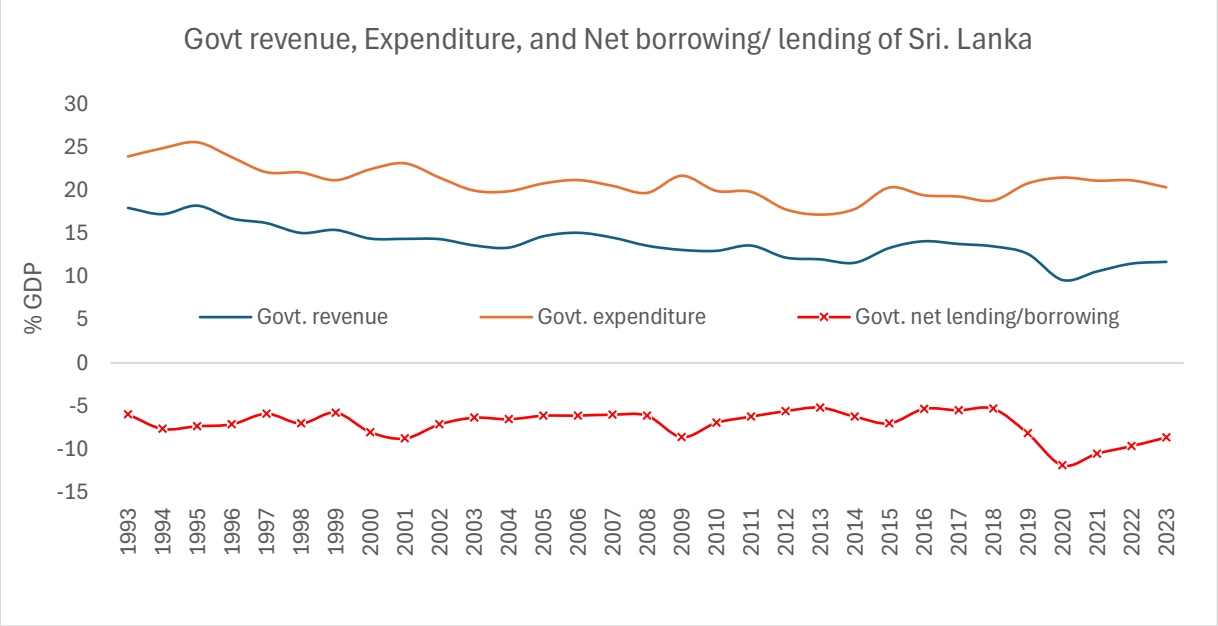

Figure 4: Budget Deficit of the Sri--Lanka

Figure 4 below depicts the situation of the budget deficit of Sri-Lanka, Sri Lanka experienced relative fiscal stability in certain years despite the overall fluctuations in net lending/borrowing. For example, from 2011 to 2013, the deficits remained relatively stable, ranging from -6.236% to -5.185% of GDP. This period may indicate a temporary equilibrium in

government finances, possibly due to consistent revenue streams or controlled expenditure. Additionally, from 2016 to 2018, the deficits remained relatively stable, fluctuating between -5.338% and -5.323% of GDP, suggesting another period of relative fiscal stability. These years of stability could indicate periods where the government managed to keep its revenues and expenditures relatively balanced, despite external challenges and economic fluctuations.

1.2. Overall Budget Deficit Position in All South Asian Countries

Figure 5 below shows the trends in the over budget deficit in all the south Asian countries from 1993-2023. Pakistan (PAK) had varying deficits, reaching a peak of -8.984% of GDP in 2019. Bangladesh (BANG) generally maintained lower deficits, with the lowest at 0.038% of GDP in 1994. India had deficits ranging from -12.255% of GDP in 2020 to -6.334% in 2018. Sri Lanka's deficits ranged from -11.883% of GDP in 2020 to -5.185% in 2013. Bhutan showed deficits in some years and surpluses in others, with the highest surplus at 7.905% of GDP in 2010. Nepal had deficits ranging from -6.192% of GDP in 1993 to -5.692% in 2023. Maldives had deficits ranging from -8.373% of GDP in 2020 to -0.337% in 2003. Afghanistan (AFG) had deficits ranging from -5.079% of GDP in 2019 to -0.025% in 2008.

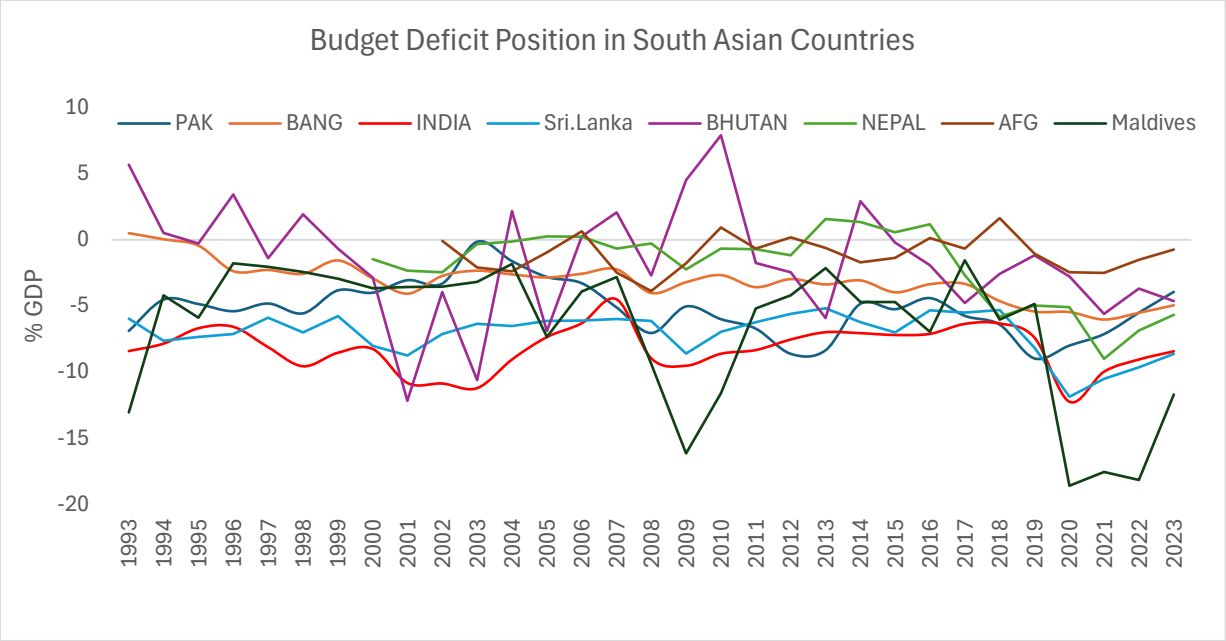

Figure 5: Budget Deficit Situation in all the South Asian Countries, Source: WEO

The data also highlights several key other findings regarding the budget deficits of South Asian countries. Firstly, there is a notable variation in deficits across countries, with some experiencing more significant fluctuations over the years compared to others. Secondly, certain countries, such as Bhutan and Nepal, have shown periods of both deficits and surpluses, indicating varying fiscal management strategies. Thirdly, the impact of external shocks, such as the COVID-19 pandemic, is evident in the data, with several countries experiencing a significant increase in deficits in 2020. The pandemic disrupted economies, leading to decreased revenues and increased expenditures for healthcare and economic stimulus measures, thereby widening budget deficits. The data underscores the importance of sound fiscal policies and management to mitigate the impact of such shocks and ensure fiscal sustainability.

Several studies have been conducted in the world to identify the key determinants of the Budget deficit. Some have stressed the role of the debt servicing Bayar and Smeets (2009); Dzhumashev (2014) others have focussed on the role of the per capita GDP (Bayar & Smeets, 2009; Roubini, 1991). The researchers like Lin and Chu (2013) identified inflation as the key driver of the budget deficit while the role of political government is important (Ana-Maria &

Alexandru, 2015; Edin & Ohlsson, 1991; Roubini, 1991). While the role of political government is as important as the role of election, therefore, election has a positive and significant role in the budget deficit as, the political government must increase the financing before or during the election year to secure the vote bank or get re-elected (Acosta & Coppedge, 2001; Ayuso-i-Casals, Hernández, Moulin, & Turrini, 2009; De Haan & Mink, 2005; Maltritz & Wüste, 2015; Mulas-Granados, 2003). While the government size (Ana-Maria & Alexandru, 2015; Woo, 2003) and corruption (Javid, Arif, & Arif, 2011; Žurauskas & Verseckaitė, 2015) are also the key factors affecting the budget deficit. So, keeping in view the early studies on determinants of the budget deficits, it can be concluded that the low tax revenues, high government spending, economic slowdown, interest payments, unforeseen events, and structural issues are important factors that account for the budget deficit in the world.

The same issues have been with the south Asian countries. From Figure 5 it is evident that these countries almost face unique economic, political, and institutional challenges that can significantly impact their budget deficits. South Asian countries vary widely in terms of economic development, governance structures, and political systems therefore, identifying the key determinants of the budget deficit in these countries is of academic interest so that policy makers could design a more robust policy against the deficit in the budget. But before, further analysis of the determinants, what the nations do when they face the problem of budget deficit is also equally important to visualize.

To counter the problem of budget deficit different countries adopted different strategies, the USA incorporated an amendment in its constitution that necessitated to balanced budget each year, and European countries signed a treaty known as the Maastricht treaty that necessitated fiscal discipline by its members. Similarly, many OECD countries also desire to follow budgetary strategies to decrease or eradicate budget deficits. According to the IMF and World Bank, fiscal discipline is the most important variable that affects the entire economy of underdeveloped countries, and dealing with it is one of the most difficult problems for these economies. To defend against fiscal deficit governments usually increase taxes due to which the inflation rate also increases.[2]

According to Keynes (1923) during depressions and recessions period deficit financing is the key to arousing demand. Due to fiscal deficit, the size of the market increases which arouses the economy by elevating business productivity or profitability and resulting in to decrease in unemployment. Whereas according to Smith (2002), deficit spending has the same phenomenon for households, governments, or nations so the correction is also the same. Moreover, debt is a burden on future generations as it runs a deficit, and it must be paid back for negligible or no gain. Cukierman and Meltzer (1989) in their theory developed that in a democratic system, there is more chance of a larger deficit because of a larger share of inheritance-constrained persons in the population. Lizzeri (1999) theory says that strategic deficit can be used to attract voters for victory in future elections which resultantly generates a deficit.

According to Gokhale and Smetters (2003) prime long-run fiscal imbalance arises due to entitlement programs for the elderly, Medicare, and social security programs whereas there is a small fiscal imbalance in the rest of government policies. According to Alesina and Perotti (1996) budget deficit affects the living standard of the upcoming generation as debt is inversely related to budget sustainability. These suggestive measures to account for the budget deficits have their own implications. These may push generations after the other into debt if not tackled wisely. Therefore, it is an important question of study to find the key determinants of the budget deficit and based on those a sound policy be designed, instead of going into the direct measures to account for the budget deficits.

[2] Cited Zaidi (2005).

The extent of fiscal deficit has attracted a great deal of attention in the past as well as in the present, as it leaves deep consequences on economies by harming the growth of economies. Despite significant economic, political, and institutional diversity, South Asian countries exhibit varying levels of budget deficits. Understanding the specific economic, political, and institutional factors that drive these differences is crucial for effective fiscal policy formulation and sustainable public finance management in the region. However, the complex interplay of these factors and their relative importance remain poorly understood. This study seeks to address this gap by investigating the economic, political, and institutional determinants of budget deficits in South Asian countries, with a focus on identifying key drivers and their implications for fiscal policy. Therefore, the present paper seeks to answer the following question "How do government revenue structures, including tax policies and revenue diversification, affect budget deficits in South Asian countries, and how are these factors influenced by political and institutional contexts?". Based on the research problem and the literature gap the study will meet the following objectives. The first objective of the thesis is to explore economic, political & institutional determinants of Budget deficit in the case of South Asian economies using a Dynamic Panel Approach. Further, the study will isolate the short and long-run relationship between budget deficits and variables of interest and determination of their relative influence on budget deficit.

As for the novelty of this study is concerned, this research aims to explore the nuanced dynamics underlying budget deficits in South Asian countries, considering the distinctive economic, political, and institutional landscapes of the region. By analysing these factors in conjunction, we seek to uncover the specific drivers of budget deficits and their relative significance across diverse contexts. This study will provide valuable insights into the complex interactions shaping fiscal outcomes in South Asia, offering practical implications for policymakers striving to enhance fiscal sustainability and economic resilience in the region. The rest of the Paper is designed as, the next section explores the literature on the problem at hand, then there a methodology and data analysis sections, and finally conclusion and recommendations.

2. Literature Review

Roubini (1991) paper examined political and economic determinants of budget deficit in developing countries by applying Cross section time series regression on a dataset. First, the author took a dataset of ninety-two countries and investigated the relationship between inflation rate and tax rate. He found that only fifteen countries showed positive and significant results while the remaining showed negative or no relationship by running simple regression. On the first difference, only four countries showed that the relation between the inflation rate and tax rate is significant and positive. At the same time when he used different filters and de-trend the data and when seigniorage was used as a dependent variable the Mankiw theory of 1987 was completely rejected. To check co-integration, he used augmented dickey-fuller test results which showed that all sixty-four countries in the sample have co-integration except Pakistan, Nigeria, and Norway. To observe whether budget deficit depends on government spending simple regression equation was run which showed that an increase in government spending to GNP brought an increase to budget deficit because of limitation in data the time was taken from 1970 to 1987. Finally, he checked whether political instability leads to a budget deficit or not, and the result showed that more frequent changes in government led to higher budget deficits for this he used seventy-seven countries with datasets from 1971 to 1982. He also found that countries with lower GNP per capita faced higher fiscal deficits. According to the author inequality in income distribution showed no impact on the deficit but this result was based on a small dataset. Finally, and most importantly the collapse of fiscal policy related to the equilibrium approach was because fiscal deficit was also determined by political factors.

Edin and Ohlsson (1991) in their paper re-examined whether institutional engagements in the process of politics influence budget deficits? They used Pooled cross-section time series

regression and sensitivity analysis on a dataset of thirteen OECD countries from 1964 to 1985. On the replication of the results of N. Roubini and J.D. Sachs (1989) and by performing Pooled cross-section time series regression and sensitivity analysis on it they point out that the findings are vigorous. However, according to Edin and Ohlsson (1991) there is a need to modify the statement that coalition governments are less competent in budgetary regulation. The results showed that particularly after 1974 higher debts were linked with weak governments and that coalition governments were found awful in decreasing budget deficits. Whereas the coalition effect was mainly due to minority governments that were unable to decrease budget deficits. According to the authors minority government's negotiations in parliament were the major barrier to decreasing budget deficits. The effects of political variables on budget deficits remained unchanged even with the introduction of country dummy variables.

Bohn and Inman (1996) in their paper empirically estimated a balanced budget deficit and fiscal rules by including forty-seven states of the United States of America. Using techniques OLS for the balanced budget deficit and random effects for fiscal rules on a dataset from 1970 to 1991 they found that elected states did not significantly affect states fund surplus while proper balanced budget rules reduce budget. Alesina and Bayoumi (1996) in their study examined forty-eight U.S. states by considering fiscal rules and budget balance. Using a panel dataset of forty-eight U.S. states from the period 1965 to 1992 and running linear regression on it they found that tighter fiscal rules generate fiscal surpluses and reduce deficit side by side with low cyclical instability in fiscal balance.

De Haan and Sturm (1997) in their research examined the variation in political and institutional engagements to explore cross-country differences in debt amassing and the intensity of government spending. The weighted least squares technique was employed in twenty-one OECD Countries over the time from 1982 to 1992. Their findings suggest a reassessment of previous research as their result contradicts previous findings. The growth of government debt and the intensity of government spending were not linked with the political power dispersion index (N. Roubini & J. Sachs, 1989; N. Roubini & J.D. Sachs, 1989). According to N. Roubini and J. Sachs (1989); N. Roubini and J.D. Sachs (1989) coalition governments had produced more deficits than single-party or majority governments. Which was opposed by Edin and Ohlsson (1991) according to Edin and Ohlsson (1991) the political variable used by N. Roubini and J. Sachs (1989); N. Roubini and J.D. Sachs (1989) ascertained only the impact of minority governments not the impact of majority governments.

Acosta and Coppedge (2001) in their study estimated the political determinants of budget deficit of seven Latin American states i.e. Argentina, Brazil, Chile, Ecuador, Mexico, Venezuela, and Uruguay. For this, they employed weighted regression methodology on a dataset from 1979 to 1998. Their findings showed that in election years ruling government increased the deficit while budgetary institutions helped prevent the deficit. On the other hand, no linkage was found between budget institutions, an election year, and spending if they modelled deficit and spending separately.

Mulas-Granados (2003) in this paper investigates the political and economic determinants of fiscal adjustment schemes on the dataset of fifteen European Union countries from 1970 to 2001. The ordinary least square methodology was employed by him. His results established that under the requirements of the Maastricht treaty, Stability and Growth deal; economic, and political variables presented to be important determinants of the budget balance. The findings also showed that more coalitions, higher cabinet size, more leftist governments, and nearness of elections positively affect public expenditures. The author noted that during the period 1970 to 1994 cabinet ideology proved to be the highly significant determinant of budget when leftist governments re-adjusted their strategies by escalating revenues from direct taxes to stabilize their budget.

Woo (2003) in his study examined fifty-seven developed and developing countries using OLS with a wide range (forty) of economic, institutional, and socio-political variables from 1970 to 1990. He introduced a new and important variable social polarization which according to him explains differences in fiscal effects crosswise countries. The result showed that cabinet size income inequality, socio-political unsteadiness, and deficiency in the making of decisions about fiscal role were negatively related to budget surplus. Whereas government weakness was not constantly related to deficits while comparative parliamentary governments had a propensity to sprint greater deficits.

De Haan and Mink (2005) in his paper examined whether even with the implementation of the Stability and Growth Pact in the member countries of the European Union, Is political budget cycle exists or not? Change in overall budget balance was used as a dependent variable in their paper. The author used the Generalized least square methodology on the dataset from 1999 to 2004 on twelve European countries (that have adopted the euro currency union) and found that before elections stability and growth pact did not control strategy makers in practising expansionary fiscal strategy. Whereas in an election year budget deficit flourished.

According to Tujula and Wolswijk (2004) variations in budget balances are due to a rise in debt, political aspects, and developments of macroeconomic policies. Using the OLS technique on a dataset from the period of 1970 to 2002 on twenty-two OECD countries they also found budget balances decline noticeably in election years whereas budget balance seems to be affected by asset prices in usual periods. He also found that higher interest rate negatively affects budget balances.

Combes and Saadi-Sedik (2006) in their paper examined the impact of trade openness on budget deficit by using the GMM estimator technique. They constructed a panel dataset of sixty-six developing countries from 1974 to 1998 and found that trade openness enhances a country's revelation to outer shocks which badly affects Fiscal balances. The author also recommended policy according to which fiscal policy, budgetary institutions, and management services should be enhanced.

Miyazaki (2007) examined the role of the disintegration of the government's fiscal policy during phases of fiscal adjustment. Least squares and the instrumental variable technique of Hausman and Taylor were employed on a dataset of eighteen OECD countries from a time of 1980 to 2002. To observe the change in budget deficit he used institutional variables, political variables, and economic variables. His empirical finding showed that European countries that have budgetary systems and regulations possibly trim down their budget deficits effectively at the time of fiscal adjustment. Moreover, he observed that budgetary institutions in European countries are affected vigorously. Conversely, for non-European countries, single-party majority government diminishes budget deficits effectively during the phases of fiscal adjustment. According to his empirical findings, institutional factors alone are effectual in lessening of deficit without any link to political factors.

Bayar and Smeets (2009) in their study examined political fragmentation in fifteen European Union countries. Using Ordinary least square with panel corrected standard errors technique on a dataset from the period 1971 to 2006 they found that political disintegration did not present essential exertion in budget deficits while governments took advantage of opportunities to a degree that made deficits lofty in election years and little in the other ones. Lucotte (2009) in his paper empirically estimated the impact of the independence of the central bank on budget deficit. He used a dataset from the period 1995 to 2004 on a large panel set of developing countries and by employing the random effect technique he found a negative association between budget deficits and central bank independence, meaning thereby that the superior the independence of the central bank, lesser would be the deficit. The author also recommended policy according to which budgetary institutions and administration should be improved and debt serving should be avoided.

Bayar and Smeets (2009) examined fifteen countries in the European Union that signed the Maastricht Treaty. Using data from 1971 to 2006 they constructed a Bayesian Random Coefficient Model to explore the impacts of the Maastricht Treaty on budget deficit. This technique differs from others as it permits heterogeneity in the model. The results exposed a remarkable level of heterogeneity between the countries. On the other side similarities between the countries also exist. The incorporation of the European Union in fifteen countries after the approval of the Maastricht Treaty encouraged the junction between the Maastricht Treaty countries that participated. Relating to the effect of political variables the empirical results showed a greater degree of heterogeneity in their size, but similarities in terms of the explanatory power. While ideology was not apparently found in link with deficit. As it diverges over the countries. On the other hand, the opportunistic model discloses a rise in the deficit during election years. Ultimately Maastricht Treaty countries need to develop their budgetary situation. The authors also desired to increase the number of political variables in the future to improve the explanatory power of the model.

Ayuso-i-Casals et al. (2009) in his research examined whether budgetary progress is inclined by fiscal rules? For this, they used cyclically adjusted primary balance as the dependent variable whereas OLS and lagged output gap estimation technique was applied to a dataset of twenty-five European Union countries over the time of 1990 to 2005. Their findings showed that an increase in the share of government finances led to lower deficits while the stronger the country's fiscal rules would be the greater the primary balance will be. According to the authors, deficit and debt rules seemed to be more helpful than expenditure rules.

Farah (2010) in her study examined the importance of both theoretical and empirical literature on political determinants of budget deficits. In the theoretical part, she discussed how government disintegration, a system of politics, ideology, political budget phases, and budget process affect the budget deficit. While on the empirical part, she reviewed the empirical studies depending on a few models. She found that most of the empirical studies were done on developed countries. Hence an essential part of future research should be based on developing countries. The ideological proclivity was unable to explain electoral policy cycles in developing countries due to preference differences. According to the author, comparatively recent democracy electoral parties use voter's emotions to get votes in the elections.

Lavigne (2011) in his study established the concept of adjustment need that allows us to empirically investigate the role of political and institutional factors in determining why countries face fiscal distress, how countries can fiscally strengthen when required, and why some are unable to adjust although a clear need. They employed the random effect technique on a panel dataset of sixty advanced and developing countries over the period 1985 to 2002. For developing economies, they found that institutional quality helped avoid situations of fiscal distress but those countries that make large adjustments failed to avoid stress. The results for advanced countries emphasized the importance of budgetary institutions like the involvement of fiscal rules for avoiding fiscal distress and improvement in the likelihood of executing adjustments by the administration.

Javid et al. (2011) in their study estimated economic, political, and institutional determinants of budget deficit instability for South Asian and ASEAN countries over the time of 1984 to 2010. A dynamic panel model with a generalized method of moments of the Blundell and Bond technique was employed to determinate budget deficit instability which allows for dealing with the country's specific effects and endogeneity. They choose four countries from South Asia and five countries from the ASEAN region because of the lack of availability of data. Their Results showed that high inflation, elevated income, and bulky budget-to-GDP ratio were linked with huge budget instability. More corruption, stumpy institutional quality, and conflicts caused more variation in the budget deficit. Whereas more intensified democracy and improved social and economic circumstances lessen budget deficit instability. Their results also showed

that the ASEAN countries do have not as much budget deficit instability. Whereas democracy, political stability, and improved social and economic conditions decrease budget deficit instability.

Maltritz and Wüste (2015) examined the determinants of the budget deficit using a group of twenty-seven European Union countries from 1991 to 2011. The author applied time fixed effects methodology on the data covering twenty-one years. The primary budget balance was used as the dependent variable. Their study was based on how fiscal rules and fiscal councils influence budget deficit for this they found the mutual positive significant role of both of them i.e. both helped each other in controlling budget deficit which means fiscal councils worked in countries that have stronger fiscal rules and vice versa. On the other hand, they found that higher debt reduces deficit because of more inducement of spending while in election year government increases spending for the likelihood of being re-elected.

Serdar, GÜNEŞ, and Davasligil (2012) in his study examined twenty-five European countries using the fixed effects technique on a dataset from the time 1998 to 2008. He found that crises increased budget deficits but did not have serious effects. Various rescue packages were also provided by governments which helped in decreasing financial crisis effects but on the other side, these also generated a deficit. Ana-Maria and Alexandru (2015) in her study used more than forty economic, socio-political, and institutional variables and tested them on thirty-one developing and developed European countries to observe which variables are vital in explaining cross-country differences in the budget deficit. The data was taken over the time of 1995 to 2012. Using the Ordinary least square methodology she found that income inequality, Socio-political instability, lack of government authority in the budgetary decision-making process, and large size of cabinet are strictly negatively related to the budget surplus. While during parliamentary rule budget deficit increases more. According to the author countries with greater socio-political instability may achieve fiscal cautiousness by taking better budgetary measures.

As regards to political impact on deficits Žurauskas and Verseckaitė (2015) found that a higher level of political corruption leads to higher deficits moreover political corruption increases deficits during the financial slump. Fixed effects estimation technique was employed by him on a dataset of thirty-one OECD countries from the period 1996 to 2013 while annual budget surpluses/deficits were used as the dependent variable.

Studies such as Badinger and Reuter (2017) suggest that countries with more stringent fiscal rules tend to have higher fiscal balances, lower deficits, and reduced output volatility (Badinger & Reuter, 2017). Governance institutions have also been shown to play a significant role in achieving favourable outcomes. Likewise, Afonso, Baxa, and Slavík (2018) examined the relationships between fiscal policy, output growth, and financial stress using a VAR model on a panel of four countries: the USA, the UK, Germany, and Italy. The study concludes that financial stress worsens the fiscal position and negatively impacts output growth. However, a different perspective presented by Banday and Aneja (2019) suggests that a negative shock to the budget deficit results in a decline in the current account balance, while a positive shock leads to an increase in the current account balance. This study posits that higher growth shocks and significant fluctuations in interest rates and exchange rates could account for the substantial variation in deficits. Contrary to these findings, some studies in the literature, such as Badinger and Reuter (2017), fail to establish a robust relationship between fiscal rules and the deficit issue. Specifically focusing on the twin deficit problem, this study finds no conclusive evidence linking fiscal policy to the current account deficit.

On the flip side, numerous studies in the existing literature suggest that the quality of institutions can impact economic growth, which in turn directly or indirectly affects the stability of budget deficits (Arif & Hussain, 2018; Bjørnskov & Foss, 2013; North, 1990). Similarly, some studies delve into the detailed relationship between the efficiency of institutions and public

governance. This is crucial because public institutions and governance systems dictate how a government and its agents manage a country. Understanding the link between institutional efficiency and public governance is essential for enhancing the effectiveness of government expenditures. Public governance plays a vital role as it can alter incentives for economic agents in allocating public resources, thus potentially impacting the budget deficit positively or negatively (Brousseau, Garrouste, & Raynaud, 2011; Hellman, Jones, & Kaufmann, 2003; North, 1990). Consequently, recent literature suggests that assessing the government's role in economic growth and addressing the issue of high budget deficits may be achieved through improving governance quality (Cooray, 2009; Dzhumashev, 2014).

Through a thorough review of the literature, it is evident that while studies have examined the influence of political and governance institutions on budget deficits, there is a notable absence of research specifically exploring the economic, political, and institutional factors in South Asian countries. The available literature mainly focuses on the developed regions and the advanced economies, or the time series analysis of the individual countries and no such study is available that explicitly explores the relationships in the South Asian countries. Therefore, this study aims to bridge these gaps in the literature by investigating the relationship between the political, institutional, and economic determinants in the South Asian region specifically.

3. Data and Methodological Description

3.1. The Data

Secondary data is used over the time of 28 years with annual data frequency from 1995 to 2023. To evade small sample bias longest possible data is obtained. South Asian economies are included in the study for panel data analysis. Due to limitations of data availability in case of Afghanistan, it was dropped from the analysis Chaitip, Chaiboonsri, and Dewitt (2015) and also applied Panel ARDL on four countries with an annual data frequency of 19 years. Therefore, this reference suggests that the panel data on 8 south Asian countries and 28 years is enough to draw policy suggestions using the panel Data on all variables collected from highly reliable data sources[3]. Data on economic variables is extracted from the International Monetary Fund - World Economic Outlook database, World Development Indicators – World Bank. Data on Political variables are collected from the University of Gothenburg, Sweden, and one dummy variable election year is generated or coded indicating year if there was an election or otherwise. Data on Institutional variables is drawn from the database of the (Feulner, 2017).

3.2. Conceptual Framework

The conceptual framework on the economic, political, and institutional determinants of budget deficits posits that these factors collectively influence a country's fiscal outcomes. Economically, factors such as economic growth, inflation, and public debt levels can impact the budget deficit. Politically, the ideology of the ruling party, electoral cycles, and political stability can affect fiscal decisions leading to deficits. Institutionally, the effectiveness of fiscal institutions, budgetary rules, and the quality of governance play a crucial role in determining budget deficits. This framework suggests that understanding the interplay of these factors is essential for formulating effective fiscal policies aimed at managing budget deficits and promoting fiscal sustainability.

[3] Details regarding variables their definitions, proxies and data sources are available in the appendix A.1.

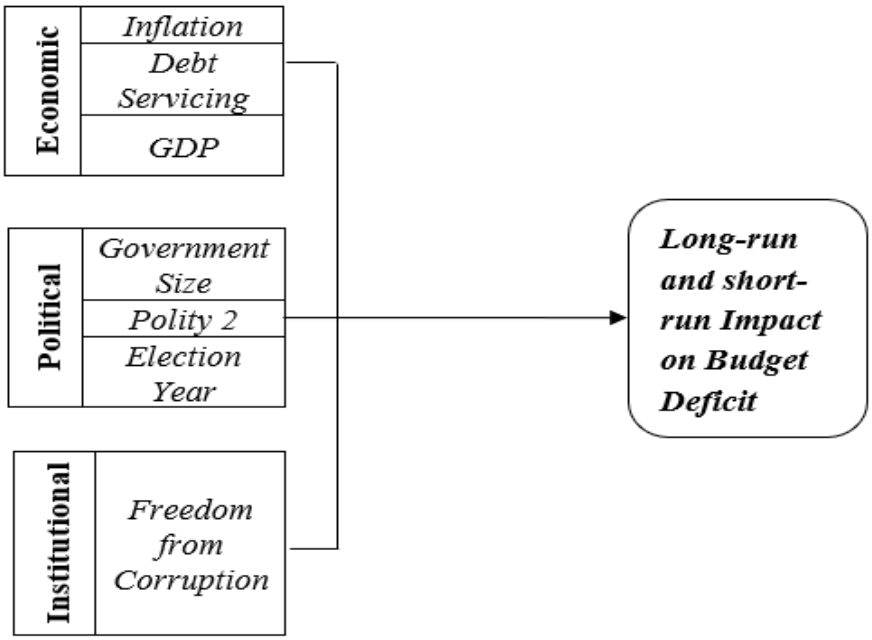

Figure 3: Conceptual Framework

3.3. Econometric Methodology

3.3.1. Unit root test

For the process of stationarity, our panel study will employ Levin, Lin chu, Im-Pesaran & Shin, and the Breitung unit root test. Levin, Lin Chu, and Breitung assume a common unit root process whereas Im-Pesaran & Shin assumes an individual unit root process. According to the assumption of ARDL variables should be integrated I(0) or I(1). For this reason, first-unit root tests will be applied to check the order of integration of all variables present in our study to make sure that there is no I(2) variable. The panel unit root tests the following null and alternative hypotheses.

- Null Hypothesis, data contains a unit root. i.e. $Tc < T_t$
- Alternative Hypothesis, data does not contain a unit root. i.e. $Tc > T_t$

3.3.2. Panel ARDL, Pool Mean Group (PMG), Mean Group(MG), and Dynamic Fixed Effects (DFE) approach

Panel ARDL approach methodology developed by Pesaran and Shin (1995) has been employed in our model as it enables us to use variables with either all I(1) or fractionally integrated I(0) and I(1). For the estimation of dynamic heterogeneous panel equation Pesaran and Shin (1995); Pesaran, Shin, and Smith (1999); Pesaran and Smith (1995), proposed three approaches namely MG, PMG, and DFE. MG (mean group) estimation takes simple averages of slope coefficients and allows the intercept and slope coefficients both of short run and long run, along with error variances to differ among groups (countries).

It also allows the speed of adjustment to differ among groups. Whereas PMG (pooled mean group) estimation merges both pooling and averages. PMG like MG allows all the above to differ among groups but restricts long-run slope coefficients to be the same among groups. While DFE (dynamic fixed effects) estimation method which is actually a traditional method uses pooling in time series data for each country separately and intercept coefficients are allowed to vary across groups while long-run and short-run coefficients remain identical for all groups. According to Baltagi, Griffin, and Xiong (2000) it has been revealed that due to endogeneity

between a lagged dependent variable and the error term, DFE is biased. Moreover, it gives misleading and inconsistent results if slope coefficients differ among groups. PMG estimator is consistent and efficient whereas MG is consistent but not efficient in the case of heterogeneous model. According to Pesaran and Smith (1995) PMG is less sensitive to outliers and gives more precise results than MG estimator. It has been shown that MG is inefficient because of having the same θ_i among groups (Pesaran et al., 1999).

The Hausman test would choose between MG and PMG. In case it does not reject the null hypothesis, we choose PMG as an efficient estimator. Whereas in case it rejects the null hypothesis we choose MG as a consistent estimator.

3.3.3. The Analytical Models

Based on the conceptual framework of the study. The budget deficit makes the following functional form

$$BD = f(INF, DS, GDP, GS, POL, ELEC, FC) \quad (1)$$

Using and auto regressive distributed lag model notations this can be written as
An ARDL (p, q_1,....q_k) in general foam

$$BD_{i,t} = \sum_{j=1}^{p} \lambda_{ij} BD_{i,(t-j)} + \sum_{j=0}^{q} \delta_{ij}^{/} X_{i,(t-j)} + \mu_i + \varepsilon_{it} \quad (2)$$

Error correction reparameterization of equation (2) is

$$\Delta BD_{i,t} = \phi_i\left[BD_{i,(t-1)} - \{(\theta_{0i} + \theta_{1i}(X)_{i,(t-1)})\}\right] + \sum_{j=1}^{p-1} \lambda_{ij} \Delta(BD)_{i,(t-j)} + \sum_{j=0}^{q-1} \delta_{ij}^{/} \Delta(X)_{i,(t-j)} + \mu_i + \varepsilon_{i,t} \quad (3)$$

Applying the variables mentioned in equation (1), thus we get this equation

$$\Delta BD_{i,t} = \phi_i\left[BD_{i,(t-1)} - \{\theta_{0i} + \theta_{1i}(INF)_{i,(t-1)} + \theta_{2i}(DS)_{i,(t-1)} + \theta_{3i}(GDP)_{i,(t-1)} + \theta_{4i}(GS)_{i,(t-1)} + \theta_{5i}(POL)_{i,(t-1)} + \theta_{6i}(FC)_{i,(t-1)}\}\right] + \sum_{j=1}^{p-1} \lambda_{ij} \Delta(BD)_{i,(t-j)} + \sum_{j=0}^{q-1} \delta_{ij} \Delta(INF)_{i,(t-j)} + \sum_{j=0}^{q-1} \delta_{ij} \Delta DS_{i,(t-j)} + \sum_{j=0}^{q-1} \delta_{ij} \Delta GDP_{i,(t-j)} + \sum_{j=0}^{q-1} \delta_{ij} \Delta GS_{i,(t-j)} + \sum_{j=0}^{q-1} \delta_{ij} \Delta POL_{i,(t-j)} + \delta_{ij} ELEC_{i,t} + \delta_{ij} ELEC_{i,(t-1)} + \delta_{ij} ELEC_{i,(t+1)} + \sum_{j=0}^{q-1} \delta_{ij} \Delta FC_{i,(t-j)} + \mu_i + \varepsilon_{i,t} \quad (4)$$

$\forall_i$ subscript denotes the number of countries i=1,2...N and t subscript denotes the number of periods t=1,2...T. λ and δ are short-run coefficients of dependent and independent variables respectively θ is represented long-run coefficients, Δ is first difference operators, p and q are showing optimal lag length. Parameter ϕ is the speed of adjustment and tells whether the model will converge or diverge or the speed with which budget deficit will adjust towards long-run equilibrium. We expect the coefficient to be negative and significant to confirm the long-run relationship. ε is the error term μ is individual or country fixed effects. X represents independent variables (economic political and institutional) such as INF, DS, GDP, GS, POL, ELEC, and FC.

Where, BD= Budget Deficit, DS = Total Debt Servicing, INF = Inflation, Consumer price, GDP = Real GDP per capita, GS = Government Size, POL= Polity 2 ,ELEC = Election Year, $ELEC_{it-1}$ = Pre-Election Year, $ELEC_{it+1}$ = Post Election Year, FC = Freedom from Corruption, θ_o = Constant Term, ϕ = speed of adjustment, ε = Error Term.

The dependent variable (BD) is the annual budget deficit measured as net lending/borrowing as % of GDP is calculated as revenue minus total expenditure. The independent variables are the Real GDP per Capita used to capture a degree of economic growth, change in total debt servicing, inflation measured as the Consumer price index, current expenditure as % of GDP as a proxy for Government size, Polity 2 as a measure level of democracy, election year (where 1 stands for election year and 0 otherwise) and freedom from corruption index (where greater value indicates less corruption and smaller indicates more

corruption). The following equation is specified to examine the impact of independent variables on deficit.

Our ARDL Basic Model A in long-run foam is as follows.

$$BD_{i,t} = \theta_{0t} + \theta_{1t} INF_{i,t} + \theta_{2t} DS_{i,t} + \theta_{3t} GDP_{i,t} + \theta_{4t} GS_{i,t} + \mu_{i,t} \quad (5)$$

Manipulating to ARDL Specification assuming all variables integrated of order I(1).

$$BD_{i,t} = \mu_i + \delta_{10} INF_{i,t} + \delta_{11} INF_{i,(t-1)} + \delta_{20} DS_{i,t} + \delta_{21} DS_{i,(t-1)} + \delta_{30} GDP_{i,t} + \delta_{31} GDP_{i,(t-1)} + \delta_{40} GS_{i,t} + \delta_{41} GS_{i,(t-1)} + \lambda_i BD_{i,(t-1)} + \varepsilon_{i,t} \quad (6)$$

In ECM Format, Subtract BD_{it-1} from both sides we get.

$$BD_{i,t} - BD_{i,(t-1)} = \mu_i + \delta_{10} INF_{i,t} + \delta_{11} INF_{i,(t-1)} + \delta_{20} DS_{i,t} + \delta_{21} DS_{i,(t-1)} + \delta_{30} GDP_{i,t} + \delta_{31} GDP_{i,(t-1)} + \delta_{40} GS_{i,t} + \delta_{41} GS_{i,(t-1)} + \lambda_i BD_{i,(t-1)} - BD_{i,(t-1)} + \varepsilon_{i,t} \quad (7)$$

$$\Delta BD_{i,t} = -(1-\lambda_i) BD_{i,(t-1)} + \mu_i + \delta_{10} INF_{i,t} + \delta_{11} INF_{i,(t-1)} + \delta_{20} DS_{i,t} + \delta_{21} DS_{i,(t-1)} + \delta_{30} GDP_{i,t} + \delta_{31} GDP_{i,(t-1)} + \delta_{40} GS_{i,t} + \delta_{41} GS_{i,(t-1)} + \varepsilon_{i,t} \quad (8)$$

where $\phi = -(1-\lambda_i)$, adding and subtracting lag terms introduced in equation 5.

$$\Delta BD_{i,t} = \phi BD_{i,(t-1)} + \mu_i + \delta_{10} INF_{i,t} + \delta_{11} INF_{i,(t-1)} + \delta_{11} INF_{i,t} - \delta_{11} INF_{i,t} + \delta_{20} DS_{i,t} + \delta_{21} DS_{i,(t-1)} + \delta_{20} DS_{i,t} - \delta_{20} DS_{i,t} + \delta_{30} GDP_{i,t} + \delta_{31} GDP_{i,(t-1)} + \delta_{30} GDP_{i,t} - \delta_{30} GDP_{i,t} + + \delta_{40} GS_{i,t} + \delta_{41} GS_{i,(t-1)} + \delta_{40} GS_{i,t} - \delta_{40} GS_{i,t} + \varepsilon_{i,t} \quad (9)$$

Taking common terms

$$\Delta BD_{i,t} = \phi BD_{i,(t-1)} + \mu_i + (\delta_{10} + \delta_{11}) INF_{i,t} - \delta_{11} (INF_{i,t} - INF_{i,(t-1)}) + (\delta_{20} + \delta_{21}) DS_{i,t} - \delta_{21} (DS_{i,t} - DS_{i,(t-1)}) + (\delta_{30} + \delta_{31}) GDP_{i,t} - \delta_{31} (GDP_{i,t} - GDP_{i,(t-1)}) + (\delta_{40} + \delta_{41}) GS_{i,t} - \delta_{41} (GS_{i,t} - GS_{i,(t-1)}) + \varepsilon_{i,t} \quad (10)$$

Putting

$$\frac{\mu_i}{1-\lambda_i} = \theta_{oi}, \frac{\delta_{10}+\delta_{11}}{1-\lambda_i} = \theta_{1i}, \frac{\delta_{20}+\delta_{21}}{1-\lambda_i} = \theta_{2i}, \frac{\delta_{30}+\delta_{31}}{1-\lambda_i} = \theta_{3i}, \frac{\delta_{40}+\delta_{41}}{1-\lambda_i} = \theta_{4i} \quad (11)$$

We got an Error correction reparameterization of equation (5) in equation (6)

$$\Delta BD_{i,t} = \phi \left(BD_{i,(t-1)} - \theta_{0i} - \theta_{1i} INF_{i,t} - \theta_{2i} DS_{i,t} - \theta_{3i} GDP_{i,t} - \theta_{4i} GS_{i,t} \right) - \delta_{11} \Delta INF_{i,t} - \delta_{21} \Delta DS_{i,t} - \delta_{31} \Delta GDP_{i,t} - \delta_{41} \Delta GS_{i,t} + \varepsilon_{i,t} \quad (12)$$

Assuming Model B in long-run foam, the incorporation of the Polity variable

$$BD_{i,t} = \theta_{0t} + \theta_{1t} INF_{i,t} + \theta_{2t} DS_{i,t} + \theta_{3t} GDP_{i,t} + \theta_{4t} GS_{i,t} + \theta_{5t} POL_{i,t} + \mu_{i,t} \quad (13)$$

ARDL Specification of equation (13) is

$$BD_{i,t} = \mu_i + \delta_{10} INF_{i,t} + \delta_{11} INF_{i,(t-1)} + \delta_{20} DS_{i,t} + \delta_{21} DS_{i,(t-1)} + \delta_{30} GDP_{i,t} + \delta_{31} GDP_{i,(t-1)} + \delta_{40} GS_{i,t} + \delta_{41} GS_{i,(t-1)} + \delta_{50} POL_{it} + \delta_{51} POL_{i,(t-1)} + \lambda_i BD_{i,(t-1)} + \varepsilon_{i,t} \quad (14)$$

Error correction reparameterization of equation (14) is

$$\Delta BD_{i,t} = \phi \left(BD_{i,(t-1)} - \theta_{0i} - \theta_{1i} INF_{i,t} - \theta_{2i} DS_{i,t} - \theta_{3i} GDP_{i,t} - \theta_{5i} POL_{i,t} \right) - \delta_{11} \Delta INF_{i,t} - \delta_{21} \Delta DS_{i,t} - \delta_{31} \Delta GDP_{i,t} - \delta_{41} \Delta GS_{i,t} - \delta_{51} \Delta POL_{i,t} + \varepsilon_{i,t} \quad (15)$$

Assuming Model C in long run foam, incorporation of election year dummy

$$BD_{i,t} = \theta_{0t} + \theta_{1t} INF_{i,t} + \theta_{2t} DS_{i,t} + \theta_{3t} GDP_{i,t} + \theta_{4t} GS_{i,t} + \mu_{i,t} \quad (16)$$

ARDL Specification of equation (10) is

$$BD_{i,t} = \mu_i + \delta_{10}INF_{i,t} + \delta_{11}INF_{i,(t-1)} + \delta_{20}DS_{i,t} + \delta_{21}DS_{i,(t-1)} + \delta_{30}GDP_{i,t} + \delta_{31}GDP_{i,(t-1)} + \delta_{40}GS_{i,t} + \delta_{41}GS_{i,(t-1)} + \delta_{50}ELEC_{i,t} + \delta_{51}ELEC_{i,(t-1)} + \delta_{60}ELEC_{i,(t-1)} + \delta_{61}ELEC_{i,(t-2)} + \delta_{70}ELEC_{i,(t+1)} + \delta_{71}ELEC_{i,t} + \lambda_i BD_{i,(t-1)} + \varepsilon_{i,t} \quad (17)$$

Error correction reparameterization of equation (17) is

$$\Delta BD_{i,t} = \phi\left(BD_{i,(t-1)} - \theta_{0i} - \theta_{1i}INF_{i,t} - \theta_{2i}DS_{i,t} - \theta_{3i}GDP_{i,t} - \theta_{4i}GS_{i,t}\right) - \delta_{11}\Delta INF_{i,t} - \delta_{21}\Delta DS_{i,t} - \delta_{31}\Delta GDP_{i,t} - \delta_{41}\Delta GS_{i,t} - \delta_{51}ELEC_{i,t} - \delta_{61}ELEC_{i,(t-1)} - \delta_{71}ELEC_{i,(t+1)} + \varepsilon_{i,t} \quad (18)$$

Assuming Model D, the incorporation of Freedom from Corruption

$$BD_{i,t} = \theta_{0t} + \theta_{1t}INF_{i,t} + \theta_{2t}DS_{i,t} + \theta_{3t}GDP_{i,t} + \theta_{4t}GS_{i,t} + \theta_{5t}FC_{i,t} + \mu_{i,t} \quad (19)$$

ARDL Specification of equation (13) is

$$BD_{i,t} = \mu_i + \delta_{10}INF_{i,t} + \delta_{11}INF_{i,(t-1)} + \delta_{20}DS_{i,t} + \delta_{21}DS_{i,(t-1)} + \delta_{30}GDP_{i,t} + \delta_{31}GDP_{i,(t-1)} + \delta_{40}GS_{i,t} + \delta_{41}GS_{i,(t-1)} + \delta_{50}FC_{it} + \delta_{51}FC_{i,(t-1)} + \lambda_i BD_{i,(t-1)} + \varepsilon_{i,t} \quad (20)$$

Error correction reparameterization of equation (20) is

$$\Delta BD_{i,t} = \phi\left(BD_{i,(t-1)} - \theta_{0i} - \theta_{1i}INF_{i,t} - \theta_{2i}DS_{i,t} - \theta_{3i}GDP_{i,t} - \theta_{4i}GS_{i,t} - \theta_{5i}FC_{i,t}\right) - \delta_{11}\Delta INF_{i,t} - \delta_{21}\Delta DS_{i,t} - \delta_{31}\Delta GDP_{i,t} - \delta_{41}\Delta GS_{i,t} - \delta_{51}\Delta FC_{i,t} + \varepsilon_{i,t} \quad (21)$$

Where θ_1, θ_2, θ_3, θ_4 and θ_5 are long run elasticities while δ_1, δ_2, δ_3, δ_4, δ_5, δ_6 and δ_7 are short run dynamics and Δ is first difference operator. Parameter ϕ is the speed of adjustment and tells whether a model will converge or diverge.

4. Empirical Results and Discussion

Table 1
Panel Unit Root Tests at A Level on Natural Logs of Variable

Variables	Individual effects		Individual effects & Trend			
	Levin, Lin Chu	Im, Pesaran & Shin	Levin, Lin Chu	Breitung	Im, Pesaran & Shin	*Decision*
Ln(BD)	-6.79**	-5.38**	-2.00**	-3.59***	-2.23**	Stationary
Ln(INF)	-0.14	-0.69	-0.14	1.29	-0.69	Non-Stationary
Ln(DS)	-0.93	-0.37	-0.46	-0.03	-1.66**	Non-Stationary
Ln(GDP)	2.47	4.86	-1.09	0.04	-0.69	Non-Stationary
Ln(GS)	-0.84	-0.87	-0.98	-2.05**	-0.58	Non-Stationary
Ln(POL)	-1.05***	-1.17	-1.65**	1.51	-0.24	Non-Stationary
Ln(FC)	-2.75***	-3.45***	-10.09***	-1.22	-9.34***	Stationary

We can see from tables 1 and 2 that we have a mixed order of integration at a 5 % significance level. At first difference, the results show that none of the variables is of I(2) so in this above scenario we can easily move to the ARDL approach.

Table 2
Panel Unit Root Tests at The First Difference on Natural Logs Of Variables

	Levin, Lin Chu	Im, Pesaran & Shin	Levin, Lin Chu	Breitung	Im, Pesaran & Shin	*Decision*
ΔLn(BD)	-8.10***	-7.30***	-7.80***	-6.49***	-6.86***	---
ΔLn(INF)	-2.85***	-2.27**	-2.11**	-2.20**	-1.15	Stationary
ΔLn(DS)	-9.80***	-9.03***	-5.23***	-2.33***	-6.47***	Stationary
ΔLn(GDP)	-2.36***	-2.61***	-0.93	-2.24**	-1.61**	Stationary
ΔLn(GS)	-5.03***	-4.57***	-3.81***	-4.01***	-3.04***	Stationary
ΔLn(POL)	-4.53***	-3.13***	5.28***	-3.67***	-4.39***	Stationary
ΔLn(FC)	-13.93***	-13.91***	-10.75***	-3.09***	-11.32***	---

Table 3 reveals PMG, MG, and DFE results. The Hausman test for selection between MG and PMG strongly rejected MG and accepted PMG.

Table 3
Estimated Panel Model (A) ARDL (1,3,3,3,3) based on AIC (Basic Model)

Dependent Variable: Budget Deficit	**PMG**	**MG**	**Hausman Test**	**DFE**
Convergence coefficients	-0.94*	-18.47		-0.80***
	(0.56)	(17.75)		(0.14)
	Long-run coefficients			
$Ln(INF_{it})$	2.82***	-71.97		0.13
	(0.57)	(67.16)		(0.34)
$Ln(DS_{it})$	2.41***	22.00		-0.26
	(0.70)	(19.84)		(0.49)
$Ln(GDP_{it})$	-2.64***	123.56		-0.26
	(0.65)	(119.16)		(0.49)
$Ln(GS_{it})$	3.42***	68.89		0.14
	(1.06)	(57.61)		(0.85)
	Short-run coefficients			
			0.00 [1.00]	
$\Delta Ln(INF_{it})$	10.77	593.18		1.69
	(9.54)	(575.13)		(2.02)
$\Delta Ln(INF_{it-1})$	-4.34	-326.29		1.38
	(3.42)	(334.66)		(2.18)
$\Delta Ln(INF_{it-2})$	-1.13	-138.91		2.41
	(1.83)	(147.28)		(2.06)
$\Delta Ln(DS_{it})$	-2.27	-87.55		0.05
	(1.46)	(84.42)		(0.37)
$\Delta Ln(DS_{it-1})$	-1.57	-52.46		0.04
	(1.00)	(51.36)		(0.37)
$\Delta Ln(DS_{it-2})$	-1.48	-56.62		-0.25
	(1.10)	(56.34)		(0.28)
$\Delta Ln(GDP_{it})$	-25.66	-1634.91		-4.24
	(30.38)	(1620.89)		(3.53)
$\Delta Ln(GDP_{it-1})$	20.49	1201.17		-2.51
	(21.15)	(1237.78)		(3.55)
$\Delta Ln(GDP_{it-2})$	-10.11**	-779.67		-0.12
	(4.65)	(750.06)		(3.38)
$\Delta Ln(GS_{it})$	-0.87	49.28		-0.001
	(2.23)	(63.39)		(0.90)
$\Delta Ln(GS_{it-1})$	-3.60	67.19		-1.61*
	(2.68)	(84.37)		(0.85)
$\Delta Ln(GS_{it-2})$	-2.57**	-44.82		0.53
	(1.02)	(36.17)		(0.85)
Constant	-3.39	544.03		0.56
	(2.89)	(687.20)		(1.60)

***, **, * denotes significance at 1%, 5% and 10% level. Standard errors in parentheses.

This confirms the existence of long-run homogeneous relationships among the countries being studied. In contrast to PMG, all the long-run variables in the DFE estimator are insignificant. The value of ECT (Error Correction term) has a negative sign and is significant. The speed of adjustment -0.94 is high and shows that the model will converge and can correct any disequilibrium within one year by 94%. This table further reveals that the variable INF is highly significant and is positively associated with budget deficit INF coefficient value is 2.82 which means that a 1% increase in INF leads to an increase in budget deficit by 2.82%. The reason for the positive sign is that the government has to provide subsidies in case of inflation resulting in a deficit. The positive sign is according to our expectations. The variable DS is significantly and positively related to the budget deficit with a coefficient value of 2.41 which means that a 1% increase in DS leads to an increase in budget deficit by 2.41%.

The reason is that debt servicing is directly related to an increase in interest rate which leads to an increase in deficit. The positive sign is according to our expectations. The economic growth is significantly and inversely linked with the budget deficit with a coefficient value of -2.64 which means a 1% increase in economic growth leads to a decrease in budget deficit by 2.64%. This is understood that when the economy grows deficit decreases and vice versa also true. The negative sign is according to our expectations.

Table 4
Estimated Panel Model (B) ARDL (2,1,1,1,1,1) based on AIC

Dependent Variable: Budget Deficit	**PMG**	**MG**	**Hausman Test**	**DFE**
Convergence coefficients	-0.65***	-1.39**		-0.83***
	(0.56)	(0.56)		(0.15)
	Long-run coefficients			
Ln(INF_{it})	0.95*	2.95**		0.25
	(0.56)	(1.25)		(0.47)
Ln(DS_{it})	0.45***	0.45		-1.80
	(0.16)	(0.87)		(0.28)
Ln(GDP_{it})	-2.06**	-5.88***		-0.23
	(0.98)	(1.76)		(0.76)
Ln(GS_{it})	0.10	-0.39		0.25
	(0.43)	(3.99)		(0.67)
Ln(POL_{it})	-0.21	10.52		0.50*
	(0.35)	(11.61)		(0.30)
	Short-run coefficients		3.07 [0.68]	
Δ Ln(BD_{it})	-0.09	0.16		-0.008
	(0.07)	(0.30)		(0.11)
Δ Ln(INF_{it})	2.92	3.35		1.47
	(3.07)	(6.04)		(1.77)
Δ Ln(DS_{it})	-0.24***	-0.01		0.06
	(0.07)	(0.19)		(0.22)
Δ Ln(GDP_{it})	4.22	-8.21		-3.97
	(4.7)	(19.44)		(3.20)
Δ Ln(GS_{it})	0.25	1.92		-0.33
	(0.39)	(3.83)		(0.76)
Δ Ln(POL_{it})	-1.31	-6.85		-0.05
	(1.60)	(7.93)		(0.30)
Constant	6.84***	24.04		0.62
	(2.56)	(18.10)		(3.30)

***, **, * denotes significance at 1%, 5% and 10% level. Standard errors in parentheses.

Error Correction term is having negative signs and is highly significant. The speed of adjustment -0.65 is moderate and shows that the model will converge and can correct any disequilibrium within one year by 65%. This table further reveals that when the polity variable is incorporated into this model the results show that INF, DS, and Economic Growth are still significant with the same signs but with less magnitude as compared to the previous model.

While GS and Polity variables are insignificant under this specification. The variable INF is significant and is positively associated with the budget deficit the INF coefficient value is 0.95 which means that a 1% increase in INF leads to an increase in budget deficit by 0.95%. The variable DS is significantly and positively related to the budget deficit with a coefficient value of 0.45 which means that a 1% increase in DS leads to an increase in the budget deficit by 0.45%. The economic growth is significantly and inversely linked with the budget deficit with a coefficient value of -2.06 which means a 1% increase in economic growth leads to a decrease in the budget deficit by 2.06%.

Table 4 reveals PMG, MG, and DFE results. The Hausman test for selection between MG and PMG strongly rejected MG and accepted PMG. This confirms the existence of long-run homogeneous relationships among the countries being studied. In contrast to PMG, all the long-run variables in the DFE estimator are insignificant except polity.

The coefficient GS is found significantly and positively linked with the budget deficit the coefficient of GS shows that a 1% increase in GS leads to an increase in the budget deficit by 3.42%. More spending by governments is leading to a deficit situation. This coefficient has more magnitude than other variables which shows that it is more forceful in generating deficit. The positive sign is according to our expectations. In the short run, only third lags of Economic Growth and GS are significant. Economic Growth shows that a 1% increase in economic growth decreases deficit by 10.11%.

Table 5
Estimated Panel Model (C) ARDL (1,1,1,1,1) based on AIC

Dependent Variable: Budget Deficit	PMG	MG	Hausman Test	DFE
Convergence coefficients	-0.72***	-0.93***		-0.77***
	(0.27)	(0.23)		(0.10)
	Long-run coefficients			
$Ln(INF_{it})$	-0.10	0.54		0.30
	(0.27)	(4.02)		(0.42)
$Ln(DS_{it})$	0.41***	- 0.06		-0.25
	(0.11)	(0.49)		(0.28)
$Ln(GDP_{it})$	-0.35	-1.52		-0.39
	(0.44)	(6.09)		(0.67)
$Ln(GS_{it})$	0.90***	2.05		0.61
	(0.23)	(3.07)		(0.61)
			3.90 [0.41]	
	short-run coefficients			
$\Delta Ln(INF_{it})$	2.92	1.03		2.28
	(2.86)	(2.63)		(1.54)
$\Delta Ln(DS_{it})$	-0.29***	-0.27*		0.06
	(0.08)	(0.14)		(0.21)
$\Delta Ln(GDP_{it})$	4.59	4.87		- 4.7
	(4.42)	(9.14)		(2.94)
$\Delta Ln(GS_{it})$	-0.32	-0.09		-0.39
	(0.65)	(1.25)		(0.73)
Δ ELEC $_{it}$	0.08	0.18*		0.19
	(0.09)	(0.10)		(0.12)
Δ ELEC $_{it-1}$	0.06***	0.23***		0.17
	(0.02)	(0.07)		(0.12)
Δ ELEC $_{it+1}$	-0.19	-0.09		-0.15
	(0.34)	(0.34)		(0.12)
Constant	1.18*	9.69		1.29
	(0.70)	(18.89)		(2.58)

***, **, * denotes significance at 1%, 5% and 10% level. Standard errors in parentheses.

Table 5 reveals PMG, MG, and DFE results. The Hausman test for selection between MG and PMG strongly rejected MG and accepted PMG. This confirms the existence of long-run homogeneous relationships among the countries being studied. In contrast to PMG, most of the long-run variables in the DFE estimator are insignificant with high values of standard errors. The value of ECT (Error Correction term) has a negative sign and is highly significant. The speed of adjustment -0.72 is a little high and shows that the model will converge and can correct any disequilibrium within one year by 72%. This table further reveals that when the election year dummy is incorporated into the basic model the results show that DS and GS are significant with right signs. While INF and GDP are insignificant. The Election Year (ELEC) lag dummy coefficient positively and significantly affects the deficit the coefficient value of 0.06 shows that before elections i.e. one year before the election year deficit increases by 6% this verifies the results of the political business cycle theory that before election government increases spending for the likelihood of being re-elected. The election-year dummy and post-election dummy are insignificant. The lag of the election year coefficient is of high magnitude showing clear proof of an increase in government spending for chances of being re-elected. The positive sign is according to our expectations. In the short run, only DS is significant with a coefficient value of 0.40. The coefficient shows that a 1% increase in DS increases deficit by 0.40%.

Table 6

Estimated Panel Model (D) ARDL (1,2,2,2,1,2) based on AIC

Dependent Variable: Budget Deficit	**PMG**	**MG**	**Hausman Test**	**DFE**
Convergence coefficients	-0.87***	-1.25***		-0.82***
	(0.06)	(0.15)		(0.13)
	Long-run coefficients			
$Ln(INF_{it})$	0.96**	-0.02		0.35
	(0.45)	(2.57)		(0.51)
$Ln(DS_{it})$	0.38*	-0.08		-0.32
	(0.20)	(0.70)		(0.37)
$Ln(GDP_{it})$	-2.03***	-3.77		-0.73
	(0.74)	(7.02)		(0.77)
$Ln(GS_{it})$	0.68*	0.54		0.64
	(0.39)	(0.83)		(0.82)
$Ln(FC_{it})$	0.60***	-0.79		0.40
	(0.18)	(0.90)		(0.34)
	Short-run coefficients		*-6.89[0.000]*	
$\Delta Ln(INF_{it})$	4.07	7.30		1.64
	(2.94)	(5.07)		(1.86)
$\Delta Ln(INF_{it-1})$	0.39	-0.44		1.52
	(2.47)	(2.39)		(1.97)
$\Delta Ln(DS_{it})$	-0.37*	0.23		0.19
	(0.19)	(0.54)		(0.29)
$\Delta Ln(DS_{it})$	-0.06	0.57		0.20
	(0.08)	(0.45)		(0.25)
$\Delta Ln(GDP_{it})$	3.13	-7.09		-3.94
	(7.62)	(5.94)		(3.30)
$\Delta Ln(GDP_{it-1})$	3.98	15.63		-0.88
	(5.28)	(16.72)		(3.33)
$\Delta Ln(GS_{it})$	-0.94*	-0.34		-0.55
	(0.57)	(0.39)		(0.81)
$\Delta Ln(FC_{it})$	-0.28**	0.83		-0.20
	(0.12)	(0.77)		(0.22)
$\Delta Ln(FC_{it})$	-0.45*	-0.16		-0.14
	(0.25)	(0.57)		(0.18)
Constant	5.65	43.52		1.97
	(0.80)	(57.11)		(3.38)

***, **, * denotes significance at 1%, 5% and 10% level. Standard errors in parentheses.

It further reveals that when FC (freedom from corruption) is incorporated into this model the results show that INF, DS, Economic Growth, and GS are significant with the right signs. The variable FC is significantly and positively associated with deficit with a coefficient value of 0.60 meaning that an increase in FC leads to an increase in deficit the positive sign is opposite to our expectation. In the short run FC value is -0.28 and is significantly and negatively associated with deficit meaning thereby that an increase in FC decreases deficit by 0.28%.

whereas its lag is also negatively and significantly associated with the budget deficit with a coefficient value of -0.45 both according to our expectations. DS is also significant in the short run with a coefficient value of 0.40.

Table 6 reveals PMG, MG, and DFE results. The Hausman test for selection between MG and PMG fails so we will choose the efficient estimator PMG. This confirms the existence of long-run homogeneous relationships among the countries being studied. In contrast to PMG, all of the long-run variables in the DFE estimator are insignificant with high values of standard errors. The value of ECT (Error Correction term) has a negative sign and is highly significant. The speed of adjustment -0.87 is high and shows that the model will converge and can correct any disequilibrium within one year by 87%.

5. Conclusion

The study has revealed that economic, political as well as institutional factors play a vital role in affecting the study underscores the significant influence of economic, political, and institutional factors on long-term budget deficits. Analysis of the 1995-2023 sample period in a panel study revealed several key findings. Firstly, deficits tended to rise with increasing inflation rates, reflecting the inflationary pressures on government finances. Secondly, higher debt servicing costs, which are directly linked to interest rates, were associated with increased deficits. Thirdly, a slowdown in economic growth was correlated with higher deficits, highlighting the impact of economic performance on fiscal outcomes. Moreover, the size of government expenditure demonstrated a strong positive relationship with deficits, suggesting that larger government budgets contribute to higher deficits, particularly in conjunction with inflation. Surprisingly, the level of democracy, as indicated by the Polity variable, was found to be statistically insignificant in its effect on deficits.

Additionally, the presence of elections was associated with an increase in government spending, likely due to efforts to bolster electoral support. However, the institutional impact variable exhibited a counterintuitive relationship with deficits, suggesting a need for further investigation into the specific institutional mechanisms at play. These findings underscore the complex interplay of economic, political, and institutional factors in shaping budget deficits, highlighting the importance of nuanced policy responses to ensure fiscal sustainability deficits in the long run. When evaluating the sample period from 1995 to 2023 in the Panel study we found that deficit increases as inflation increases. The Debt servicing cost is also found responsible for the increase in the deficit as debt servicing is directly related to the interest rate. While a decrease in economic acceleration showed an increase in deficit which is natural. The government size showed a high coefficient value among all variables of interest which means it is the major cause of generating more deficit alongside inflation. The Polity variable that showed the level of democracy proved to be insignificant. The election dummy showed that before elections governments increase spending for the likelihood of being re-elected. The variable used to check institutional impact showed the wrong sign under our model specifications.

5.1. Recommendations

The fiscal imbalances are escorting to inflation and require immediate fiscal consolidation. There is a need to set some threshold level for fiscal authorities and monetary policy should be

less dependent in the case of South Asian economies including Pakistan. This incessant increase in expenses is unessential. To overcome from situation of distress in South Asian economies governments should systematize their cabinet size. For deficit financing countries usually depend on foreign or domestic loans which increase debt servicing. The positive impact of loans is not evident in the case of Pakistan and other South Asian economies. So loans should be avoided by utilizing domestic resources. Moreover, tax reforms can increase revenue collection which will also lessen dependency on loans. Further tax reforms will also mitigate the debt and its accumulation which resultantly decreased debt servicing costs hence allowing economies to grow better.

Economic acceleration is showing a decrease in deficit so an increase in the output of an economy and proper utilization of resources will help in decreasing the deficit to a greater extent. Moreover, the spending should be made on productive activity to ensure additional economic acceleration. To control spending and increase the deficit situation before elections, election commissions should put an eye on government activities to ensure free and fair elections. The institutions should also be free from corruption and any illegal government involvement this could be done by involving a strong judicial system and rules of law.

5.2. Suggestions and Future thoughts

The proxy used for institutional variable i.e. freedom from corruption should be replaced with some other proxy for clearing the picture of institutions impact on deficit. Future research on the economic, political, and institutional determinants of budget deficits should focus on dynamic modeling to capture feedback effects over time, cross-country analysis to identify common patterns and unique factors, and policy implications for designing fiscal rules and enhancing institutional capacity

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Appendix

Appendix A
Panel Dataset description

Variable	Description	Unit	Acronym	Source
Budget Deficit	Net lending/borrowing is calculated as revenue minus total expenditure.	Percent of GDP	BD	IMF - WEO[a]
Government Expenditure	Total expenditure consists of total expense and the net acquisition of nonfinancial assets.	Percent of GDP	EXP	IMF - WEO
Government Revenue	Revenue consists of taxes, social contributions, grants receivable, and other revenue.	Percent of GDP	REV	IMF - WEO
Inflation, average consumer prices	Expressed in averages for the year, not end-of-period data.	Index	CPI	IMF - WEO
Debt Servicing	Total debt service is the sum of principal repayments and interest actually paid in currency, goods, or services on long-term debt, interest paid on short-term debt, and repayments to the IMF.	Percent of GNI	DS	World Bank-IDSb.
Real GDP per capita	GDP per capita (constant 2005) is gross domestic product divided by midyear population.	U.S.D	GDP	World Bank-NAD and OECD NAD files.
Government Size	General government final consumption expenditure is used as a proxy for Government Size; it includes all government current expenditures. To see the impact of cabinet size and its expenditures.	Percent of GDP	GS	World Bank-NAD and OECD NAD files.
Polity 2	The polity index is used to measure the level of Democracy. It scales from 0-10. Where 0 indicates the least democracy and 10 most democratic.	Index	POL	University of Gothenburgd
Election Year	The Dummy Variable, 0 is used for no parliamentary election while 1 is when a parliamentary election took place. Similarly, 1 when there is Pre and Post Election and 0 otherwise.	N/A	ELEC	Author's Own Calculation
Freedom from Corruption	Freedom from corruption measures the level of corruption in the economy. The scale ranges from 0 to 100. Higher index values denote a lower level of corruption	Index	FC	Heritage Foundation

a) International Monetary Fund, World Economic Outlook.
b) World bank-IDS international debt statistics
c) World Bank-National accounts data and OECD National Accounts data files.
d) University of Gothenburg, The Quality of Government Dataset Codebook.