

Dynamics of Debt Accumulation in Sri Lanka: Impact of primary deficit, GDP Growth and Interest Rate

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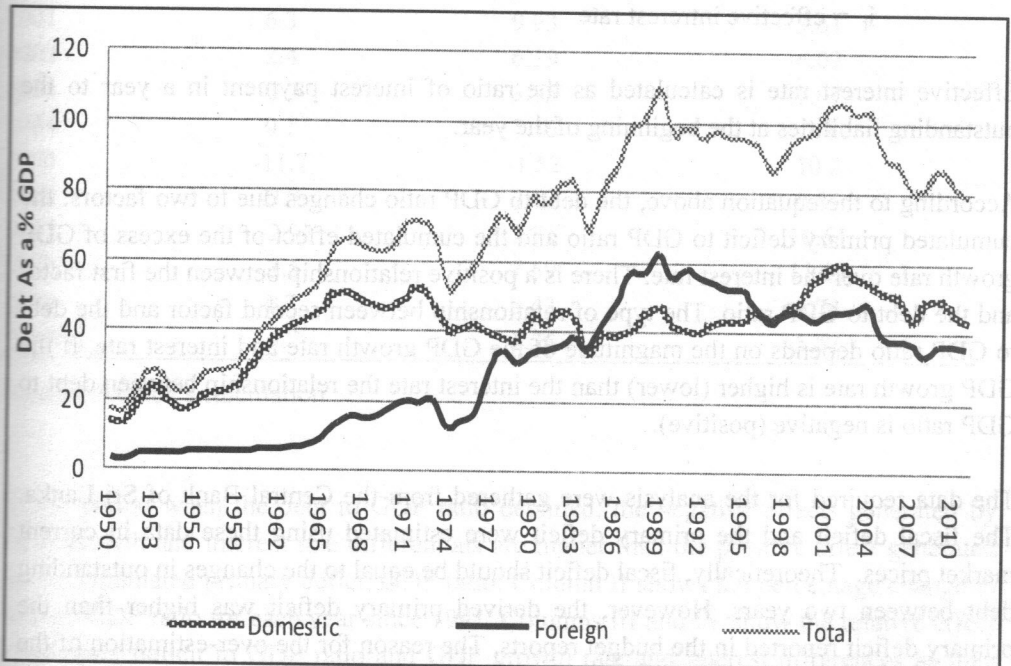
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Introduction

In year, 1988 total value of debt in Sri Lanka exceeded the value of GDP for the first time. The highest debt to GDP ratio in Sri Lanka, 105.6 % was in 2002. However, according to Central Bank statistics, the debt to GDP ratio is currently on a declining trend as presented in figure 1. What has caused the decline in debt to GDP ratio during the last few years? Has overall economic performance contributed to the fall of this ratio or has it been due to sound fiscal policy management? This paper attempts to answer this question.

Figure 1: Government debt as a percentage of GDP (1950-2010)



Source: Central Bank reports 2010

Methodology and Data

The equation given below shows the debt dynamic identity, developed by Rangarajan and Srivastava (2003), to disaggregate the impact of factors that can lead to changes in the debt to GDP ratio. The same equation will be used in this paper, to analyse the debt accumulation process in Sri Lanka.

The cumulated change in debt accumulation in any period is equal to following equation :

$$\sum_{t=1}^T Z_t = \sum_{t=1}^T P_t - \sum b_t \left[\frac{g_t - i_t}{1 + g_t} \right]$$

where, $\sum_{t=1}^T Z_t = [b_t - b_{t-1}] = \text{Change in debt to GDP ratio between any two periods.}$

$\sum_{t=1}^T P_t = \text{Cumulated Primary Deficit /GDP ratio}$

$b_t = \text{Debt /GDP ratio in year } t$

$g_t = \text{GDP growth at current price}$

$i_t = \text{effective interest rate}$

Effective interest rate is calculated as the ratio of interest payment in a year to the outstanding liabilities at the beginning of the year.

According to the equation above, the debt to GDP ratio changes due to two factors: the cumulated primary deficit to GDP ratio and the cumulated effect of the excess of GDP growth rate over the interest rate. There is a positive relationship between the first factor and the debt to GDP ratio. The type of relationship between second factor and the debt to GDP ratio depends on the magnitude of the GDP growth rate and interest rate. If the GDP growth rate is higher (lower) than the interest rate the relationship between debt to GDP ratio is negative (positive).

The data required for the analysis were gathered from the Central Bank of Sri Lanka. The fiscal deficit and the primary deficit were estimated using these data in current market prices. Theoretically, fiscal deficit should be equal to the changes in outstanding debt between two years. However, the derived primary deficit was higher than the primary deficit reported in the budget reports. The reason for the over-estimation of the derived primary deficit could be owing to the fact that values of long-term project loans, which are not a source of budget financing, are included in debt statistics. Foreign investments on Treasury Bills were also recorded in debt statistics.

Results

Table 1 and Figure 2 show the relative effect of the cumulated primary deficit to GDP ratio and the effect of GDP growth rate and interest rate differential on the process of determining the debt to GDP ratio in Sri Lanka since 1990.

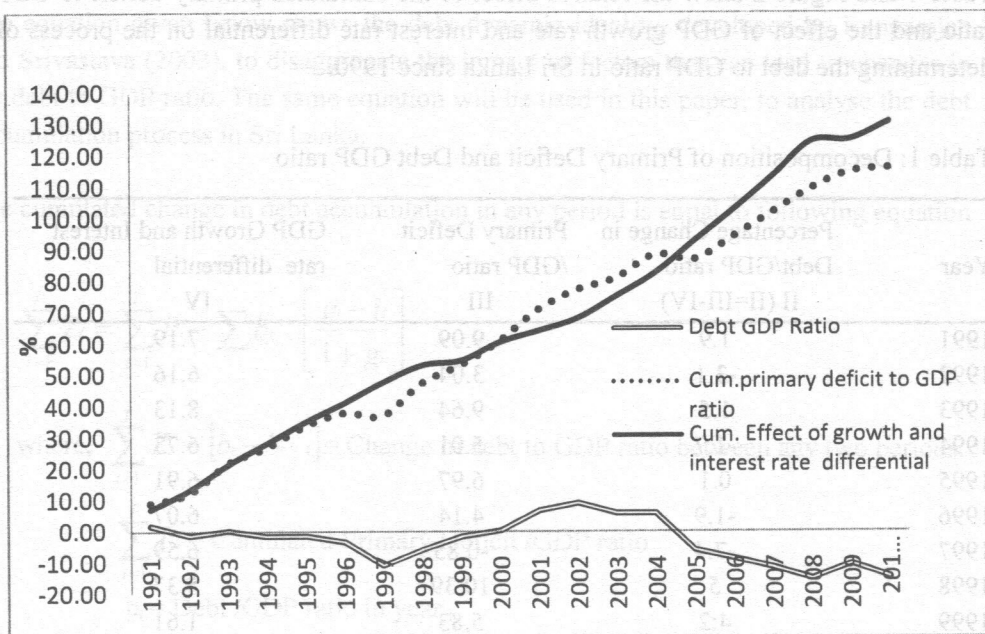
Table 1: Decomposition of Primary Deficit and Debt GDP ratio

Year	Percentage Change in Debt/GDP ratio	Primary Deficit /GDP ratio	GDP Growth and Interest rate differential
	II (II=III-IV)	III	IV
1991	1.9	9.09	7.19
1992	-3.1	3.04	6.16
1993	1.5	9.64	8.13
1994	-1.7	5.01	6.73
1995	0.1	6.97	6.91
1996	-1.9	4.14	6.07
1997	-7.4	-0.85	6.59
1998	5	10.39	5.37
1999	4.2	5.83	1.61
2000	1.8	7.65	5.8
2001	6.3	9.93	3.61
2002	2.4	6.39	4.02
2003	-3.3	3.75	7.07
2004	0.1	7.46	7.4
2005	-11.7	-1.52	10.2
2006	-2.7	7.13	9.85
2007	-2.9	7.72	10.61
2008	-3.6	7.59	11.22
2009	4.7	5.43	0.74
2010(a)	-4.2	1.36	5.52

Source: Author's calculation

In the period when the debt to GDP ratio declined, the negative effects generated by GDP growth and interest rate differentials are higher than the positive effect generated by the cumulated primary deficit GDP ratio. Column II shows the percentage change in debt to GDP ratio for each year since 1991. Columns III and IV show the relative effect of primary deficit to GDP ratio and GDP growth rate and interest differences as they impact on the debt to GDP ratio.

Figure 2: Growth of debt GDP ratio; relative role of cumulated primary deficit, GDP growth and interest rate differential



The primary deficit to GDP ratio has had an augmenting impact (“positive impact”) on debt to GDP ratio except in 1997 and 2005. The effect on debt to GDP ratio has been “debt-contracting” in these two years, apparently owing to the fact that the value of loans taken by the government has been less than the interest payments made.

The GDP growth rate and the interest rate differential have had a debt contracting (or “negative”) impact on debt to GDP ratio since 1990 due to the high nominal GDP growth rate than the effective interest rate. The magnitude of the effect is not same for the entire period. After 2004, the “negative” impact on the debt to GDP ratio generated through the growth and interest rate factor has increased significantly, reaching double digits up till 2008. After 2008 both GDP growth rate and effective interest rate have moved towards pushing the debt to GDP ratio upwards. In 2009 and 2010, average effective interest rate was 8.55, which is higher compared to the preceding years, while the GDP growth rate also was lower.

This indicates the vulnerability of the apparent declining trend of Debt to GDP ratio in Sri Lanka. When this “favourable” trend is driven largely by the accelerated economic growth rates and low interest rates which tend to pull back the debt to GDP ratio, the

“unfavourable trend” of increasing primary deficit to GDP ratio appeared continuing. This, if persists unabated, could put the solvency of the Government at stake.

This is because the debts have to be serviced by the Government through its revenue while benefits of growth largely accrue to the private sector. The possibility of State coffers finding it hard to finance debt in a low growth and high interest rate scenario, where it might even find difficult to augment taxation rates.

Conclusion

The debt to GDP ratio has decreased to 81.9 percent by 2010 as a result of maintaining high economic growth rate since 2004. During this period, the government has utilised a significant proportion of its debt to expand the infrastructure in the country, which has helped achieve accelerated economic growth.

The study indicates that the mere decreasing trend of debt to GDP ratio cannot be considered a signal to the government to further increase borrowing. It should be noted in this context that nearly half of the total Government expenditure is on debt servicing, and that the ratio of total debt service payments to Government revenue currently stands around hundred percent. This implies that the government is at the verge of having to take loans to service the existing loans.

Therefore, it could be concluded that it is crucial for the economy to adopt a sound fiscal policy framework in the short run to increase the Government revenue, on the one hand, and to exercise expenditure restraint, on the other.

Reference

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