FRBM Act- One Size Fit All: Not an Optimum Strategy A Case Study of Haryana and Punjab

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Abstract

The fiscal crisis in the late 1990s caused rise in public debt in most of the Indian states forcing states to go for new borrowings even to finance revenue deficit (RD). To control this situation s Fiscal responsibility and budget management (FRBM) Act was enacted. The FRBM Act does not allow variation in underlying economic factors of the states. In the present paper an endeavor is made to evaluate the usefulness of various constraints on state government's fiscal management. Evidences from Haryana and Punjab show less rigid FRBM Act framework giving flexibility to states would be better option than the existing one.

Keywords: *Public Debt, Simulation, Primary Deficits, Fiscal Deficit, FRBM Act*

INTRODUCTION

The major factor behind economic crisis in India during 1990s was overspending by the government reflected in large fiscal deficits (FD). The government overspending increased the effective demand in the economy. The output could not keep pace with the increase in demand. This led to inflationary pressures in the domestic economy and surge in import to meet this demand. The jump in import further created the foreign exchange problem in the country. (Howes, Lahiri, & Sterm, 2003) mentioned that initially in 1991 the emphasis was to control the FD of central government. Focus on the central government allowed the state governments to go on

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spending spree unhindered thereby negating the positive macroeconomic effects of reduction in FD of the central government. The fiscal crises in the late 1990s experienced by the Indian states were worrying because there was rapid rise in FD and debt level. The new borrowings were used to finance RD thereby crowding out fiscal space for infrastructure investment. This phase reflected significant deterioration in all key deficit indicators of the state governments. The outstanding Debt-GDP ratio of the states at the consolidated level grew from 21.0 per cent during 1997-98 to 31.8 per cent during 2003-04 **(**RBI, 2012-13). Interest payments as a share of revenue receipts (repayment burden) rose from 12.2 per cent to 23.4 per cent and FD as a percent of GDP increased from 2.7 percent to 4.1 percent over the same period. Almost all the States were in need of fiscal correction. Various measures were initiated to control the situation; i.e. debt consolidation and debt write-off to consolidate all central loans contracted by the states. In India, central and state governments adopted a rule-based fiscal framework through the enactment of Fiscal Responsibility Budget Management (FRBM) Acts to provide impetus to the procedure of fiscal sustainability. The Twelfth Finance Commission recommended a roadmap for fiscal correction. Based on these recommendations, all states have enacted their FRBM Acts.

Karnataka, the first state to recognize the need for fiscal correction and to make its financial position sustainable over medium-term, enacted FRBM Act in 2002. It was followed by Kerala, Tamil Nadu and Punjab in 2003. The example set by these States generated further momentum towards adoption of fiscal responsibility legislations by the remaining States. (RBI, 2012-13) highlights that implementing FRBM Act has resulted in reduction in debt burden and debt to Gross State Domestic Product (GSDP) ratio. All the Non Special Category (NSC) states who adopted the FRBM Act have reported decline in their debt to GSDP ratio except for Punjab, Odisha and Uttar Pradesh. At the same time a number of states including Haryana, Gujarat and Karnataka have improved their fiscal indicators significantly. Point of concern is that the present fiscal management framework reflected in the form of FRBM Act has set rigidly similar fiscal parameters for all the states without taking into account their specific circumstances. Interestingly even the thrust of recently introduced flexibility in state FD (from 3 percent of GSDP to 3.5 percent with certain conditions) is on single parameter (FD) rather than a combination of FD with growth rate, inflation and interest rate. The academic literature tells us that economic dynamics of the states including growth rate, inflation and rate of interest play significant role in consolidation of fiscal variables.

Therefore disregard of underlying economic fundamentals and strict focus on few fiscal variables can at best be regarded a sub-optimal strategy. The thrust of the argument in this paper is that rather than focusing on FD as the sole indicator to contain public debt, the strategy involving growth rate and FD would be superior at state level. We have attempted to present a case in this paper that one size fit all strategy to manage fiscal health of the states is not going to serve the purpose and the strategy that gives due consideration to economic conditions of the states would help achieve much superior results.

Box - 1

Fiscal Responsibility and Budget Management Act was legislated at the central level in 2003 to attain sustainability. Central and state governments have adopted a rule-based fiscal agenda through the enactment of Fiscal Responsibility Budget Management (FRBM) Act 2003. The Twelfth Finance Commission (TFC) as part of its fiscal restructuring plan required the States to pass fiscal responsibility legislation to eliminate the RD and reduce FD to 3 percent of GSDP by the year 2008-09. Many states voluntarily introduced their own FRBM Acts even before the enactment of the FRBM Act in 2003 by the central government. Karnataka was the first among the states to enact its FRBM Act in September 2002 followed by Tamil Nadu (2003), Kerala (2003), Punjab (2004) and Haryana (2005). All the others states were encouraged to adopt such legislations to avail of the benefits under incentive schemes recommended by the Twelfth Finance Commission. The report of the 'Group on Model Fiscal Responsibility Legislation' at State Level (2005) provided direction to the states for enacting their FRBM Acts.

REVIEW OF LITERATURE

The goal post for central government has constantly been changing for various reasons. Major objective of the central government FRBM Act 2003 is to attain debt sustainability by containing the FD to 3 percent of GDP and complete elimination of RD by the year 2009. Debt sustainability is a term that has been used with increasing frequency in the academic literature and multilateral policy discussions, but with different meaning under different conditions. (Domar, 1944) led the way in developing the debt sustainability model; he explained that the growth rate of income exceeding the interest rate is a necessary condition for debt sustainability. (Buiter, 1985) suggested that sustainable policy is one that is competent

enough to keep the public sector net worth to output ratio at its current level. (Blanchard, Chouraqui, Hagemann, & Sartor, 1990) provided two conditions for sustainability: a) the ratio of debt to GNP should finally converge back to its initial level and b) the present discounted value of the ratio of primary deficits to GNP should be equal to the negative of the current level of debt to GNP. (Quintanilla, 2009) define that the debt would be sustainable up to the limit that it does not generate payment difficulties and therefore is connected with the ability of the government to service its debt without a default.

Most of fiscal sustainability studies use simple analytical model for assessing sustainability without considering the effects of uncertainty (economic fluctuations) which can introduce bias in policy recommendation. Recent studies propose different methods for bringing uncertainty into the analysis. International Monetary Fund (IMF) in 2002 proposed a framework for assessing external sustainability by evolution of debt dynamics under alternative assumptions regarding the macro economy and sensitivity analysis in order to assess the impact of uncertainty. (IMF, 2003) used VAR approach which simulates distribution of possible future financial conditions for the government and assesses the probability of financial failure. (Burnside, 2004) surveyed various methodological approaches to fiscal sustainability analysis that attempt to model uncertainty and reported that there are various statistical models (Barnhill, & Kopits, 2003); (IMF, 2002); (IMF, 2003); (Xu, David, & Ghezzi, 2003); (Mendoza, & Oviedo, 2004) to estimate the default probability. (Barnhill, & Kopits, 2003) explained that VAR approach would probably be the best to apply in the assessment of specific contingent assets or liabilities and to assess the probability of government default. (Celasun, Debrun, & Ostry, 2006) used a probabilistic approach to public debt sustainability analysis which explains the magnitude of uncertainties affecting debt projections with "fan-charts". (Budina, & Wijnbergen, 2007) used a dynamic simulations approach with a basic version of the steady state consistency approach and also include two different methods to deal with uncertainty: user-defined stress tests and stochastic simulations. (Mendoza & Oviedo, 2008) by recasting the tormented insurer's problem within a dynamic stochastic general equilibrium setup, shows that the tormented-insurer framework has the ability to explain two regularities (volatility of fiscal revenue and average debt ratios) and to yield predictions about the cyclical behavior of the primary balance and government purchases and about the welfare implications of the government's actions. The models employed for assessing the fiscal sustainability invariably use growth

rate of GDP, interest rate, inflation rate, level of accumulated public debt and structural rigidities in FD. There is no internationally separate framework for assessing the sustainability of Sub-National-Government (SNG) debt. (Dholakia, Ram Mohan, & Karan, 2004); (Kishore & Prasad, 2007); (Chakraborty, Mukherjee, & Amarnath, 2009); (Rangaragan & Prasad, 2012) have studied SNG finances particularly on the deteriorating conditions of state finances. However, to the best of our knowledge there is no study of SNGs incorporating the uncertainty element. Moreover, the FRBM Act also does not take into account probable deviation in relevant fiscal variables from the expected/estimated/projected path. Therefore we decided to conduct an exercise to assess the fiscal sustainability of sub national governments (called state governments) in India. For the purpose we have selected two states namely Haryana and Punjab as both are geographically almost similar and economically advanced states in the country. Further, Haryana is counted amongst the fiscally better managed states in the sense that its public debt to GSDP ratio is well below the prescribed limit. On the other hand, Punjab has long been regarded as fiscally mismanaged state and one of the few exceptions where despite the enactment of FRBM act in 2003, fiscal indicators are not within tolerable limit.

This paper endeavors to assess the sustainability of fiscal indicators in Haryana and Punjab with the provisions given by FRBM Act 2005 for Haryana and FRBM Act 2003 for Punjab. It also takes into account whether these states can remain sustainable if we allow some deviation in the projected path of FRBM Act 2005 for Haryana and FRBM Act 2003 for Punjab. It also takes into consideration the effect of uncertainty and likely impact of adverse shocks on the debt to GSDP ratio of selected states.

FRAMEWORK

(Ianchovichina, Liu, & Nagarajan, 2007) have given the framework which assesses the sustainability for the award period taking into account the impact of uncertainty associate with it. The framework is robust and therefore we decided to use it. Accordingly we define sustainability that Sub National Governments would be called sustainable if in the long run they can continue with their fiscal policies while remaining solvent. The fiscal policy of the SNG is considered unsustainable in case where its continuation without change would lead to insolvency in the long run.

(Ianchovichina, Liu, & Nagarajan, 2007) explained that the inter-temporal financing constraint of the sub national government is considered in equation 1

$$b_t - b_{t-1} = n_t\, b_{t-1} - x_t \qquad (1)$$

In equation (1), is the outstanding public state debt, is the average interest rate payable in current year on the outstanding public debt in the previous year, measured at the end of period t, is primary balance in period t, it is assumed that debt matures in one period, interest payments take place during the whole year, the primary balance consist of all flows effect the debt level.

For policy analysis it is significant to represent debt and the sub national government budget constraint (equation 1) in percentages of GSDP and separate the growth and inflation effects on indebtedness.

$$b_t - b_t - t = i_t - x_t - \frac{g_t}{(1+g_t)(1+\pi_t)}\, b_{t-1} - \frac{\pi_t}{(1+\pi_t)}\, b_t - 1 \qquad (2)$$

Where is the outstanding public debt, is primary balance, is interest payments, is the real annual growth as percent of GSDP in current year, and is the annual inflation rate. We can assess debt sustainability under different scenarios with consistent set of projections for primary balance, interest rates, real growth rate and inflation rates in India using equation no. 3

$$b_t = \frac{(1+r_t)}{(1+g_t)}\, b_{t-1} - x_t \qquad (3)$$

Equation no. (3) demonstrates that the sustainability of the fiscal policies of the SNG's depends on real sub national growth rate), the primary balance and interest rate [= (+1)/ (+1)–1], . while in the original manuscript it is like Equation no. (3) demonstrates that the sustainability of the fiscal policies of the SNG's depends on real sub national growth rate(g_t), the primary balance (x _t) and interest rate [r_t = (n_t+1)/ (π_ t+1)–1]. Abbreviations for growth rate and interest rate is not written and formula to calculate interest rate is not written

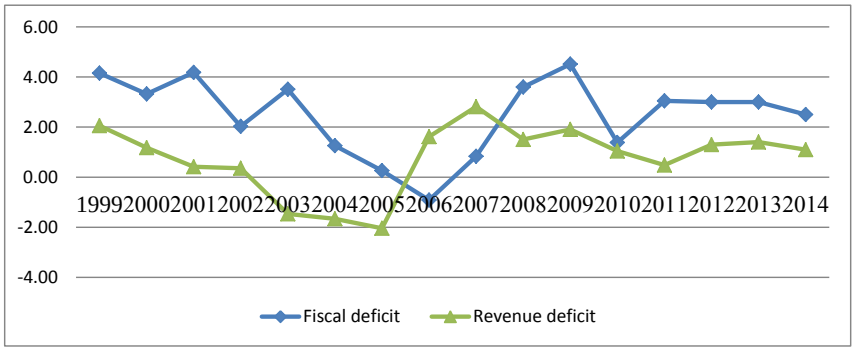
Before we apply the analytical framework, it would be in the fitness of things to discuss the economic condition and fiscal position of Haryana and Punjab to put things in perspective.

FISCAL POSITION OF HARYANA

Before 1990s, Haryana regularly reported revenue surplus in its account

and FD was also under tight control. In the mid 1990s, the policy of prohibition led to sharp fall (share of State excise duty was approximately 2 percent of GSDP) in revenue collection thereby it was putting pressure on RD and FD. The implementation of Fifth Pay Commission (1998) also put heavy burden on the expenditure side of the state finances further distressing the fiscal parameters. This resulted in FD going beyond 4 percent of GSDP in the year 1998-99 for the first time in the state (Bishnoi, 2014). The public debt also started climbing as a consequence of FD induced borrowings and peaked at 27.51 percent of GSDP in the year 2002-03. During this period, Haryana was running RD in the range of 2 percent of GSDP. Interest payment also reached alarming figure of 2.7 percent of GSDP in the year 2002-03. The government of Haryana (GoH) reacted to the deteriorating fiscal conditions and enacted FRBM Act in 2005 for Haryana to control the situation. As an outcome of the steps initiated by the GoH, things started improving and the RD turned into surplus and FD was also restricted between 1 to 2 percent of GSDP during the period 2003-04 to 2007-08. As a consequence the public debt came down to below 20 percent of GSDP in the period. However, FD again went up sharply in 2008-09 onwards. This time surprisingly the major factor behind deterioration in fiscal parameters was severe squeeze in growth of state's own revenue reinforced by the implementation of sixth pay commission reward (Bishnoi, 2014). Interestingly, despite relatively high FD this time, the public debt as ratio of GSDP did not show any rise as the GSDP was growing at a healthy rate that neutralized the impact of high FD (Figure 1). FD remained 3 percent of GSDP for the period of 2011 to 2013 and 2.5 percent of GSDP in 2014 (RBI 2014). On the other hand RD once again deteriorated in 2012 (1.30 percent of GSDP) and continues in 2014 (1.10 percent of GSDP). Primary deficit follows same trend (1.67 per cent of GSDP in 2011 and 1.40 percent of GSDP in 2013) but slightly came down to 0.50 percent of GSDP in 2014 (BE)

Figure: 1 (Haryana's Deficits as Percent of GSDP)



Source: RBI: State Finance –A Study of Budgets for various years

GSDP Data source -Central Statistical Organization
Data for 2013-14 is at revised estimated (RE) and for 2014-15 is at budgeted estimated (BE)

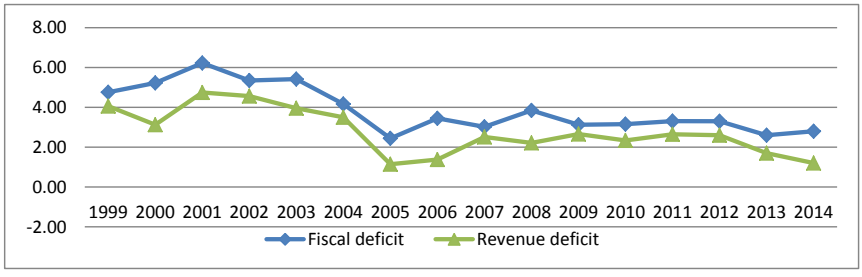
Our contention is that the policy of Haryana state government to maintain its FD below permitted level and thereby pushing the public debt to GSDP ratio below the desirable level in the face of urgent requirement of large expenditure cannot be a prudent policy. It is pertinent to mention here that given its poor social indicators including health, education, and nutrition, requirements of additional expenditure to improve the situation is enormous. In other words the conditions imposed by FRBM legislation 2005 for Haryana and the Finance Commission has shifted the focus from addressing the need of the economy to a single variable in the form of FD.

FISCAL POSITION OF PUNJAB

Punjab is also one of the relatively developed states in the country. The progressive and hardworking farmers of the state made Punjab the grain bowl of the country. Ludhiana became the hub of a number of industries including bicycle, sewing machines, machine tools etc. However, during the 1980s and up to mid 1990s, militancy and consequent break down of law and order severely affected the business climate in the state. Expansion in government expenditure to curb militancy and slowdown in economy played havoc on the fiscal management of the state. In the late 1990s both FD and RD were indicating deterioration in Punjab. RD in the 1999-00 was 4.06 percent of GSDP and FD was 4.76 percent. The GSDP growth rate during this period was 5.63 percent and slide down further to 3.93 percent in the year 2000-01. (The white paper on Punjab finance 2002) reports that the increase of debt burden, increase of wages and salary burden, losses of state public sector undertakings, subsidies to farmers were the main reasons behind poor fiscal parameters of Punjab. In the year 2001-02, the RD and FD reached an alarming level of 4.75 and 6.23 percent of GSDP. This resulted in public debt of Punjab touching an disturbing figure at 48.8 percent of GSDP. A panicked Government of Punjab (GoP) initiated various rescue program to improve situation. The FRBM Act 2003 for Punjab was enacted to demonstrate long term resolve of the GoP to rectify the fiscal indicators. The FRBM Act 2003 for Punjab made its impact and by the year 2010/11 FD came down to 3.16 percent of GSDP. The RD also shrank during this period but to a relatively 2003-2004 from 3.95 percent to 2.44 percent of GSDP in 2010-11**.** Outstanding liabilities as percent of GSDP also reversed the trend and reached at relatively reasonable level of 33 percent of GSDP during the same period. The decline in Punjab public

debt is really impressive against the Thirteenth Finance Commission target to reduce its outstanding liabilities to 42.5 percent of GSDP in the year 2010-11(Figure 2). FD in 2012 was 3.3 percent of GSDP and BE figures showed that it came down further to 2.8 percent of GSDP in 2014. RD and FD followed the trend as RD came down from 2.65 percent of GSDP in 2012 to 1.2 percent of GSDP (BE) in the year 2014 and primary deficit came down from 0.9 percent of GSDP to 0.5 percent for the same period .The discussion leads us to conclude that the FRBM Act 2003 for Punjab has done a great service to the fiscal management of the state.

Figure 2: (Punjab's deficits as percent of GSDP)



Source: RBI: State Finance –A Study of Budgets for various years

GSDP Data source -Central Statistical Organization

Data for 2013-14 is at revised estimated (RE) and for 2014-15 is at budgeted estimated (BE)

A comparison of the impact of provisions of FRBM Act for Haryana 2005 and FRBM Act for Punjab 2003 shows that the act has been unduly harsh on Haryana given its economic and fiscal position but proving a right recipe for the fiscal ills of Punjab. Therefore we decided to probe the issue in detail to reach a definite conclusion.

FISCAL SUSTAINABILITY ANALYSES

This section analyzes the fiscal sustainability of Haryana and Punjab using the framework discussed in section 3. We have attempted to examine the sustainability under various plausible assumptions including the baseline case and historical trend scenario. Efforts are also made to study the impact of short term adverse shock on the sustainability of the fiscal parameters in selected states namely Haryana and Punjab. The baseline case basically means the expected values of critical variables including GSDP growth, inflation and rate of interest.

Box 2. Assumption Underlying Debt Sustainability Projections

The initial level of Public Debt in the year 2012-13 (actual):
Haryana -
19.80 percent of GSDP.
Punjab -
32.02 percent of GSDP.
The real interest rate is assumed at 3.07 percent and Inflation rate is assumed 5.00 percent for both the states on the basis of 14th Finance commission report.
The real economic growth rate of Haryana is assumed to be 14.50 percent for 2013-14, 16.20 percent for 2014-15 and 15.73 percent for the period of 2015-16 to 2019-2020 and for Punjab it is assumed 11.50 percent for 2013-14, 12.93 percent for 2014-15 and 12.63 percent for the period of 2015-16 to 2019-2020 on the basis of 14th Finance Commission report.
The primary deficit = Fiscal Deficit - Interest payment.
FD for Haryana- 3 percent of GSDP for the period of 2013-14 and 2014-15 (as given by FRBM Act), and 3.25 percent of GSDP for the period of 2015-16 to 2020 (Haryana fulfils the conditions set by the 14th Finance Commission for FD upto new limit of 3.25 percent of GSDP)
FD for Punjab- 3 percent of GSDP for all of these projected periods.
Interest payment is calculated by multiplying previous year's debt to interest rate.
Note: - Our projections start from 2014 because actual figures are available for 2012-13 in the latest report of RBI state finance 2014-15.

For baseline case covering the period of 2013/14 to 2019/20, we have taken the projection of real GSDP and primary fiscal balances as specified by the Finance Commission of India for Haryana and Punjab. The projections related to inflation and rate of interest for individual states were not available therefore as proxy, projections of inflation and interest rate for India is used from the 14th Finance Commission report. Incidentally, the projected values of inflation and interest rate for the country by the World Bank are same as used by Finance Commission (Box 2).

The results suggest that in the baseline case (Table 1), public debt of Haryana would increase from 19.8 percent of GSDP in 2013 to 21.93 percent of GSDP in the year 2020. The FRBM Act 2005 for Haryana

targets to keep Haryana public debt at 22.9 percent of GSDP by the year 2015 against which baseline case projection show Haryana public debt to be at 20.35 percent in the year 2015 and even if comparing with the targets given by 14th Finance Commission (up to 2020) it is still is in permissible limits. In other words, if the GoH run FD at 3.25 percent of GSDP per year from for the period 2015 to 2020, the public debt would remain well within the permitted limit under base line scenario.

Table 1. Baseline Simulation Haryana

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		3.07	3.07	3.07	3.07	3.07	3.07	3.07
Real growth rate(g)		9.5	11.16	10.73	10.73	10.73	10.73	10.73
Primary surplus(x)*		-1.60	-1.59	-1.83	-1.80	-1.77	-1.75	-1.73
Debt dynamics ** Debt (%of GSDP)	19.8	20.24	20.35	20.77	21.13	21.44	21.71	21.93

Table 2. Baseline Simulation Punjab

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		3.07	3.07	3.07	3.07	3.07	3.07	3.07
Real growth rate(g)		6.50	7.93	7.63	7.63	7.63	7.63	7.63
Primary surplus(x)*		-0.65	-0.72	-0.77	-0.81	-0.84	-0.87	-0.90
Debt dynamics ** Debt (%of GSDP)	32.02	31.81	31.09	30.54	30.05	29.62	29.24	28.90

**Source: Author's estimation based on equation (3).

*Primary surplus is at percent of GSDP

In Punjab (Table 2), if assumption mentioned in box 2 hold good and GoP run FD at 3 percent of GSDP the public debt would come down from 32.02 percent of GSDP in 2013 to 28.90 by the year 2019/2020. The target set by the FRBM Act for Punjab is 32.29 percent of GSDP in the

year 2014-15. According to new targets given by 14th finance commission debt to GSDP ratio would be 30.07 in the year 2020. Therefore it can be inferred that the FD at 3 percent of GSDP per year is sustainable in the long run under base line case for Punjab.

The above analysis suffers from the limitation in the sense that the relevant values of growth rate, inflation and interest rate might deviate from the projected values. Therefore, we have carried out sensitivity analysis incorporating uncertainty in projected assumed values to assess the sustainability in more robust manner.

SENSITIVITY ANALYSIS

(Burnside, 2004) point out that most of the fiscal sustainability studies use modeling without uncertainty. This can introduce bias in the policy recommendations. In order to remove this biasness we complement baseline analysis with sensitivity analysis. We set key parameters at their historical averages for the period 1999-00/2012-13. These historical averages are considered as results of national and sub national policies. Of Haryana state government and Punjab State Government.

Scenario 1: Historical Trend

The first sensitivity test sets the primary balance, the real growth rate and real effective interest rate at their historic averages for the period of 1999/00-2012/13. If we assume the trend values of critical parameters to continue for the projection period 2013-14 to 2019-20 and maintain the FD at 3.25 percent of GSDP, the public debt of Haryana (Table 3) would come down to 15.21 percent of GSDP in the year 2019-20. Obviously, in this scenario Haryana has lot of more room to expand its fiscal space without compromising its future sustainability. In fact the major factor behind this happy situation for Haryana is the healthy GSDP growth rate. The situation in Punjab is different. The public debt of GoP (Table 4) would slightly come down to the expected level under historical trend assumptions though it would not go up either as shown in the table 4 (near about 1.5 percent). It implies that the public debt of GoP would be sustainable in the long run if the economic variables do not deviate from the historical trend.

Table 3: Historical Trend: Scenario 1 (Parameters at their Historical Average: Haryana)

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		4.17	4.17	4.17	4.17	4.17	4.17	4.17
Real growth rate(g)		10.66	10.66	10.66	10.66	10.66	10.66	10.66
Primary surplus(x)*		-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46
Debt dynamics ** Debt (%of GSDP)	19.08	18.43	17.81	17.23	16.68	16.16	15.67	15.21

Table 4. Historical Trend: Scenario 1 (Parameters at their Historical Average: Punjab)

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		3.76	3.76	3.76	3.76	3.76	3.76	3.76
Real growth rate(g)		7.26	7.26	7.26	7.26	7.26	7.26	7.26
Primary surplus(x)*		-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78
Debt dynamics ** Debt (%of GSDP)	32.02	31.92	31.66	31.41	31.16	30.93	30.70	30.48

**Source: Author's estimation based on equation (3).

*Primary surplus is at percent of GSDP

Box-3. Debt –GSDP projections as given by 14th Finance Commission

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Haryana	25.97	25.91	25.87	25.83	25.79	25.76
Punjab	32.77	32.09	31.49	30.96	30.49	30.07

Since the impact of the Debt and Relief Facility (recommended by Twelfth Finance Commission) and other reform measures is evident from

the significant reduction in the average interest rate on outstanding debt since 2004-05 compared to the earlier years thus the historic average for the real interest rates is no longer relevant therefore in this scenario real interest rate is kept same as in the baseline and other things remain same.

Scenario 2

Table 5. Historical Trend Haryana: Scenario 2 (all variables at historical trend except real rate of interest (r) (r is taken as baseline case)

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		3.07	3.07	3.07	3.07	3.07	3.07	3.07
Real growth rate(g)		10.66	10.66	10.66	10.66	10.66	10.66	10.66
Primary surplus(x)*		-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46
Debt dynamics ** Debt (%of GSDP)	19.80	18.90	18.06	17.28	16.56	15.88	15.25	14.66

Table 6. Historical Trend Punjab: Scenario 2 (all variables at historical trend except real rate of interest (rr) (rr is taken as baseline case)

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		3.07	3.07	3.07	3.07	3.07	3.07	3.07
Real growth rate(g)		7.26	7.26	7.26	7.26	7.26	7.26	7.26
Primary surplus(x)*		-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78
Debt dynamics ** Debt (%of GSDP)	32.02	31.72	31.26	30.82	30.39	29.99	29.69	29.22

**Source: Author's estimation based on equation (3).

*Primary surplus is at percent of GSDP

The second sensitivity test sets the real interest rate at 3.07 percent from 2014 as in the baseline, while leaving the real growth rate and the primary balance at their historic averages for the period 1999/00-2012/13 with persistent primary deficit of -0.46 percent in Haryana and -0.78 in Punjab.

According to historical averages except real interest rate public debt to GSDP ratio is coming down from 19.80 percent to 14.66 percent (Table 5) in 2019-2020 in the Haryana. However, in case of Punjab, the debt to GSDP ratio is decreasing from 32.02 percent to 29.22 percent (Table 6). This again indicates that fiscal policy of Haryana and Punjab is sustainable even if the real rate of interest goes up in future.

For further validation of results we have also conducted stress test to account for the impact of adverse economic conditions on fiscal parameters for a short period.

Scenarios 3: Stress Test

Table 7. Stress Test for Haryana: Scenario 3

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		5.45	5.45	3.07	3.07	3.07	3.07	3.07
Real growth rate(g)		2.73	2.73	10.73	10.73	10.73	10.73	10.73
Primary surplus(x)*		-1.18	-1.18	-1.83	-1.80	-1.77	-1.75	-1.73
Debt dynamics ** Debt (%of GSDP)	19.80	21.50	23.25	2347	23.65	23.78	23.88	23.96

Table 8. Stress Test for Punjab: Scenario 3

Assumption	2013	2014	2015	2016	2017	2018	2019	2020
Real interest rate(r)		4.47	4.47	3.07	3.07	3.07	3.07	3.07
Real growth rate(g)		1.55	1.55	7.63	7.63	7.63	7.63	7.63
Primary surplus(x)*		-0.03	-0.03	-0.77	-0.81	-0.84	-0.87	-0.90
Debt dynamics ** Debt (%of GSDP)	32.02	33.16	34.14	33.47	32.86	32.31	31.81	31.36

**Source: Author's estimation based on equation (3).

*Primary surplus is at percent of GSDP

To take into consideration the impact of adverse shock to the baseline scenario, a stress test is done assuming that the underlying variables swing away from their means by one or two standard deviations in two consecutive years. As per the methodology given by (IMF, 2002) we consider the joint

impact of change in the real interest rate, primary balances and real GSDP. We set real interest rate at its historical averages for the period of 2000-2013 plus one standard deviation, while GSDP and primary balance are at historical average minus one standard deviation. The standard deviation and averages are computed based on historical data.

Combined negative shock of one standard deviation from the historic means in the real effective interest rate ($\mu r + \sigma r$ =5.45, 4.47 percent), the real growth rate ($\mu g - \sigma g$ =2.73, 1.55 percent), and the primary deficit ($\mu x - \sigma x$ =-1.18,-0.03percent) in two consecutive years 2014/15. It will increase the debt burden with 4 percent in case of Haryana (Table 7) and nearly same in case of Punjab (Table 8) in the year 2020. If these shocks are of long period (10 years) they will nearly double the debt burden in Haryana and Punjab state government in the year 2020 as we expected in baseline. But given the economic realities of the states the long run shock is almost unlikely to happen and therefore has no relevance in practical term. In fact, the estimation of impact of adverse shock for a year or two is done to find out the vulnerability of the fiscal numbers. The stress test analysis in case of Haryana clearly shows that its burden would well are within tolerable limits. The case of Punjab is also showing that adverse impact for short period would not alter the fiscal parameters in any significant way.

CONCLUSION

The analysis clearly indicates that one size fit all fiscal strategy imposed by the government of India on states is not the optimal solution to push the state governments on the path of fiscal sustainability. The rigid framework prescribing strict conditions for fiscal parameters seems to be working well in case of heavily indebted and fiscally profligate state like Punjab. It is understandable as different governments in Punjab over the period of time flouted the prudential limits and indulged in populist majors like free electricity to farmers, highly subsidized government services. The unproductive expenditure of Punjab resulted in slowing down of the GDP growth that in turn adversely affected the public debt sustainability limits. Therefore state like Punjab needs strict guidelines to infuse a sense of responsibility.

However the existing fiscal framework has unduly been harsh on a relatively better fiscally managed state like Haryana. The analysis clearly showed that the government of Haryana can maintain relatively higher fiscal deficit without adversely affecting the sustainability conditions

which is not permitted under existing framework. In other words existing framework for fiscal management effectively forbid the state government from increasing the expenditure on activities that can improve the social and economic condition of the state. For example, Haryana is in dire need of increasing expenditure to improve its social infrastructure including education health and nutrition that at present is lagging behind substantially affecting the further economic performance of the state. Therefore it is suggested that the government of India should allow fiscally more responsible state more freedom by indicating upper limit for public debt rather than yearly targets on critical parameters. This policy would allow more freedom to states like Haryana and also incentivize the other states to earn fiscal freedom by their responsible and prudent fiscal management. The poorly fiscally managed states may continue to face strict measures.

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List of Abbreviations

GoH - Government of Haryana
GoP – Government of Punjab
FD – Fiscal Deficit
FRBM – Fiscal Responsibility and Budget Management
RD – Revenue Deficit
GSDP – Gross State Domestic Product
IMF – International Monetary Fund