

PUBLIC AND EXTERNAL DEBT SUSTAINABILITY IN PAKISTAN (1970s – 2000s)

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Abstract. Apart from reporting the traditional debt ratios, two theoretical models are used to derive and assess the necessary and sufficient conditions for public and external debt sustainability of Pakistan. Our main findings are that the primary fiscal and current account imbalances were the main causes of public debt sustainability issue. Both the public and external debt ratios have remained far from the sustainable levels during 1970s to 2000s. Results based on debt sustainability conditions indicate that although the necessary condition of debt sustainability holds, the sufficient condition for debt sustainability is not met throughout the period except for a brief period of first half of 2000's. This improvement in debt sustainability indicators could not be sustained in the subsequent period and have worsened lately which is a source of concern.

I. INTRODUCTION

After several years of economic reforms the primary imbalances are still the most critical issues on the reform agenda of the country and are central to the issue of debt sustainability analysis, although other factors including GDP growth, interest cost and exchange rate depreciation are also important, their effectiveness in impacting the debt sustainability issue has been less significant. Debt sustainability is generally defined by IMF and World Bank as the ability of a country to meet its current and future debt servicing obligations without recourse to debt rescheduling or accumulation of arrears and without compromising growth.¹ Accordingly, Pakistan is hardly in the position of meeting the said debt sustainability criteria. The benefits of debt rescheduling of 2000s have already been offset by the global recession, uncertain foreign inflows and recent increase in oil prices causing external

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¹Zakaria Benethelin, Ndove Titus and Tjipe Tjiveze (2004), Central Government Debt Sustainability, WP 1/2004. Bank of Namibia Research Department, Namibia.

accounts difficulties. The domestic resource base is also limited as reflected in the primary fiscal imbalance. All these factors are likely to adversely impact the debt sustainability position in the future. The recent Stand by Arrangement signed with the IMF is also not a long-term solution to the fiscal and balance of payments difficulties of the country.

Although the GDP growth of Pakistan increased on average from 5 percent in 1970s to 6.5 percent in 1980s, it was the decline in growth rate to 4.4 percent in 1990s coupled with the high overall fiscal deficit of 6-7 percent of GDP that adversely impacted the debt ratios. Public debt was 54.4 percent of GDP in 1980, which increased to unsustainable level of 103 percent by 2000. The debt servicing liability also continued to rise and in 1990, almost 43 percent of total revenues were consumed to finance debt servicing and by 2000 it reached to almost 63 percent.

Similarly, the persistent current account imbalance was largely instrumental in determining the external debt and debt servicing ratios during 1980s-1990s. Although the economic reforms brought a major shift in trade policies and emphasis was laid on trade liberalization, yet the trade to GDP ratio remained significantly low and exports to GDP ratio stagnated around 12 to 14 percent of GDP despite huge depreciation of rupee. Thus it was the persistent current account deficit of 4 to 5 percent of GDP that pushed up the external debt to GDP ratio from 39.8 percent in 1980 to 57.5 in 2000. The ratio of external debt to foreign exchange earnings increased from 204 percent in 1980 to 334 percent in 2000, while the ratios of debt service payment to GDP and foreign exchange earning also rose from 3.2 to 4.7 and 16.5 percent to 27.3 percent respectively.

During the first half of 2000s the key factors impacting the public and external debt ratios improved to some extent, *i.e.* the growth rate of GDP was 5.3 percent on average, the fiscal and current account deficit declined to 4.6 and 2.55 percent of GDP and a declining trend was also registered in the inflation and interest rates. Thus the declining trend in the key determinants of debt sustainability impacted the rising trend in public debt ratios which declined from 102 percent in 2000 to 74.6 percent of GDP in 2005.²

²This decline in debt to GDP ratio was primarily led by several factors, for instance public debt ratios measured at the new base of 2000 were reported to have declined to 62.5 percent relative to 74.6 percent when measured at the previous base of 1995. Other factors that impacted the debt ratios are largely categorized as push factors, *i.e.* fall in interest payments led by large exogenous capital inflows from workers remittances and logistic support, prepayment of expensive debt and restructuring of expensive loans with cheap loans, increased access to European markets and high growth in export earnings.

However, after a declining trend in debt to GDP ratios since 2001-02 onwards, adverse movement in the fiscal and current account deficit, slow pace of GDP growth high interest rate and uncertain exchange rate environment in the second half of 2000s led to a reversal of public and external debt ratios. Public debt to GDP ratio after steadily declining to 67.9 by 2007, showed signs of deterioration and increased to 68.5 in 2008. The public debt to revenue ratio has also increased from 380.2 in 2007 to 393.6 percent in 2008. Similarly the external debt to export of goods and services after reaching a low level of 169 percent in 2006 has increased to 174 percent in 2008.³

The debt ratios may continue to deteriorate in the future if the twin deficits persist and remain high, the pace of GDP growth remains to be slow and the exchange rate and interest rate environment continue to be uncertain. It is therefore worthwhile to examine and identify the relative importance of these key determinants of the debt sustainability issue and establish the link between debt sustainability and its main determinants.

Plan of the paper is such that, Section II gives the methodology adopted in assessing the debt sustainability issue, *i.e.* the debt ratios and the debt sustainability conditions approach based on two theoretical models, Section III reports the traditional threshold debt ratios and also the results for public and external debt sustainability conditions. The main conclusions are given in the last section of the paper.

II. METHODOLOGY AND DATA SOURCE

To assess the debt sustainability level of Pakistan this paper adopts two approaches. The first approach is based on widely used traditional threshold debt ratios; whereas the second approach based on theoretical models derive debt sustainability conditions for the public and external debt separately. The paper attempts to examine whether these conditions hold in case of Pakistan and identify the factors central to the issue of debt sustainability. It

³In contrast to the Economic survey data reporting debt figures in terms of public and external debt, the data reported in annual reports of SBP is measured in terms of total, domestic and external debt. Therefore, the debt ratios reported in the annual report of SBP 2008 indicate that total debt after reaching the lowest level of 57.9 in 2006 increased to 61.3 percent in 2008. Similarly domestic and external debt increased from, 29.8 and 27 percent of GDP to 31.2 and 29 percent of GDP between 2006 and 2008. Debt servicing as percent of tax revenue has also increased from 56.4 percent in 2006 to 63.5 percent in 2008 and as percent of GDP has increased from 5.6 in 2006 to 6.4 percent in 2008.

also aims at establishing the effectiveness of the economic reforms in impacting the issue of debt sustainability in the pre and post reform period of 1970s to 2000s.

TRADITIONAL THRESHOLD DEBT RATIOS

In most developing countries the issue of debt sustainability is typically examined through the traditional debt indicators approach Gray (1998). This approach of debt sustainability analysis expresses the debt stock and debt servicing as a ratio of selected macro economic indicators. To determine the debt sustainability level, these estimated debt ratios are compared with the benchmark threshold debt sustainability indicators recognized by international organizations.

Although the ratio of public debt stock to GDP is the most common measure of debt sustainability, a more useful indicator of debt sustainability is the ratio of public debt to government revenue.⁴ It reflects not only the true burden that a country has to manage overtime; it also shows the impact of fiscal reforms on debt sustainability level. Similarly in case of external debt, besides the external debt to GDP ratio, it is important to express external debt in terms of foreign exchange earnings and export of goods and services, which are the mirror image of the capacity to manage the external sector imbalances and also the impact of economic reforms on external debt to foreign exchange earnings and export ratios.

Therefore the traditional threshold public debt indicators reported in this paper include the ratios of public debt to GDP and public debt to revenue. Whereas besides the traditional indicators for external debt the present value based debt ratios of external debt to GDP, export of goods & services and to foreign exchange earnings are also taken for reasons of comparison.⁵

However, the traditional debt ratios approach is not free of limitations, for instance these ratios may obscure information, can be statistically

⁴Public debt includes (i) domestic debt (bank and non-bank) and (ii) external debt (excluding non-guaranteed debt by government). Whereas external debt is comprised of public and publicly guaranteed debt and private non-guaranteed debt borrowed from bilateral and multilateral sources internationally.

⁵Besides the debt threshold indicators developed by international organizations, the Maastricht Treaty of the European Union, the Commonwealth Secretariat, and the Debt Relief International have also developed various debt sustainability indicative threshold ratios (Johnson, 2001). The EU and Common wealth threshold indicators are: Fiscal deficit as 3%, public debt as 25%, public debt servicing as 15%, domestic debt as 20% external debt as 5% of GDP.

manipulated and therefore misleading.⁶ Moreover, these ratios are unable to identify the factors that are instrumental in determining the sustainable level of debt to GDP ratios. Thus, the second approach of debt sustainability conditions given below is adopted to overcome this shortcoming of the debt ratio analysis.

THEORETICAL MODEL

Although most of the studies evaluating the debt sustainability issue are based on theoretical models in developed countries, the use of theoretical models for analyzing the debt sustainability issue in Pakistan is hardly made.

A few studies using the debt ratios approach for the earlier period report quite similar results. For instance, Hassan (1999) reports that despite debt relief, the burden of external debt remains extremely heavy and the public debt servicing burden has made the fiscal adjustment difficult. Interest payment is reported as the main component of debt which has led to reduction in development spending and decline in investment rate.

Measuring the debt ratios of Pakistan two other studies suggested that external debt is unsustainable and significantly higher than the average of South Asia (Chaudhary and Anwar, 2000; Siddiqui and Malik, 2001).

Using debt Laffer curve, it is reported that Pakistan's debt is not high enough that it could be written off, in other words it only qualifies for debt rescheduling (Chaudhary and Anwar, 2001).

It is also suggested that the external debt problem worsened during the 1990s mainly because of the heavy dependence on short/medium-term financing to meet external obligations. Short/medium-term debt accounted for 18 percent of Pakistan's external liability and 55 percent of the debt

⁶The GDP statistics of pre-2000 is converted at the new base, *i.e.* at FY 2000 prices, and the figures of post 2000 period are adjusted at the previous base for making proper and meaningful comparison of debt ratios. This exercise takes into account the difference of results unlike those based on the new GDP base of 2000 without any adjustments in the data.

To examine the true burden of external debt sustainability issue the PV approach is also used in the literature. It is preferred over the simple traditional ratios because a discount rate reduces the burden of real debt payments in the later years and also takes account of the concession element of the various interest rates as well as the grace and maturity period. The lower the interest rate the more is the grant element. Similarly the longer the maturity and grace period the more it reflects the grant element of the loan (World Bank, 2005). Thus the debt ratios expressed in terms of present value of external debt to GDP and foreign exchange earnings are also reported in this study.

servicing cost. Debt-servicing accounted for as high as 62.1 percent of the total exports and 46.0 percent of the total foreign exchange earnings in 1996-97 (Kemal, 2001).

It is shown that small deviations in the major components of external debt including real GDP growth, non interest current account balance o GDP ratio, the ratio of net non debt creating capital inflows to GDP and exchange rate depreciation may increase external debt to GDP ratio but it would remain within safe limits. However, substantial shocks to these components of external debt have the potential to cross the debt threshold level (Jafri, 2008).

This section develops a theoretical framework for assessing debt sustainability using a model primarily developed for the industrial countries.⁷ This model is modified according to the prevailing pattern of public finance in Pakistan and the derived necessary and sufficient conditions of debt sustainability are tested using the accounting approach, largely used by IMF and World Bank (2005), to determine the debt sustainability position of Pakistan for public and external debt separately. It will also identify the key factors that are instrumental in determining the debt sustainability level of Pakistan.⁸

PUBLIC DEBT AND FISCAL SUSTAINABILITY CONDITIONS

The budget deficit in developed countries is mostly financed by incurring domestic debt, *i.e.* by issuing interest bearing bonds; therefore their typical budget constraint can be expressed in the form of an identity given as below (Papadopoulos and Sidiropoulos, 1999).⁹

$$G_t - R_t + i_t B_{t-1} = \Delta B_t$$

In contrast to developed countries, governments in less developed countries rely heavily on seigniorage revenue and external borrowings to meet the fiscal and external accounts deficit. Therefore the two models incorporate the

⁷The budget constraint approach to sustainability of fiscal policy was initially developed for the industrial countries where it is assumed that seigniorage revenue was unimportant and all public debt was in domestic currency. In the context of developing countries, issues like reliance on seigniorage to finance deficit, foreign currency borrowing, concessional lending and grants are also important. Hence, the model specification requires necessary improvement.

⁸Martin, Mathew, "Has Debt Relief Made Low Income Countries Debt Sustainable", Debt Relief International (2004).

⁹Our model is heavily drawn from Cuddington (1996), Papadopoulos and Sidiropoulos (1999) and Santaella (2000).

effects of seigniorage revenue and external borrowing in deriving the debt sustainability conditions for public and external debt. While seigniorage revenue derived from budgetary support of the Central Bank is highly inflationary and impacts the interest cost of debt, external borrowings add to the total debt stock and debt servicing burden of less developed countries.

Pakistan, like other developing countries, has been financing on average 30 percent of its fiscal deficit from external sources and the domestic sources include on average 30 percent bank borrowing and 40 percent non-bank borrowing. Although the composition and percentage share of the two sources of deficit financing has varied over time, reliance on the two sources has remained to be substantial in financing budget and current account deficit.

Variables/Years	1970s	1980s	1990s	2000s
	Percent of GDP			
Primary Deficit	5.9	3.5	1.3	-2.0
Overall Deficit	7.6	6.8	7.3	4.6
	Percent of Overall Deficit			
External Financing	50.9	22.6	30.7	26.5
Domestic Financing	49.1	77.4	69.3	73.5
Bank borrowing	21.2	27.8	28.5	12.0
Non-Bank borrowing	28.0	49.6	40.8	57.5

Source: Self-generated using CD-IFS (2007)

The above mentioned budget constraint can, therefore, be modified and applied to the debt sustainability analysis of developing countries given as below:

$$G_t - R_t + i_t B_{t-1} = \Delta B_t + \Delta H_t \tag{1}$$

The LHS of the budget constraint shows the components of budget deficit, *i.e.* primary deficit plus the nominal interest payment on public debt and the RHS of the budget constraint identifies the sources of financing the fiscal gap. Where,

$$B_t = B_t^D + B_t^F$$

$$R = \text{Tax revenue} + \text{Non-tax revenue} + \text{Surcharges} + \text{Grants}^{10}$$

¹⁰Grant proceeds are a financing component and is not debt generating. So we include it in the revenue receipt.

- G = Government expenditure (exclusive of interest payments). It includes current and development expenditure
- B_t = Where B_t , the stock of public debt at the end of year t
- B_t^D = Domestic Debt
- B_t^F = External Debt expressed in US \$ (excluding guaranteed & non-guaranteed private debt)
- i_t = (average) Nominal interest rate
- H_t = Monetary Base for budgetary support

With a few manipulations and rearranging the terms we get the fundamental fiscal sustainability identity given as below:

$$b_t = \frac{(1+r_t)}{(1+g_t)} b_{t-1} - \bar{s}_t \quad (2)$$

$\bar{s}_t = ps_t + \mu h_{t-1}$ is government surplus interpreted as the primary surplus inclusive of seigniorage revenue (*i.e.* budgetary support from central bank), μ is the rate of growth of money and $h_t = H/Y$ is the seigniorage revenue, g_t is the real economic growth, r is real interest rate, b_t is stock of public debt to GDP, ps_t is the primary balance to GDP, and $(1+r_t)/(1+g_t)$ is the discount factor.

If the interest-growth differential is positive or large ($r_t > g_t$), the debt-to-GDP ratio is regarded as explosive debt dynamics, *i.e.* $r_t > g_t \Rightarrow (1+r_t)/(1+g_t) > 1$, unless the last term in the above equation (2), *i.e.* s_t , the primary surplus (inclusive of seigniorage revenue), is large enough to suppress the explosive tendency of the debt stock. In contrast, the convergent debt-dynamics holds when interest rate is less than the GDP growth rate, *i.e.* $r_t < g_t$.

$$\Rightarrow (1+r_t)/(1+g_t) < 1$$

Subtracting b_{t-1} on both sides of equation (2) gives the change in the debt-to-GDP ratio:

$$\Delta b_t = \frac{(r_t - g_t)}{(1+g_t)} b_{t-1} - \bar{s}_t \quad (3)$$

Thus, equation (3) suggests that if the ratio of primary surplus (inclusive of seigniorage revenue) to GDP ratio is equal to zero ($\bar{s}_t = 0$), the change in

debt to GDP ratio Δb_t will grow at the rate $(r - g) / (1 + g)$, and if the government has a primary deficit, the debt to GDP ratio will grow at the rate greater than $(r - g) / (1 + g)$.

The necessary and sufficient conditions of debt sustainability derived from equation (3) suggest that the debt ratio will stabilize when $\Delta b_t = 0$ and the economy will remain solvent if:

- The necessary condition for debt to be sustainable holds, *i.e.* $r_t < g_t$. On the contrary if $r_t > g_t$ the debt ratio is unsustainable and it will not stabilize so long as interest rate is greater than GDP growth.
- The required sufficient condition to keep the debt to GDP ratio constant is met, *i.e.* average primary surplus is positive $(s_t) > 0$ inclusive of seigniorage revenue $\bar{s}_t = (ps_t + \mu_t h_{t-1})$.

EXTERNAL DEBT: Current Account Sustainability Condition

Pakistan being a small open economy has been resorting to external borrowing to finance its savings-investment gap. To determine the factors that led to prolonged use of external borrowings and external debt sustainability position, a separate model is developed making use of balance of payments identity to derive the external debt sustainability conditions (Jaime, 2001).

The identity for external debt is given as below:

$$D_t - D_{t-1} = i_t^* D_{t-1} - CB_t \tag{4}$$

Where D_t is external debt i^* is nominal foreign interest rate, and CB is current account balance exclusive of interest payments.

Expressing the above identity in terms of ratios of GDP we get the following equation:

$$\frac{D_t}{Y_t} = \frac{(1 + i_t^*) D_{t-1}}{Y_t} - \frac{CB_t}{Y_t} \tag{5}$$

Rearranging the above ratios in lower case letters and expressing in terms of growth of debt to GDP ratio we get equation (6) as the basic equation of external debt

$$\Delta d_t = \frac{r_t^* - g_t}{1 + g_t} d_{t-1} - cb_t \tag{6}$$

Where r^* is real foreign interest rate and g is real GDP growth rate. The above equation explains that if the external sector current account is in balance, then cb is equal to zero and debt to GDP ratio will grow at the rate of $(r - g) / (1 + g)$. Otherwise, if the current account balance is negative, the debt to GDP ratio will grow at a rate greater than $(r - g) / (1 + g)$ and *vice versa*.

Setting the debt ratio equal to zero ($\Delta d_t = 0$) in equation 6, the necessary and sufficient conditions for external debt sustainability are derived.

The two conditions given below indicate that the economy will attain solvency if:

- The necessary condition for debt ratio to stabilize holds, *i.e.* $r_t^* < g_t$, otherwise if $r_t^* > g_t$ then debt accumulation is unsustainable unless the required sufficient condition for debt sustainability is met.
- The required sufficient condition to keep the debt to GDP ratio constant holds and the current account balance is positive. It means ($cb \geq 0_t$) must hold on average to keep the debt to GDP ratio at a steady state level.

Our analysis is based on data source that includes International Financial Statistics (IFS) CD ROM for the period 1971-2008, Global Development Finance and various issues of Economic Survey of Ministry of Finance, Government of Pakistan.

III. RESULTS

This section presents a detailed discussion on the results regarding public debt as well as external debt sustainability using the debt threshold indicators approach and the debt sustainability conditions approach.

PUBLIC DEBT SUSTAINABILITY THRESHOLD INDICATORS

Various public debt sustainability indicators are reported for Pakistan in Table 1 and Figure 1. Firstly, it is shown that the public debt stock was as low as Rs. 127 billion in 1980s, which more than quadrupled in 1990s to Rs. 674 billion and reached an unsustainable level of Rs. 3266 billion by 2000. It continued to increase in the decade of 2000s and was Rs. 4092 billion by the end of 2005 which has lately increased to Rs. 5901 billions by 2008. It means public debt grew from 8.6 percent in the pre reform period of 1980s to as high a rate as 16 percent during the 1990s. Although growth in public debt

declined to as low as 1.1 percent in 2002, thereafter it accelerated to 19.6 percent by 2008.

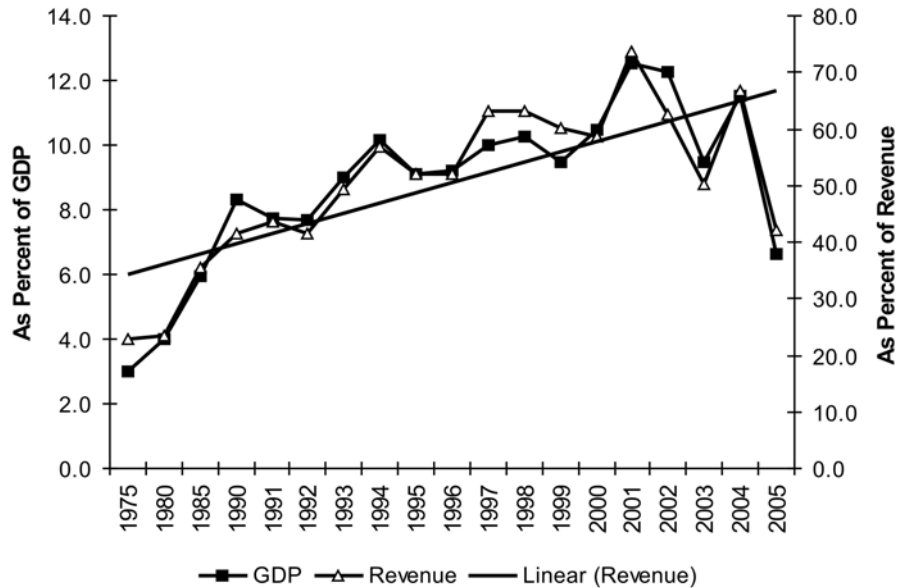
TABLE 1
Indicators of Public Debt Sustainability

Years	1980	1990	2000	2001	2002	2003	2004	2005	2006	2007	2008
Public Debt (Rs. Bls)	127	674	3266	3500	3540	3770	3979	4092	4469	4935	5901
Public Debt (Growth)	8.6	16.0	13.1	7.2	1.1	6.5	5.5	2.8	9.2	10.4	19.6
Public Debt as % of											
Gross Domestic Product [1995]	54.4	79.0	102.8	102.3	97.6	93.8	85.9	74.6	70.3	67.9	68.5
Gross Domestic Product [2000]	45.6	66.1	86.1	85.6	81.7	78.6	71.9	62.5	58.8	56.9	57.4
Revenue	334.6	411.6	614.8	654.1	571.8	537.4	522.8	484.3	415.1	380.2	393.6
Interest payment % of											
Gross Domestic Product	2.1	5.6	7.4	9.1	8.8	6.4	6.9	6.3	4.5	5.8	6.3
Revenue	12.8	29.4	44.5	58.4	51.5	36.7	41.8	41.2	26.7	32.3	36.4
Debt Servicing % of											
Gross Domestic Product	4.0	8.3	10.5	12.5	12.3	9.5	10.5	8.4	6.6	7.2	7.7
Revenue	24.5	43.2	62.8	80.2	71.9	54.3	63.8	54.5	38.8	40.5	44.4

Sources: Government Financial Statistics Yearbook (various issues)
Data for the last two years from Pakistan Economic Survey (2008-09)
Annual Report State Bank of Pakistan 2008

Moreover, in the pre reform period the public debt stock was kept at a relatively low level of 54.4 percent of GDP mainly because of access to abundant foreign assistance along with significant volume of worker's remittances. During the 1990s, concessional loans and capital inflows declined and the growing primary imbalances led to the initiation of the economic reform programs. As a result, a major shift in the maturity structure of debt occurred which led to the use of shorter term expensive external debt and unfunded debt domestically, thereby increasing the debt stock and debt servicing to the highest and unsustainable levels towards the end of 2000. The public debt to GDP ratio increased persistently from 79 percent in 1990 to 102.8 percent of GDP by 2000. Similarly the debt to revenue ratio almost doubled from 335 percent to 615 percent of revenue between 1980s and 2000.

FIGURE 1
Public Debt Servicing Indicators



Although, the two ratios declined substantially in the post 2001 period, *i.e.* after adjusting the GDP data for the previous base year of 1995¹¹ debt to GDP ratio declined to 74.6 percent and debt to revenue declined to 484 percent by 2005, yet both the ratios remain higher than the pre reform period. Not surprisingly decline in the two ratios could not be sustained in the second half of the decade of 2000s, the deteriorating fiscal and current account position led to the reversal of the two ratios. After a steady decline to 67.9 percent of GDP and 380 percent of revenue by 2007 the two ratios registered increase to 68.5 and 394 percent in 2008.

So far as interest payments on public debt is concerned, it rose from a low level of 2.1 percent of GDP in the pre reform period of 1980s to 5.6

¹¹For FY 2004, computed value of Public Debt to GDP ratio is 85.9 per cent, whereas the Debt Policy Statement [2006-07] underestimates the ratio as 67.1 per cent of GDP. On the contrary, the debt to GDP ratio is estimated to be 85 percent in a 'report of activities' by Economic Affairs Division (2002-04). Therefore, the measured value in this study is consistent with the value shown in the report of activities. The Debt Policy Statement figure is a mere statistical artifact of changing GDP base at FY 2000 prices as shown in Table 1.

percent in 1990s and was 6.3 percent of GDP by the end of 2005, after reaching a peak level of 9.1 percent of GDP in FY 2001. This improvement however, was short lived and the interest payment on public debt increased from 4.5 percent in 2006 to 6.3 percent of GDP by 2008.

In a similar manner, interest payment on public debt consumed 12.8 percent of the revenues in 1980s; which rose to 29.4 percent of the revenues in 1990 and further to 44.5 and 58.4 percent of the revenue in 2000 and 2001. Since then it continued to decline to 26.7 percent of revenue by 2006, this declining trend has also reversed since 2007 and has increased to 36.4 percent of revenue in 2008.

Table 1 also shows that public debt servicing as a ratio of GDP increased consistently from 4 percent in 1980s to 12.5 percent in 2001 and after a declining trend in the first half of 2000s, the debt serving ratio has reversed since 2006 and continued to rise till 2008. Similarly, public debt servicing consumed 24.5 percent of the revenues in 1980; it rose to 43.2 percent in 1990 and almost doubled to 80.2 percent in 2001. Although it declined to 38.8 percent of the revenue in 2006 it has increased to 44.4 percent by 2008.¹²

The results of different debt sustainability indicators based on the traditional threshold approach clearly indicate that, the overall position of public debt has always remained above the critical level of 25 percent of GDP set by the EU and the Common Wealth public debt threshold indicators level and the World Bank (2004) sustainable debt threshold indicator of debt stock to GDP of 50 percent. Moreover of particular relevance is the situation in the decade of 2000s. The improved debt ratios in the first half of 2000s could not be sustained and the deterioration of all the debt ratios in the later years is a source of concern. In terms of budgetary revenues, the public debt of 393.6 percent of revenue in 2008 still exceeds the prescribed debt sustainability limits of 250 percent for non-concessional debt and 350 percent for concessional debt (of 20-30 percent) set by the Debt Reduction and Management Committee report (2001). It also exceeds the ratio of present value of debt to revenue of 250 percent set by the international organizations as mentioned in Table 4.

Similarly, the public debt servicing to revenue ratio remained above the target level of 15 percent, as set by the Maastricht Treaty of the European Union, the Commonwealth Secretariat, 13 percent as suggested by the Debt

¹²Annual Report of State Bank of Pakistan (2007-08).

Relief International (DRI), 30 percent set by IMF and 35 percent suggested by the Country Policy and Institutional Assessment (CIPA) World Bank. The fiscal deficit as percentage of GDP ratio remained above the target level throughout and despite enormous economic reforms it appears to be more than 5 percent in 2000s which is definitely above the standard sustainable level of 3% of GDP as agreed upon by the International bodies.

EXTERNAL DEBT SUSTAINABILITY THRESHOLD INDICATORS

Table 2 shows that Pakistan's accumulated total outstanding external debt was as low as US \$ 9.4 billion in 1980s, it more than doubled in 1990s to \$ 19.40 billions and reached to an unprecedented stock of \$ 36.30 billions in 2004 which declined to US \$ 34.07 billion by the end of FY 2005 and has lately increased to US \$ 44.5 billion by 2008 (SBP, 2008). It means external debt grew at unsustainable levels and varied widely, the decade of 2000s show that growth in external debt has varied substantially from -5.5 percent in 2005 to 15.0 percent in 2008.

TABLE 2
Indicators of External Debt Sustainability

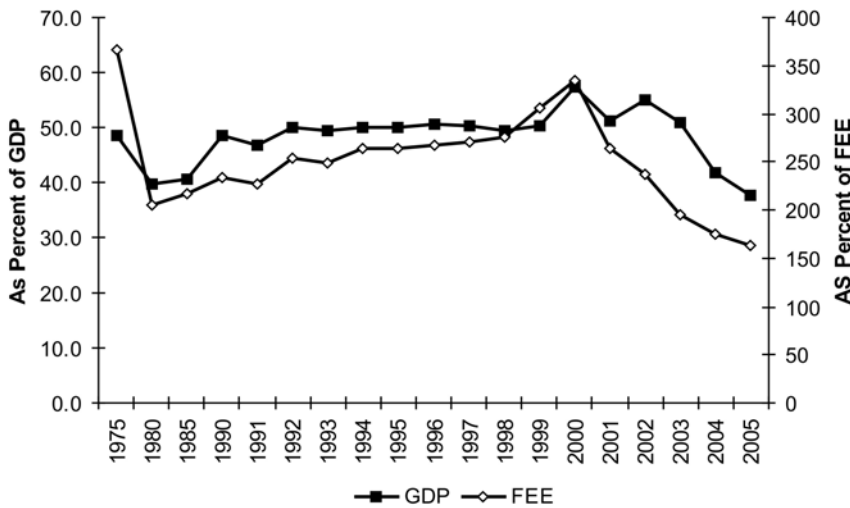
Years	1980	1990	2000	2001	2002	2003	2004	2005	2006	2007	2008
External Debt Stock (\$ mls)	9425	19402	35306	29878	32465	35033	36035	34037	35655	38699	44500
External Debt (Growth Rate)	20.1	11.1	12.2	-15.4	8.7	7.9	2.9	-5.5	4.8	8.5	15.0
External Debt as % of											
Gross Domestic Product	39.8	48.7	57.5	51.1	54.9	51.0	44.8	36.8	33.5	32.2	32.3
Export of Goods and Services	329	306	369	292	287	258	232	196	169	173	174
Foreign Exchange Earning	204	234	334	264	237	197	185	158	139	139	139
Debt Servicing as % of											
Gross Domestic Product	3.2	4.6	4.7	4.9	4.9	4.3	4.6	2.9	2.8	2.3	2.2
Export of Goods and Services	26.6	29.2	30.1	28.3	25.6	21.7	23.9	15.6	14.3	12.3	12.0
Foreign Exchange Earning	16.5	22.3	27.3	25.5	21.1	16.5	19.2	12.6	11.8	9.9	9.5

Source: Global Development Finance (various issues).

The external debt to GDP ratio reported in Table 2 shows that it was 40 percent in 1980; it remained stable around 50 percent in the second half of 1990s and increased to 57.5 percent in 2000. Later it declined to 36.8 percent by the end of 2005 and is now 32.3 percent of GDP by 2008. Although the declining trend in external debt to GDP ratio continued after 2005, it however slowed down in the subsequent period and remained stagnant between 2007-08 with a fractional increase in 2008.

In the same manner it is shown that external debt as percentage of export of goods and services declined to 196 percent in 2005 as compared to 369 percent in 2000 and 329 percent in 1980s (see Figure 2, Table 2). This ratio has begun to increase since 2006 and is 174 percent of export of goods & services in 2008 against 169 percent in 2006. The present level of 174 percent is higher than the threshold level set for the ratio of external debt to export of goods and service and also the present value of external debt to exports of 150 and 140 percent according to the HIPIC and DRI criteria.

FIGURE 2
External Debt Indicators



Moreover, external debt as percentage of foreign exchange earning was as high as 334 percent in 2000 in comparison to 204 percent in 1980 and 234 percent in 1990. It declined to 184 percent in 2004 and further to 158 percent in 2005. Ever since 2006 the ratio has remained stagnant at 139 percent and remains to be so in 2008.

So far as debt servicing on external debt as a percent of GDP is concerned it increased from 3.2 percent to 4.6 percent during the 1990s and remained to be so up till 2004, after which it declined substantially to 2.9 percent in 2005 mainly on account of the debt relief resulting from the rescheduling of debt from Paris Club and Non-Paris Club donors. In 2008 debt servicing to GDP remains to be as low as 2.2 percent.

A similar trend was also observed in the ratio of debt servicing to export of goods and services, which has declined significantly from as high as 30.1 percent in 2000 to 12 percent in 2008. The debt servicing on external debt as percentage of export earnings also shows that it increased from 16.5 percent in 1980 to 22.3 percent and 27.3 percent in 1990 and 2000. Since 2000 it has been declining and was lowered to as low as 9.5 percent of foreign exchange earnings in 2008.

Despite the low external debt ratios reported in the second half of 2000s, the existing debt to exports ratio is higher than the sustainability ratio developed by the Maastricht Treaty of the European Union, the Common Wealth Secretariat and the Debt Relief International.¹³ However, the present level of debt servicing ratios just fulfill the World Bank criteria and is within the limits prescribed by DRI and HIPC Initiative (2004), *i.e.* 12 percent and 15-20 percent respectively.

TABLE 3
Present Value Indicators of Debt Sustainability

Years	1990	2000	2001	2002	2003	2004	2005
Indebtedness Classification		S	S	S	S	M	M
PV of External Debt/GNI		45	44	45	41	35	43
PV of External Debt/EGS		249	222	238	234	156	134
PV of Debt Servicing/GNI	4.9	4.8	5.1	3.5	2.4	4.6	2.3
PV of Debt Servicing/EGS	25.1	26.8	21.3	16.8	12.7	21.2	10.2

Sources: Global Development Finance (2005)
World Development Indicators (various issues)
Indebtedness classification of the country
S: Stands for Severely Indebted
M: Stands for Moderately Indebted
Income Group: Low Income Group

¹³See Johnson (2001) for a detailed discussion of these ratios.

When the external debt ratios are analyzed in terms of the present value of external debt to GNP and export of goods and services, the main results reported in Table 3 suggest that according to the World Bank’s criteria of the critical ratio of present value of debt to GNP and present value of debt to exports of goods and services, Pakistan was classified as a Highly Indebted Country in 2003. The debt to exports ratio was significantly high, *i.e.* 249 percent in 2000 and 234 percent in 2003 which is significantly above the critical limit of 150 percent set by international organizations given in Table 4.

TABLE 4
Sustainable Debt Thresholds

Institutions	PV Debt/ Exports	PV Debt/ Revenue	Additional Criteria
HIPC (2004)	150	250	Debt servicing / Exports ratio is 15-20%
DRI	140	151	Debt Servicing / Exports ratio is 12% and Debt Servicing / Revenue ratio is 13 %
IMF	180	201	PV/GDP is 42% and Debt Servicing/Revenue is 30%
World Bank* (2004)	190	189	[PV/Exports is 220% and PV/GNI is 80 %]* [Also Debt stock/GDP is 50%, Debt stock/ Exports is 275%, Debt Servicing/Exports is 30%]**
CIPA Index ¹⁴	Poor/medium/ strong	Poor/medium/ strong	Debt servicing as 15, 20 and 25 % of exports for poor, medium and strong institutions
	100/150/200	200/250/300	Debt servicing as 25, 30 and 35 % of revenue for poor, medium and strong institutions

*Global Development Finance 2004, **From World Debt Tables, 1990, DRI: Debt Relief International.

In contrast to the traditional sustainability threshold debt indicators set by the DRI, IMF (2004) and World Bank (2004), the present value debt indicators of debt sustainability are significantly higher. For instance, in case

¹⁴Empirical evidence suggests that the debt sustainability indicators also depend on the strength of economic/ debt management policies and institutional framework of less developed countries. Therefore for a Country Policy and Institutional Assessment (CPIA) the World Bank, indicative thresholds are based on the CPIA Index. Countries with a CPIA Index below or equal to 3.25 are defined to have a poor quality of policies and institutions, while a CPIA Index above 3.75 indicates strong institutions and qualitative policies.

of the present value criteria the two critical values for debt to GDP and debt to export ratios are 80 percent and 220 percent respectively and a country is considered as Severely Indebted Low Income Country if any one of the two ratios is above the critical values. In case of a Moderately Indebted Low Income Country, the two ratios must lie below the critical value and can exceed 60% of the critical value. To be a less indebted country both the ratios must lie below 60% of the critical value.

	Severely Indebted	Moderately Indebted	Less Indebted
Debt/GDP = x	$x > 80\%$	$48 < x < 80$	$x < 48$
Debt/Exports = y	$y > 220\%$	$132 < y < 220$	$y < 132$

Although, the external debt to GDP ratio was as low as 41 percent in 2003, it worsened to 43 percent in 2005, whereas the ratio of debt to exports declined substantially from 234 percent in 2003 to 134 percent. In other words as per the 2005 data on external debt, Pakistan can be categorized as a moderately indebted country with sustainable debt threshold levels.¹⁵

PUBLIC AND EXTERNAL DEBT SUSTAINABILITY CONDITIONS

Given the fact that the debt ratios have always remained above the threshold levels, the key factors responsible for public and external debt sustainability issue are identified in this section. The necessary as well as sufficient conditions for debt sustainability derived above were tested for the period 1970 to 2007. Table 5 below shows that public debt has always remained unsustainable except for the early phase of the decade of 2000s. The necessary condition for debt sustainability is fulfilled through out the period under consideration, *i.e.* $r_t < g_t$. It indicates that besides positive average GDP growth of 5 percent throughout the period, Pakistan has been relying on concessional loans and controlled interest rates in the pre reform period. The central bank financing to the government was available at 0.5 percent much lower than the benchmark six-month Treasury bill rate. Although the expensive non-bank borrowing and financial reforms led market-based auction system for Government borrowing raised the government interest payment on domestic debt, the high inflation component of seigniorage led to negative real interest rate throughout except for the early period of 2000s. Therefore, the interest rate factor has been less significant in the debt sustainability issue.

¹⁵The non-availability of Global Finance Data beyond 2005 restricts our calculations of present value upto 2005.

TABLE 5
Public Debt Sustainability Conditions

Decade	r	G	ps	μh_{t-1}	s	$r < g$	$s > 0$	Conclusion
1970s	-9.8	4.8	-6.1	0.8	-5.2	$r < g$	$s < 0$	Unsustainable
1980s	-1.4	6.6	-3.5	-0.1	-3.6	$r < g$	$s < 0$	Unsustainable
1990s	-1.2	4.0	-1.3	0.1	-1.2	$r < g$	$s < 0$	Unsustainable
2000s	1.6	5.0	2.0	0.2	2.2	$r < g$	$s > 0$	Sustainable
FY 2007	-1.9	6.4	-1.5	1.1	-0.4	$r < g$	$s < 0$	Unsustainable

Source: Data from IFS CD ROM

Despite the fact that part of the primary deficit was always financed by growth in money supply and seigniorage revenue was high, the primary deficit continued to remain high and the sufficient condition of a primary surplus that is required to keep the debt/GDP ratio constant was never fulfilled. Primary balances although kept improving have remained negative throughout the period except the period when fiscal discipline was observed in early 2000s.

Thus, among the key determinant of public debt sustainability issue the persistent fiscal deficit has remained central to the issue of debt sustainability, whereas the role of interest rate remained less significant in deteriorating the steady state debt to GDP ratios, despite the fact that economic reforms pushed up the interest cost of raising public debt on domestic bank and non-bank borrowing through auction of T-bills and government bonds. Although the share of interest payment in current expenditure rose from 30 to 37 percent and interest expenditure rose from 6 percent of GDP in 1990s to 6.6 percent of GDP in 2000s on average, seigniorage revenue and high inflation rate kept the average real interest rate at 1.6 percent lower than the average GDP growth of 5 percent. In fact in the first half of the decade of 2000s large inflow of capital sharply reduced the interest payment and even the nominal interest rate remained below the average GDP growth of more than 6 percent. The bench mark T-bill rates declined from 12.8 percent to a record low of 1.6 percent which led to retirement of government debt. Despite the recent increased borrowing from the State Bank of Pakistan, high inflation and increase in T bill rates, the real interest rate still remained negative and below the GDP growth.

Similarly, while Table 6 reports the factors important in the external debt sustainability issue, it is shown that the necessary condition of $r^* < g$ is met for the entire period. Real foreign interest rate has mostly remained negative and low relative to GDP growth which was 5 percent on average. It means interest rate and GDP growth were less significant in accumulation of external debt and raising the debt ratios. However the sufficient condition of primary current account balance to be positive does not hold signifying the fact that current account imbalance has been the core underlying variable in the external debt sustainability issue. Although frequent devaluation and shift in trade policy towards liberalization was meant to boost exports and stimulate economic growth; the fact was that while exports remained stagnant devaluation increased the cost of imported inputs and added to the rupee value of foreign debt. Throughout the period 1970-1990s, the current account remained negative and under pressure due to large trade deficit and slow export growth.

TABLE 6
External Debt Sustainability Condition

Decades	Rate of Interest	Growth of GDP	Primary CAB	Conditions for Debt Sustainability		Outcome
	Real	Real	% of GDP	$r^* < g$	pcab	
	r^*	g	pcab			
1970s	-10.7	5.5	-4.1	$r^* < g$	pcab < 0	Unsustainable
1980s	-3.5	7.1	-1.2	$r^* < g$	pcab < 0	Unsustainable
1990s	-3.6	4.4	-1.1	$r^* < g$	pcab < 0	Unsustainable
2000s	0.9	4.7	4.5	$r^* < g$	pcab > 0	Sustainable
2005	-2.9	6.4	0.4	$r^* < g$	pcab > 0	Sustainable

During the first half of 2000s the combined effect of improved twin deficits and GDP growth, decline in interest rate and stability in exchange rate along with exogenous capital flows, rescheduling and restructuring of debt led to improved debt ratios. Thereafter the factors central to the sustainable debt thresholds worsened and consequently the debt ratios deteriorated in the second half of 2000s.

Although the current account improved substantially in the beginning of 2000s and the sufficient condition for external debt sustainability was met,

however the recent increasing gap in current account from 3.9 percent of GDP in 2006 to 8.5 percent in 2008, imply that the structural weaknesses of the external sector persist and improved current account in the early period of 2000s was largely led by exogenous factors. In other words the external debt sustainability indicators may deteriorate in the near future if the current account deficit persists and rupee continues to depreciate. The primary current account balance had started deteriorating since 2005 as percent of GDP from 4.5 in 2000 to 0.4 percent in 2005 and further turned negative in 2006-08.

Thus, the results reported for public debt sustainability analysis confirm that the primary fiscal imbalances were the main contributing factor to the rise in debt ratios. On the other hand, the interest rate factor was not 'generally' responsible for any positive contribution towards the change in debt ratios, except for the period of 2000s. The high growth of public debt in 1990s coupled with low growth in the revenues, especially in second half of the decade, increased the debt burden tremendously.

On the external debt sustainability analysis, primary current balances played a significant role in contributing to the rise in external debt ratios and the interest rate factor was marginally responsible for contributing towards the rise in debt to GDP ratio in 1990s and 2000s.¹⁶

IV. CONCLUSION

Main conclusion drawn from the above analysis is that the levels of public debt and external debt indicators have been far from the debt sustainability levels since the last three decades.

¹⁶While analyzing the dynamics of external debt in a separate paper the authors found that exchange rate related effect on public debt was an important factor behind the increase in the public debt ratio since 1980s. Frequent depreciation of the Pakistani Rupee against major currencies of the trading partners raised the debt to GDP ratio. In fact capital loss on external debt due to exchange rate depreciation made significant contribution towards increase in public debt to GDP ratio. Although the exchange rate effect minimized as a result of appreciation of the Rupee against US \$ in the first half of 2000s, the gains of restructuring and rescheduling during the same period have subsided with the recent depreciation of rupee.

In the same paper it is reported that as the foreign exchange reserves were quite often needed for the balance of payments support, the process of accumulation of reserves at times also contributed to the increase in external debt although the magnitude remained small. During 2000s, change in reserve was highly significant, and the increase in external debt was partly being offset by increase in remittances and inflow of funds to Pakistan.

Results based on both the sustainable threshold indicators and the debt sustainability conditions are similar and reveal that both the public debt and external debt was unsustainable throughout the decades of 1970s to 1990s. Whereas, the debt situation that improved in the first half of 2000s, has started to deteriorate in the second half of 2000s.

Despite a prolonged reform process, fiscal and current account deficits were persistently high, tax to GDP ratio remained stagnant, diversity in exports continued to be low and the GDP growth pattern was unsustainable and unbalanced. All these factors were largely responsible for little improvement in debt repayment capacity of Pakistan. Moreover, rescheduling of debt seems to be far from truth in managing debt at sustainable levels. The gains of debt rescheduling and debt restructuring have already been eroded by the worsening of debt ratios lately and if the rising trend in debt ratios persists the debt ratios may increase with the growing fiscal and current account deficit. As the debt ratios worsen, macroeconomic management will continue to be difficult and growth prospects will remain uncertain. Any attempt to reduce fiscal deficit through either increase in taxes or reduction in expenditures imply low investment and reduced real income.

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