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# **An Assessment of Debt Sustainability in Scenario of Pakistan's Debt Burden**

**Khurram Ejaz and Attiya Y. Javid<sup>1</sup>**

## **Abstract**

The objective of the study is to assess and analyze sustainability of overall public debt and sustainability of external debt of Pakistan using the debt dynamic equation for the period 1971-2008. The study has analyzed public debt sustainability through interest rate and growth rate differential and level of primary budget balance while external debt sustainability is assessed through interest rate on debt and growth rate of exports differential and current account balance. The results of the study indicate that primary budget deficit and current account deficit have played major role in accumulation of public debt and external debt of Pakistan respectively. The study concludes that public debt and external debt of Pakistan is sustainable in few years and unsustainable in many unsustainable.

**Keywords:** Public debt, External Debt, Sustainability, Debt dynamic equation, Primary budget deficit, current account balance.

**JEL Classification Codes:** C22; C52; F34

## **1. Introduction**

The high stock of debt, slow growth rate of economy and outflow of considerable amount of resources in the form of debt serving have raised questions that whether foreign borrowing on current terms is beneficial for developing economies or not (Loser, 2004). The highly indebted poor countries (HIPC) are experiencing shortage of new funds in their struggle to enhance growth of their economies (Loser, 2004). Even their coordination with International Monetary Fund (IMF) and World Bank has not been found fruitful and debt stock of such countries remains high.

It is evident that most of developing countries often remain under the threats of economic crises with some serious consequences regarding their future economic growth in long run (Loser, 2004). Generally the problem of public debt and its sustainability in developing countries has always been the subject of interest for economists, sociologists and political scientist. Increased mobility and availability of capital and high utilization of borrowing opportunities have helped emerging economies in improvement of their economic performance but this bilateral and multilateral lending has increased the vulnerability of developing economies of the world. Many developing countries have quite high debt stock as proportionate to GDP and very low rate of growth of economy as compared to industrialized countries (Loser, 2004).

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It has been observed that poorest countries of the world are heavily indebted. The situation of foreign debt has possibly become most alarming problem for developing nations of the world after the problem of poverty and surety of human resource development at the start of this millennium. It has been observed that poorest countries of the world are heavily indebted.

The term 'debt sustainability' refers to the level of debt which permits a country to fulfill its present and upcoming servicing obligations without any rescheduling or accumulation of accruals. Sustainable debt is a level of debt where debt ratio turns down or remained unaffected, and the fiscal deficit is not necessarily to be at zero but it should not push the debt ratio to boost or move faster than growth rate of GDP. Literature on issue of public debt does not consider it a dilemma rather it consider mismanagement and unsustainable character of public debt as a trouble.

Literature suggests two aspects in making any sustainability assessment and they depends on country's particular circumstances. First aspect is solvency point of view, where debtor must be able to generate enough funds, to cover debt. Servicing obligations without indefinitely accumulating debt, or in other words, country must maintain a level of primary surplus that would, make lower or at least maintain the level debt-to-GDP ratio. Second, aspect is liquidity point of view, where debtor must be able to manage reasonable amounts of financing in each period to close any financing gap, without having any disorderly adjustments (Fan, 2007), (Wijnbergen, 1989).

The sustainability of foreign debt approach, and its societal expenses and fiscal gains, depends mainly on the domestic policies which shape the matching part of foreign adjustments process. Foreign adjustments need the transmittion to be made to foreigners while domestic alteration or adjustment deals with maintaining internal surplus of savings over investment. Now the question arises that how to bring excess of savings at the level of investment, which is as much as necessary to maintain expansion and growth in output and reduction in budget deficit. Any outstanding budget deficit is financed through an issuance of internal or external debt or by monetization. Macro economic variables such as inflation, GDP growth, constraints or limitations on issuance of debt implied by persistent creditworthiness and solvency, all impose limitations on every financing technique (Wijnberjin, 1989).

Debt sustainability is primary requisite for macro-economic stability and persistent growth of an economy. Usually, high stock of public debt create funds outflow which could crowd out highly required public expenditure. Public debt becomes unsustainable, if it rises persistently as percentage of GDP or if debt servicing starts absorbing the resources of economy. An assessment of public debt sustainability depends upon trend in interest rate, growth rate of economy, revenue and expenditure of government and etc. Sustainability of public debt becomes more important when debt servicing reaches to the level of government revenues.

In Pakistan, the budget deficit and the resultant debt are viewed by one school of thought as reason for most of the economic imperfection i.e. inflation, exchange rate depreciation, low level of public investments and etc. After every few years, we knock the doors of IMF for financial assistance to finance our budgetary and current account deficits in order to maintain our solvency at cost of pledging our dignity and independence in structural adjustment programs of IMF. Spending of Pakistani governments has always been increasing and our economy has always been under the threat of insolvency. So in such a scenario it is quite important to study in detail the sustainability of public debt in Pakistan. The objective of the study is to assess and analyze sustainability of public debt and sustainability of external debt of Pakistan using the debt dynamics equation for public debt sustainability and external debt sustainability for period 1971-2008.

The study is organized as follows: Section one deals with introduction of the issue and objectives of the study. Section two of the study deals with review of literature done in this area. Methodology and data is the subject of section three. Section four is comprised up of analysis and discussion of results, section five finally concludes the whole discussion and present recommendations on the issue.

## **2. Literature Review**

A large body of empirical literature has investigated about sustainability of public and external debt burden of different countries. In highly indebted poor countries (HIPC), revenue resources and earnings generated from exports are being used for debt servicing as a replacement for being utilized for health, education and population welfare. Neither the resources are used to spend for investments and growth of economy or for scientific research and development (Aslam, 2001).

International monetary institutions as well as supporter nations themselves have realized that until the reduction of debt load of heavily indebted poor countries (HIPCs) of globe, there is not any expectation for development and prosperity of the people of those countries. The government and policy makers of HIPCs are unwilling to decrease their reliance on external loans. So, intensity of poverty does not seem to be reduced nor any betterment of human or economic resources is expected (Aslam, 2001).

The former English Chancellor of the Exchequer and Ex. Prime Minister of United Kingdom (U.K.), Gordon Brown had said that debt of poor nations of the world is an immense ethical concern of our time and this decade. It is the most important single reason of poverty and inequality across the world and potentially an utmost threat to harmony. We must cut the debt burden of poor countries of the world and do it at present (Aslam, 2001).

The study done by Bella (2008) has linked the size of primary balance with probability of achieving a targeted debt-to-GDP ratio for Dominican Republic and has estimated a primary balance of 2.5% of GDP to achieve threshold debt ratio level of 25%. It is concluded in study that it is necessary to generate optimistic level of primary surplus that could accommodate economic shocks to achieve any targeted/desired threshold debt ratio. Yilanci and Ozcan (2008) have studied external debt sustainability in context of Turkish economy over the period 1990-2007. The results of an analysis indicate that external debt-to-GDP ratio of Turkey is non-linear as well as non-stationary series and that external debt-to-GDP ratio has threshold effect and debt of Turkey is of unsustainable nature.

Islam and Biswas (2006) have attempted to review the composition and financing of public debt along with assessing and analyzing sustainability of public debt in Bangladesh over the period 1981-2006 which indicate variations in debt ratio are accounted for by interest rate – growth rate differential, depreciation of foreign exchange rate and affect of primary budget balance. The study concludes that interest rate has exhibited a strong influence on change in debt ratio than foreign exchange rate depreciation and affects of primary budget balance and claimed that debt-to-GDP ratio of Bangladesh is sustainable.

The study by Loser (2004) has formulated several guidelines for low and middle income countries regarding sustainability assessment of debt stock. The study has derived a framework

which shows that public debt stock depends upon primary budget balance, interest rate on foreign debt and interest rate on internal debt while debt servicing depends upon exchange rate, inflation, stock of debt, net resource transfer and variations in GDP. The study suggests need analysis, scrutiny and monitoring of money for debtor countries, issuance of increased concessional resources and aids for donor communities and suggests rating agencies to rate countries in broader context so as to remove adverse consequences on debt sustainability of low income countries.

Zaaruka *et. al.* (2004) have applied co integration technique among revenues and expenditures of central government for assessment of debt sustainability of Namibia over the time period of 1990-2002. The study suggests that government debt of Namibia is sustainable and will remain sustainable in near future provided no shocks in macro-economic environment. Crose and Roman (2003) have focused on comparison of cross country fiscal sustainability assessment for monitoring fiscal stance and development of fiscal policy strategy for 12 countries for period of 1990s. The study suggests that fiscal sustainability is dependent on two factors i.e. interest rate – growth rate differential and ratio of difference between observed and targeted primary balance-to-difference between observed and targeted stock of public debt. The results of the study indicate that most countries in the sample need improvement in fiscal stance. The results of the study were verified by using Granger Causality test and estimating Vector Auto regressions.

Ley (2003) has assessed sustainability of fiscal policy and sustainability of public debt burden in economy. The study suggests that while analyzing debt dynamics, the differential of interest rate and growth rate must be greater than zero and government could attain sustainability by generating large primary surpluses. Fiscal policy would be sustainable if solvency of government is satisfied i.e. equalization of primary budget surpluses and liability obligations. The study further suggests that current account balance is of primary importance while making analysis regarding sustainability of external debt. The study also considers exchange rate as an important component of external debt sustainability.

Rangarajan and Srivastava (2003) have decomposed the debt burden into its contributing factors in context of Indian Economy over the period from 1951 to 2002. The results of the study concludes that interest rate-growth rate differential has not been contributive towards debt-to-GDP ratio of India for most of years rather primary budget deficit has played a major role in

increase of debt-to-GDP ratio of India. The results of the study suggest corrections in primary budget balance profile of India. Kauermann and Greiner (no date) have focused on the sustainability of US public debt for period 1916-1995 and conclude that primary budget surplus-to-GDP ratio responds positively towards debt-to-GDP ratio in a non-linear manner. When model is assumed to be linear, a declined response of primary budget surplus to GDP ratio was found towards debt-to-GDP ratio.

The issue of debt has also been investigated from different prospects. Aslam (2001) has analyzed the trends in total external obligations and liabilities of Pakistan, internal outstanding debt, export, import and trade balance of Pakistan, sources and uses of foreign exchange reserves, debt servicing payments on foreign debt and foreign investments in Pakistan over the period of 1998-2001. The paper concludes that ever increasing is slowing down the economic goals of Pakistan. Foreign savings have also reduced due to the rise in debt servicing payments which is resulting in growth of poverty in the Pakistan and debt retirement will save huge annual debt servicing and a large number of financial resources of the country.

The sustainable level of deficit for these three periods 1880's, 1985-95 and 1993-98 was predicted by utilizing a model of sustainable deficit for case of Pakistan by Chaudhary and Anjum (1996). The results show that Pakistan has previously followed fiscal strategies which are not consistent and actual deficit is quite above the sustainable level of GNP in all the three periods. The paper concludes that budget deficit needed to be decreased for sustainability of economic system and firm fiscal growth.

Bilquees (2003) has analyzed the budget deficit, debt accumulation and debt instability of Pakistan. The study concludes that exchange rate effect and primary budget deficit effect positively contributes to debt ratio while interest rate-growth differential do not influences debt ratio as interest rates constantly have been controlled and stay lesser than GDP growth rate. She explains that accrual of fiscal deficit and resultant debt burden in Pakistan has its roots in early ignore of resource mobilization. She concludes that all macro-economic indicators have been badly and harshly affected as a result of soaring fiscal deficits and debt servicing of huge debt which is used to fund accumulated deficits has absorbed all available resources.

Mahmood *et. al.* (2009) have utilized various debt ratios such as debt-to-GDP ratio, debt-to-exports ratio and external debt-to-GNI ratio and debt servicing-to-GNI ratio for analyzing sustainability. The study concludes that public and external debt level has been far from sustainability since last three decades in Pakistan. Jafri (2008) forecasts the sustainable external debt for Pakistan for period of 2009-2013 which indicate that change in foreign debt-to-GDP ratio is contributed by non interest current account balance, net foreign direct investment (FDI) flow, servicing on stock of debt, growth rate of economy, inflation and exchange rate variations. As regards the reaction of external debt towards shocks in components of external debt i.e. GDP, FDI, exports growth and exchange rate the study concludes that small individual shocks in components of external debt would increase external debt-to-GDP ratio in near future and it would remain within threshold level but a combined shock in components of external debt-to-GDP ratio would result in a need for debt rescheduling.

Fan (2007) has examined the public debt situation in Pakistan in the light of particular assistance from multi-lateral channels especially from Asian Development Bank by analyzing public debt indicators in Pakistan i.e. internal and external debt stock, debt as percentage of GDP, annual average growth rate of debt, external debt as percentage total public debt and external debt servicing over the improved economic period of 2000-2006 of Pakistan. The study concludes that debt situation is strongly linked with economic stability and growth and suggests the improved debt situation from 2000 to 2007, if continued, will lay Pakistan on persistent growth corridor.

Pasha and Ghaus (1997) have evaluated the composition of public debt and analysis of factors which contributes towards change in stock of public debt for the period of 1980-1995 for analysis. The study indicates that change in external debt-to-GDP ratio is accounted by current account balance, difference between growth rate of economy and interest rate and effects of exchange rate depreciation. The study has indicated various determinants of change in public debt-to-GDP ratio such primary balance, interest rate-growth rate differential and depreciation of exchange rate. Similarly, composition of change in domestic debt-to-GDP ratio was also evaluated. The study concludes that public debt-to-GDP ratio has risen substantially with 28% during period 1980-1995.



### 3. Methodology

The study has investigated overall public debt sustainability and external debt sustainability through the debt dynamics framework following Bella (2008). The analysis begins by the budget identity regarding government sector could be written as:

#### 3.1 Overall Public Debt

The budget identity from Islam and Biswas (2006) regarding government sector could be written as:

$$X + iB = \Delta S + \Delta B \quad (1)$$

Where  $X$  is primary budget balance i.e. deficit,  $iB$  is servicing expense (interest payments) on stock of public debt  $B$ ,  $\Delta S$  is change in money base and  $\Delta B$  is change in stock of public debt.

Using lower case alphabets for proportion of variables as part of GDP and writing  $GDP = PY$  i.e.  $P$  for prices and  $Y$  for commodities.

$$x + ib = s + \frac{\Delta B}{PY}$$

Taking  $\frac{\Delta B}{PY} = \Delta b + b(P^{\wedge} + Y^{\wedge})$  from Islam (2006) and putting in (2)

$$x + ib = s + \Delta b + b(P^{\wedge} + Y^{\wedge})^2 \quad (2)$$

Rearranging

$$\Delta b = x + ib - s - b(P^{\wedge} + Y^{\wedge})$$

$$\Delta b = x - s + ib - b(P^{\wedge} + Y^{\wedge})$$

$$\Delta b = x - s + b(i - P^{\wedge} - Y^{\wedge})$$

$$\Delta b = x - s + b(r - Y^{\wedge})^3 \quad (3)$$

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<sup>2</sup>  $B = b/PY$ ,  $P^{\wedge} = \Delta P/P$ ,  $Y^{\wedge} = \Delta Y/Y$

<sup>3</sup>  $r = i - P^{\wedge}$

Here  $b$  is ratio of debt-to-GDP,  $x$  is primary budget balance as percentage of GDP,  $s$  is change in money base as percentage of GDP,  $Y^{\wedge}$  is GDP growth rate and  $r$  is rate of interest in real terms.

### 3.2 External Debt

We can express external debt relative to exports rather than as proportion of GDP. External debt is considered in US dollars. Rewriting equation (3)

$$\Delta e = z + (i^* - g)e$$

Rearranging

$$\Delta e = z - (g - i^*)e$$

Where  $e$  external debt as percentage of exports,  $i^*$  nominal dollar interest rate,  $g$  is growth of exports and  $z$  is ratio of current account balance-to-exports.

### 3.3 Data

The study covers the time period of 1971-2008. The data of primary budget deficit, reserve money, interest rate and growth rate of GDP is gathered from various issues of Pakistan Economic Survey. The data of public debt, external debt, current account balance, exports has been gathered from International Financial Statistics (IFS) CD ROM 2008.

## 4. Analysis and Discussion of Results

The results of table 1 which have been calculated in the study show that debt-to-GDP ratio has been showing an upward trend since 1971. Variations in debt-to-GDP ratio are positive for the whole time period. In 1971, increase in debt as percentage of GDP, was just 0.011% which have been increased to 1.21% of GDP in 1981 and further increase to 3.81% of GDP in 1991. The change (increase) in debt-to-GDP ratio was 8.922% in 2001 and this change of debt-to-GDP ratio reaches to 12.62% in 2008. This change in debt-to-GDP ratio indicates an intensity of changing (increasing) debt burden over the number of years.

Though some of year in the analysis have low increasing intensity of debt-to-GDP ratio, there are few years when change in debt as percentage of GDP has decreased or reduced i.e. 1974, 1977, 1981, 1984, 1987, 1988, 1993, 1995, 2000, 2004. For all the other years in the analysis, debt as percentage of GDP is showing a positive increasing trend. This increasing trend is showing the rate of accumulation of debt in Pakistan, which means that debt burden of Pakistan, has been increasing since 1971.

This study has defined two components which have potential to influence the changing nature of debt-to-GDP ratio of an economy. These two components which have potential of influencing debt-to-GDP ratio include interest rate and growth differential and differential of primary budget balance and reserve money ratio. If the differential of interest rate and growth rate is positive, it will be increasing debt-to-GDP ratio while negative interest rate and growth rate differential is not be playing role in increase of debt-to-GDP ratio. Looking at the estimates of interest rate and growth rate differential, we get to know that it has negative values for most of the years in analysis, which shows that it has not been playing role in increase of debt burden over the period from 1971 to 2008.

The differential of interest rate and growth rate is showing mixed estimates as for some years this differential has increased while decreased in other years but the ultimate effect of interest rate and growth rate is negative except for a very few number of years. This interest rate and growth rate differential indicates to us that real interest rate in Pakistan since 1971 has been under the control of Pakistani governments for most of the years and thus remained below the growth rate of economy of Pakistan.

TABLE 1: PUBLIC DEBT SUSTANABILITY ANASLYSIS

Years	Change in debt as % of GDP ( $\Delta b$ )	( $x-s$ )	( $r-Y^{\wedge}$ )	Nature of ( $x-s$ ) <sup>4</sup>	Nature of ( $r-Y^{\wedge}$ ) <sup>5</sup>	Nature of Public Debt
1971	0.011018	3.339506	-0.20961	( $x-s$ )>0	$r < Y^{\wedge}$	Unsustainable
1972	0.988519	3.317471	-1.2626	( $x-s$ )>0	$r < Y^{\wedge}$	Unsustainable
1973	2.361184	3.431835	-16.848	( $x-s$ )>0	$r < Y^{\wedge}$	Unsustainable
1974	0.137974	3.562137	-23.217	( $x-s$ )>0	$r < Y^{\wedge}$	Unsustainable

<sup>4</sup> ( $x-s$ ) must be less than zero if greater than zero then it is indicator of unsustainable nature of public debt.

<sup>5</sup>  $r$  must be less than  $Y^{\wedge}$ , otherwise it indicates unsustainability of debt.

1975	0.720763	3.413921	-22.4775	(x-s)>0	r<Y^	Unsustainable
1976	1.465777	3.291714	-11.242	(x-s)>0	r<Y^	Unsustainable
1977	0.992546	3.200795	-4.00259	(x-s)>0	r<Y^	Unsustainable
1978	1.228243	3.328748	-7.81342	(x-s)>0	r<Y^	Unsustainable
1979	1.339894	3.056626	-0.86649	(x-s)>0	r<Y^	Unsustainable
1980	1.216141	3.3136	-9.52782	(x-s)>0	r<Y^	Unsustainable
1981	0.307855	3.166233	-6.6343	(x-s)>0	r<Y^	Unsustainable
1982	1.548197	2.609603	-6.50747	(x-s)>0	r<Y^	Unsustainable
1983	2.242175	3.69943	-2.69329	(x-s)>0	r<Y^	Unsustainable
1984	1.577691	2.248457	-5.41042	(x-s)>0	r<Y^	Unsustainable
1985	3.182295	4.365481	-2.87706	(x-s)>0	r<Y^	Unsustainable
1986	4.600355	3.804298	0.400511	(x-s)>0	r>Y^	Unsustainable
1987	3.506573	3.492482	-2.20054	(x-s)>0	r<Y^	Unsustainable
1988	2.829749	3.461202	-8.97951	(x-s)>0	r<Y^	Unsustainable
1989	3.807847	1.846635	-5.22815	(x-s)>0	r<Y^	Unsustainable
1990	3.620916	0.512269	-2.72975	(x-s)>0	r<Y^	Unsustainable
1991	3.816608	2.568107	-10.0713	(x-s)>0	r<Y^	Unsustainable
1992	6.063387	2.236972	-9.88631	(x-s)>0	r<Y^	Unsustainable
1993	4.966313	1.128608	2.694078	(x-s)>0	r>Y^	Unsustainable
1994	7.128205	0.86971	-3.32005	(x-s)>0	r<Y^	Unsustainable
1995	5.313676	1.579	-5.82725	(x-s)>0	r<Y^	Unsustainable
1996	5.65966	0.578038	-0.22019	(x-s)>0	r<Y^	Unsustainable
1997	7.646578	-1.04885	-1.39791	(x-s)<0	r<Y^	Sustainable
1998	7.284738	-1.17857	2.972029	(x-s)<0	r>Y^	Unsustainable
1999	15.28056	1.703325	-4.73075	(x-s)>0	r<Y^	Unsustainable
2000	6.118523	2.216231	-24.9921	(x-s)>0	r<Y^	Unsustainable
2001	8.922013	-1.09428	-3.34697	(x-s)<0	r<Y^	Sustainable
2002	3.760245	0.78378	1.206647	(x-s)>0	r>Y^	Unsustainable
2003	2.552881	-0.57443	-1.35598	(x-s)<0	r<Y^	Sustainable
2004	3.386884	-0.98314	-11.7103	(x-s)<0	r<Y^	Sustainable
2005	6.937726	-0.38372	-10.0636	(x-s)<0	r<Y^	Sustainable
2006	5.542293	-3.60816	-10.4461	(x-s)<0	r<Y^	Sustainable
2007	9.000673	-3.20077	-4.86703	(x-s)<0	r<Y^	Sustainable
2008	12.65464	22.09315	-8.75353	(x-s)<0	r<Y^	Unsustainable

Author's own calculations

Supporting this fact with literature Bilquees (2003), Rangarajan and Srivastava (2003), Ley (2003) and Islam and Biswas (2006) have also suggested that interest rate and growth differential is a key factor, while making the assessment of sustainability of public debt burden of any country. These studies also suggest that if estimates of interest rate and growth rate differential

are yielding negative estimates it means that this has no role in increasing nature of indebtedness rather negative estimates suggest us that the differential tried to decelerate the variations in debt-to-GDP ratio.

Let's comes to the second component, which has potential to influence and affect the change in debt-to-GDP ratio or in other words a factor which drive change (increase/decrease) in debt-to-GDP ratio. This component is a differential of primary budget balance and change of reserve money-to-GDP ratio. This component reduces primary budget balance by part which could be easily financed by change (increase) in base money. The estimates of this component tell us that for most of the years in Pakistan since 1971, the primary budget balance is negative i.e. in deficit and thus playing a vital role in increasing debt-to-GDP ratio. But for couple of recent years i.e. 2001-2007 the estimates are having negative value but this negative effect of this component for recent years is very minimal. So the estimated results suggest us that primary budget balance (deficit) has major role in acceleration of public debt burden of Pakistan.

A theoretical rationale behind fiscal stability and debt sustainability is that debt-to-GDP ratio will rise in an explosive or (in other words) alarming way if real interest rate exceeds GDP growth of an economy. And even if growth rate of economy is greater than interest rate, continuous primary budget deficits lead towards indebtedness i.e. change/growth in debt-to-GDP ratio to such a high limit which made primary budget surplus compulsory for maintenance of long-term sustainability of debt-to-GDP ratio (Bilquees 2003, Rangarajan and Srivastara 2003, Mahmood *et. al.* 2009). The scenario is same in case of Pakistan, as the estimates of primary budget balance-to-GDP ratio and reserve money-to-GDP ratio differential are having negative sign which means the unsustainable nature of debt stock due to primary budget balance i.e. deficit.

The graphical representation of change in public debt as percentage of GDP, interest rate-growth differential and differential of primary budget deficit-to-GDP and change of reserve money-to-GDP is given in figure 1, figure 2 and figure 3 respectively.

FIGURE 1: CHANGE IN PUBLIC DEBT AS PERCENTAGE OF GDP

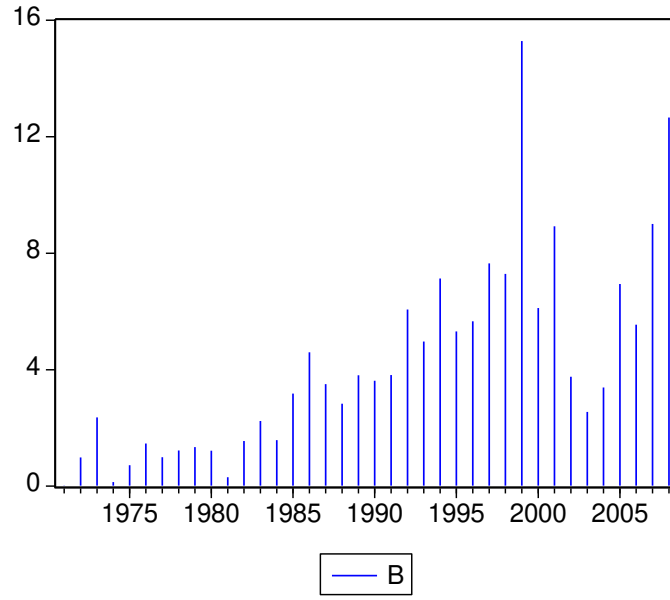


FIGURE 2: PRIMARY BUDGET DEFICIT-TO-GDP AND CHANGE OF RESERVE MONEY-TO-GDP DIFFERENTIAL

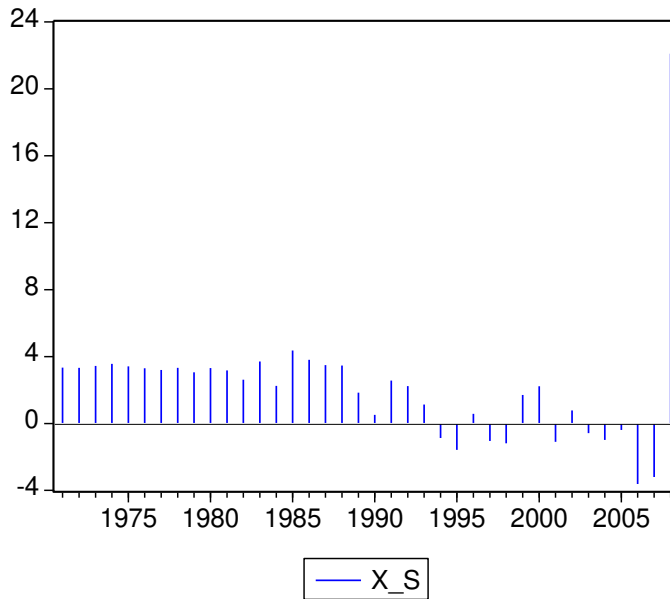
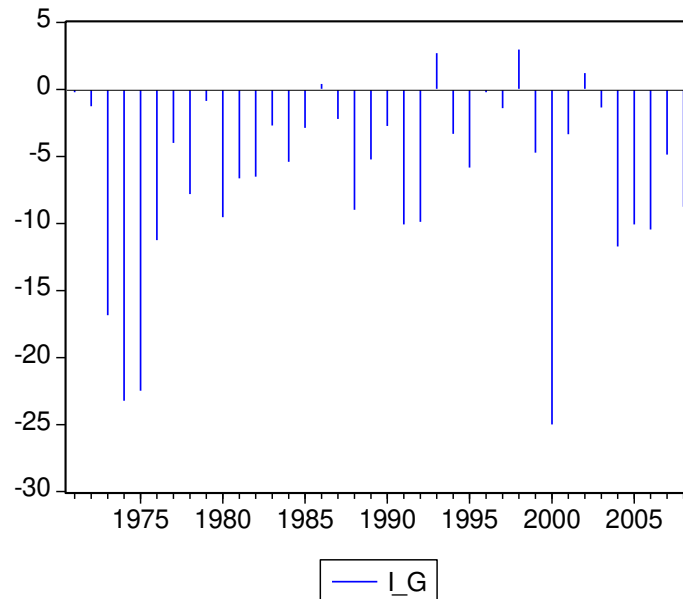


FIGURE 3: INTEREST RATE-GROWTH DIFFERENTIAL



The equation (framework) for assessment of dynamics of external debt burden indicates that external debt-to-export ratio is always influenced and affected by growth of exports, ratio current account balance-to-exports and foreign interest rate. During period 1971-2008, the external debt-to-export ratio of Pakistan remained between the levels of 1.7 to 5.5. If one looks at the changes in external debt-to-export ratio it would become clear that change in external debt as percentage of exports ranges from 6 % to 55 % and estimates are positive for most of the years. Except for 8 years for which the change was negative. The estimates suggest us that external debt as percentage of exports has shown an increasing trend over the years. This study explains the two components, which have influenced change in external debt-to-exports ratio over the period of 1971-2008. One is current account balance-to-exports ratio and another is differential of exports growth and dollar interest rate. The negative estimates of current account balance-to-export ratio for most of years during 1971-2008 shows that current account was in deficit except for just four years i.e. 1983, 2000, 2001 and 2002 during period of 1971-2008. This ratio of current account balance-to-export has been found exerting strong positive impact towards the acceleration of changing external debt-to-export ratio and this strong impact was due to the continuing deficits in current account. This increasing positive and trend of current account deficit-to-exports ratio tell us an unsustainable scenario of external debt burden of Pakistan. The differential of export

growth and interest rate is showing the positive estimates for all of years thus exerting a positive pressure towards increase of external debt. These positive natures of differentials tell us that nature of external debt burden is unsustainable.

TABLE 2: EXTERNAL DEBT SUSTANABILITY ANASLYSIS

Years	External Debt-to-Export Ratio (e)	$\Delta e$	Current Account Balance-to-Export ratio (z)	(g-i*)	Nature of (z) <sup>6</sup>	Nature of (g-i*) <sup>7</sup>	Nature of $\Delta e$
1971	5.012785	0.639484	-	-8.95104	-	$g < i^*$	Unsustainable
1972	3.715161	-1.29762	-	-38.5383	-	$g < i^*$	Unsustainable
1973	5.337938	1.622777	-	-28.7873	-	$g < i^*$	Unsustainable
1974	4.26706	-1.07088	-	-32.7260	-	$g < i^*$	Unsustainable
1975	4.674085	0.407025	-	-5.43842	-	$g < i^*$	Unsustainable
1976	4.756564	0.08248	-0.52444	8.581684	$z < 0$	$g > i^*$	Unsustainable
1977	5.386026	0.629462	-0.52016	-9.21606	$z < 0$	$g < i^*$	Unsustainable
1978	5.058175	-0.32785	-0.43413	-8.84293	$z < 0$	$g < i^*$	Unsustainable
1979	4.232372	-0.8258	-0.52726	-18.5280	$z < 0$	$g > i^*$	Unsustainable
1980	3.357175	-0.8752	-0.29278	-28.9186	$z < 0$	$g > i^*$	Unsustainable
1981	3.0569	-0.30027	-0.2636	3.093576	$z < 0$	$g < i^*$	Unsustainable
1982	3.829991	0.773091	-0.26005	-24.7104	$z < 0$	$g < i^*$	Unsustainable
1983	3.516803	-0.31319	0.012649	0.793787	$z > 0$	$g > i^*$	Sustainable
1984	3.545752	0.028949	-0.3433	-11.5925	$z < 0$	$g < i^*$	Unsustainable
1985	4.14771	0.601958	-0.32873	-16.4857	$z < 0$	$g < i^*$	Unsustainable
1986	3.939279	-0.20843	-0.16755	9.255583	$z < 0$	$g > i^*$	Unsustainable
1987	3.805526	-0.13375	-0.12603	7.88977	$z < 0$	$g > i^*$	Unsustainable
1988	3.264767	-0.54076	-0.2721	9.573762	$z < 0$	$g > i^*$	Unsustainable
1989	3.289983	0.025216	-0.23992	-1.80466	$z < 0$	$g < i^*$	Unsustainable
1990	3.32372	0.033738	-0.26724	2.924934	$z < 0$	$g > i^*$	Unsustainable
1991	3.024205	-0.29952	-0.16393	16.40636	$z < 0$	$g > i^*$	Unsustainable
1992	2.951399	-0.07281	-0.22221	2.274832	$z < 0$	$g > i^*$	Unsustainable
1993	2.924171	-0.02723	-0.34554	-6.44667	$z < 0$	$g < i^*$	Unsustainable
1994	3.240645	0.316473	-0.21446	-6.41916	$z < 0$	$g < i^*$	Unsustainable
1995	2.98341	-0.25723	-0.3305	13.33166	$z < 0$	$g > i^*$	Unsustainable
1996	2.786926	-0.19648	-0.41447	-0.80448	$z < 0$	$g < i^*$	Unsustainable
1997	2.995192	0.208266	-0.17047	-12.5435	$z < 0$	$g < i^*$	Unsustainable
1998	3.146763	0.151571	-0.21927	-3.15541	$z < 0$	$g < i^*$	Unsustainable
1999	3.505089	0.358326	-0.09515	-11.3287	$z < 0$	$g < i^*$	Unsustainable
2000	3.297839	-0.20725	-0.00855	-3.22109	$z < 0$	$g < i^*$	Unsustainable
2001	2.986228	-0.31161	0.177165	1.622686	$z > 0$	$g > i^*$	Sustainable

<sup>6</sup>  $Z > 0$  is benchmark for external debt sustainability.

<sup>7</sup>  $G > i^*$  is benchmark for debt sustainability.



2002	3.051098	0.06487	0.350118	-0.76734	$z > 0$	$g < i^*$	Unsustainable
2003	2.568001	-0.4831	0.256724	22.42062	$z > 0$	$g > i^*$	Sustainable
2004	2.315041	-0.25296	-0.05322	6.018002	$z < 0$	$g > i^*$	Unsustainable
2005	1.92828	-0.38676	-0.20972	7.733449	$z < 0$	$g > i^*$	Unsustainable
2006	1.852849	-0.07543	-0.34753	8.156742	$z < 0$	$g > i^*$	Unsustainable
2007	2.004769	0.151921	-0.40778	-0.00783	$z < 0$	$g < i^*$	Unsustainable
2008	2.33347	0.328701	-0.74079	0.385779	$z < 0$	$g > i^*$	Unsustainable

Author's own calculations

The graphical representation of change in external debt as percentage of exports, interest rate-exports growth differential and current account balance-to-exports ratio is given in figure 4, figure 5 and figure 6 respectively.

FIGURE 4: CHANGE IN EXTERNAL DEBT AS PERCENTAGE OF EXPORTS

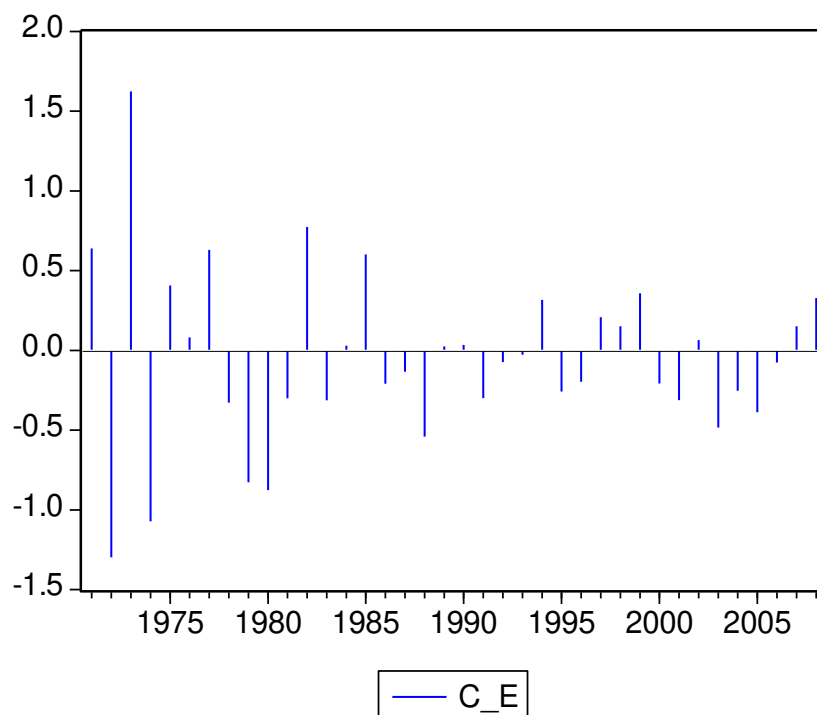


FIGURE 5: INTEREST RATE-EXPORTS GROWTH DIFFERENTIAL

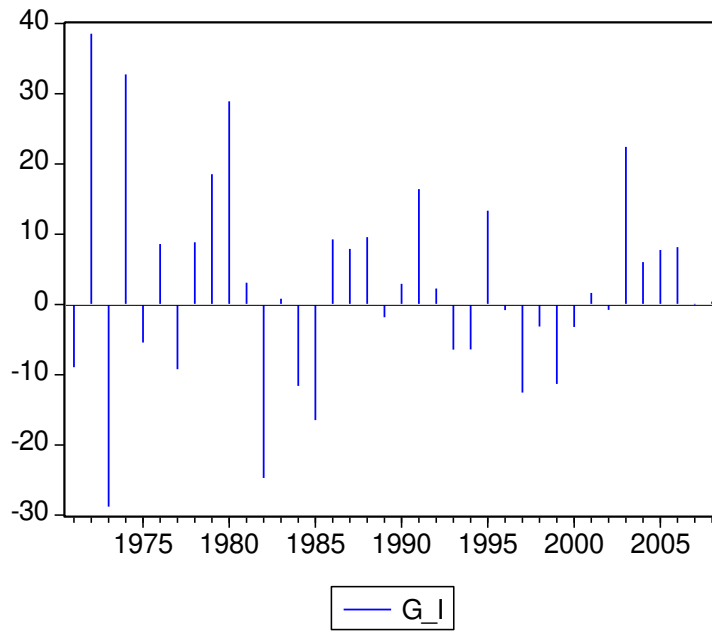
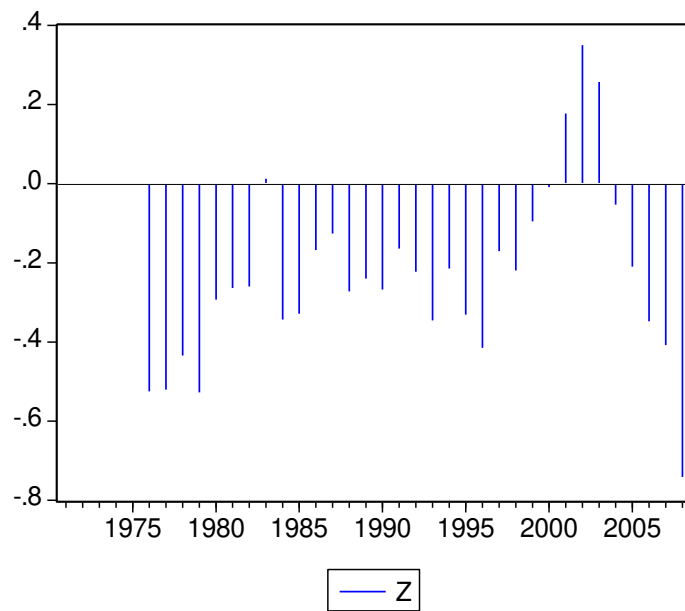


FIGURE 6: CURRENT ACCOUNT BALANCE-TO-EXPORTS RATIO



## **5. Conclusion and Recommendations**

The present study of debt dynamics indicates that growth rate of GDP, interest rate; primary budget balance and changing nature of reserve money are showing a collective influence in variations of overall stock of public debt. Interest rate-growth rate differential has not influenced positively in accumulation of stock of public debt rather differential affect is negative. On another hand, primary budget balance effect has major positive contribution towards the indebtedness of Pakistan. Dynamics and nature of external debt shows that high current account deficits and low growth rate of exports have contributed towards making external debt sustainable as affect of both components is positive over the period 1971-2008. In short, it is concluded that positive contribution of primary budget balance (deficit), current account balance (deficit) and low growth of exports, all have played their part in making debt level of Pakistan unsustainable. The ensure sustainability and get rid of this unsustainable nature of public debt, some implications that come out of study are that it is important to control interest rate at such a level so that it remains below than that of growth rate of economy as done in past. The government expenditures as primary balance have been found positively influencing in accumulation of public debt so it needs to be controlled. Appropriate policies are required to be formulated for growth of exports as the growth of exports is quite low and has continuously positively affected external debt. Greater coordination is required among fiscal policy and monetary policy so that primary budget balance could be reduced and high economic growth rate be attained to ensure long term debt sustainability.

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