



STATE DIFFERENTIATED FISCAL DEFICIT SUSTAINABILITY NORMS: ENSURING MACRO CONSISTENCY

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Abstract: States have often argued for differentiated fiscal deficit to GSDP norms for the pursuit of fiscal consolidation. In this paper, we have argued that this is feasible and consistent with Twelfth Finance Commission recommendations provided a consistency is maintained with macro considerations arising from sectoral saving-investment balances. We have illustrated the conditions that ensure flexibility for the states and consistency with macro considerations. In particular, states can judiciously exercise the option given to them for choosing between fiscal deficit to GSDP norm and the interest payments to revenue receipts norm. This choice critically depends on the revenue receipts to GSDP ratios apart from interest rates and growth rates of states relative to the corresponding averages of all states. One key implication of these findings is that fiscal transfer decisions have a bearing on fiscal consolidation choices since revenue receipts to GSDP ratio depends on the scheme of fiscal transfer to states. Thus, fiscal transfer decisions and fiscal consolidation targets should be determined jointly.

Keywords: Fiscal Sustainability; Fiscal Federalism; State Fiscal Deficits; Fiscal Rules; Subnational Debt Sustainability; Fiscal Responsibility Legislation; Intergovernmental Fiscal Transfers; Macro-Fiscal Consistency; Saving-Investment Balance; Fiscal Consolidation; Fiscal Institutions; Public Debt Management

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1. Introduction

The Twelfth Finance Commission (FC12) in their report in chapter 4 provided an elaborate fiscal sustainability structure in which sustainable levels of fiscal deficit and debt for the centre and the states, separately and together, were specified. The relevant targets were derived based on an underlying annual nominal GDP growth of 12%. In their recommendation they had suggested the target fiscal deficit to GDP ratio for the centre and the states at 3% each, and the corresponding target debt-GDP ratio at 28% each. The combined target fiscal deficit and debt, relative to GDP, were kept at 6% and 56% respectively. The combined fiscal deficit target of 6% was derived from an analysis of available investible resources in the system consisting of household sector financial savings which had been close to 10% of GDP to which 1.5% was added as sustainable level of net inflow of capital. From total available investible resources of 11.5% of GDP, 6% was allocated for the central and state governments for their borrowing, leaving 4% for the private corporate sector and 1.5% for the non-government public sector. Thus, there was a consistency between the level of 6% of fiscal deficit with the 6% share being made available from the investible surplus. These ratios have now changed. However, as argued subsequently the 6% target of combined fiscal deficit can still be maintained.

FC12 had recommended that individual states can avail of a major debt relief option provided they enacted their respective fiscal responsibility legislations in which they had the option to choose either a 3% of GSDP as the fiscal deficit target or an equivalent defined in terms of interest payment to revenue receipts ratio. In the event most states defined their sustainability norm in terms of a fiscal deficit level of 3% of GSDP which could be considered as the ceiling. A few states for example Goa, Mizoram, Odisha, Jharkhand, Uttarakhand and Uttar Pradesh, chose to define their sustainability norm in terms of interest payment to revenue receipts ratio. The former option gives a uniform norm for all states. The latter norm gives a uniform norm in terms of interest payments to revenue receipts ratio which implies a differentiated norm for the states when considered in terms of fiscal deficit relative to GSDP.

The FC12 did not provide any explicit reason as to why the available investible resources of 6% of GDP are being divided equally between the centre and the states. In fact, centre's FRBM had already been enacted in 2003 with a 3% fiscal deficit target supplemented by fiscal sustainability rules in 2004. Therefore, the remaining portion of the borrowing space of 6% of GDP

was allocated for the aggregate of states. The FC12 also provided a broad framework as to how to allocate states' share of 3% amongst the states either uniformly or differentially. In both cases the rules were such that the sum of the state specific fiscal deficits would add to the aggregate of 3% provided all states followed one or the other rule. However, if some states followed the first rule of defining their target fiscal deficit as percentage of GSDP and some states followed the option of defining their target in terms of interest payment to revenue receipts ratio resulting in differentiated targets of fiscal deficit to GSDP ratios, the weighted sum of the targeted individual state fiscal deficit to GSDP ratios may differ from the 3% limit under certain circumstances. This would disturb the overall consistency of the fiscal architecture that was envisaged. The 2018 amendment of centre's FRBM continued with the 3% fiscal deficit norm for the aggregate of states although they had reduced their aggregate debt-GDP norm to 20%. However, since this was centre's FRBM, the review committee did not go into the question of allocating the overall 3% fiscal deficit to GDP ratio amongst the states. Thus, the guidelines given by the FC12 have not been modified so far in this regard.

The options given by FC12 regarding defining the sustainability norm in terms of fiscal deficit as percentage of GSDP or as a ratio of interest payment to revenue receipts are available to states even now should they wish to modify their FRLs choosing the option that would benefit them the most. It is shown in this paper that relative to the average, a state that has 1) a higher revenue receipts to GSDP ratio, 2) a higher nominal growth rate or 3) a lower effective interest rate, can fix its target in terms of interest payment to revenue receipts such that it has a higher than 3% fiscal deficit to GSDP norm. Using this variability, some states may opt for the fiscal deficit to GSDP norm of 3% and some may opt for the interest payments to revenue receipts norm if it results in permitting to them a corresponding fiscal deficit to GSDP norm which is higher than 3%. This also is the situation at present since some states have opted for their interest payment to revenue receipts while others continue with their fiscal deficit to GSDP norm. In such a mixed picture, an important issue is how to ensure that the aggregated fiscal deficit of the states remains consistent with the macro norm of 3% of GDP. In this paper, we address this issue.

This article contains seven sections. Apart from the introductory section, section 2 considers, in detail, the sustainability provisions given by FC12. Section 3 derives the aggregation of state level sustainable fiscal deficit norms derived

with respect to GSDP. Section 4 examines the option of mixed choices given to the states. Section 5 compares benchmark fiscal deficit targets with corresponding actuals. Section 6 discusses the different aspects of implementation of state differentiated fiscal deficit norms while maintaining consistency with macro considerations. Section 7 provides concluding observations.

2. Sustainability provisions given by FC12

With respect to fiscal sustainability, the relevant paragraphs in the report of FC12 are paragraphs 4.41, 4.45, 4.79 (b), and 4.79 (c) including 4.79 (c) (vii). The relevant phrases are important and we have reproduced the exact wording of these paragraphs as below.

Paragraph 4.41: *...For a combination of 12 per cent nominal growth rate and 7 per cent interest rate, this (primary deficit) would be equal to 1.25 per cent of GDP. We think that a combined fiscal deficit target, relative to GDP, of 6 per cent would be consistent with the availability of savings of the household sector in financial assets, which is of the order of 10 per cent, the desirable level of current account deficit, and the requirements of the corporate sector and the non-departmental public sector undertakings. The transferable savings of the household sector of 10 per cent of GDP combined with an acceptable level of current account deficit of 1.5 per cent would be adequate to provide for a government fiscal deficit of 6 per cent, an absorption by the private corporate sector of 4 per cent, and by non-departmental public enterprises of 1.5 per cent of GDP. When the revenue deficit becomes zero, the entire fiscal deficit would lead to an augmentation of investment with the total investment as percentage of GDP touching a level in the range of 28 to 30 per cent. Of this total, the household sector could invest about 12 per cent of GDP, the private corporate sector, about 8 per cent of GDP, and the public sector, about 8 to 10 per cent of GDP.*

Paragraph 4.45: *Keeping in view these considerations, we recommend that*

- (i) *The overall debt-GDP ratio on the combined account (with external debt measured at historical exchange rates) may be targeted to be brought down to 56 percent of GDP over a period of time. Since the level is estimated to be as high as 81 percent of GDP at the end of 2004-05, it should be brought down to at least 75 per cent by the end of 2009-10.*
- (ii) *The level of combined interest payments relative to revenue receipts should be brought down from 34 per cent in 2004-05 to 22 per cent in 2009-10, and eventually to about 17 per cent.*
- (iii) *The system of on-lending by the centre to the states should be phased out. The long term goal for the centre and state(s) for the debt-GDP ratio should be*

28 per cent each. Their fiscal deficit to GDP ratio targets should be 3 per cent each.

Paragraph 4.79 (b) *With the system of on-lending being brought to an end over time, the long term goal for the centre and state(s) for the debt-GDP should be 28 per cent each. Their fiscal deficit to GDP ratio targets may be fixed at 3 per cent of GDP each. In both cases, revenue deficit should be eliminated by 2008-09.*

Paragraph 4.79 (c) *Under the assumptions of revenue to GDP ratios, eventually the centre's interest payment relative to revenue receipts would reach about 28 per cent by 2009-10. In the case of states, the level of interest payments relative to revenue receipts would fall to about 15 per cent by 2009-10.*

Paragraph 4.79 (vii): *We recommend that each state should enact fiscal responsibility legislation. This has been stipulated as a precondition for availing the debt-relief scheme as recommended by us in a later Chapter. This legislation should, at a minimum, provide for*

(a) eliminating revenue deficit by 2008-09

(b) reducing fiscal deficit to 3 per cent of GSDP or its equivalent defined as ratio of interest payment to revenue receipts;...

The sectoral saving investment profiles have changed compared to the time when the FC12 had considered these ratios. In particular, the household sector financial savings relative to GDP have fallen to 6.5% considering the average for the years 2023-24 and 2024-25 as per the 2022-23 base GDP series (National Account Statistics, 2026). At the same time, the private corporate sector savings have increased to an average of 10.2% relative to GDP whereas their investment to GDP ratio averages 11.2%, thereby leaving a gap only of about 1% point. The effective interest rates on centre's borrowing and states' borrowing are close to 7%. Under these circumstances, the target of 6% of GDP for the aggregate fiscal deficit of the centre and states can still be retained by adjusting marginally the available investible surplus for the private corporate sector and the non-government public sector. Thus, combining 6.5% household sector financial savings with a sustainable level of net inflow of capital of about 1.5% points² would give an investible surplus of 8.0% of GDP. Of this, if 6% is pre-empted by the centre and state governments as their fiscal deficits, 2% points would be left which can be divided as 1% point each as the net borrowing of the private corporate sector whose borrowing needs have come down, and 1% point for

2. Rangarajan, C (2016): "Can India grow at 8 to 9 per cent?" The Hindu, (<http://www.thehindu.com/opinion/lead/can-india-grow-at-8-to-9-per-cent/article8596824.ece>, Accessed on 17 May 2016.)

the non-government public sector. We can divide the aggregate 6% fiscal deficit to GDP ratio into 3% each for the centre and the states which is consistent with both the FC12 target and the 2018 FRBMA target.

3. Aggregation of state level fiscal deficit norms

In this section, we consider the aggregation of state level fiscal deficit norms when all states opt for either defining it as percentage of GSDP or all states opt for defining it in terms of interest payment to revenue receipts ratio. We need to show that in both cases the sum of individual state target fiscal deficits relative to GSDP would add to the aggregate target of 3% of GDP. We consider the two cases as below:

(a) Targets are defined in terms of fiscal deficit to GSDP ratio

The sum of GSDPs of individual states have historically fallen short of GDP due to exclusion of UTs and other considerations. Let individual state GSDPs be denoted by Y_j where j varies from 1 to n . We can write the following:

$$Y_1 + Y_2 + \dots + Y_n = \sum_{j=1}^n Y_j \quad (1)$$

where $\sum_{j=1}^n Y_j$ falls short of GDP which is denoted by YY .

$$\text{Suppose } \mu \cdot YY = \sum Y_j \text{ where } \mu < 1 \quad (2)$$

Using equations (1) and (2) we can write:

$$Y_1 + Y_2 + \dots + Y_n = \mu \cdot YY \quad (3)$$

We can further write this as:

$$\frac{1}{\sum Y_j} [Y_1 + Y_2 + \dots + Y_n] = w_1 + w_2 + \dots + w_n = \sum_{j=1}^n w_j = 1 \quad (4)$$

Where $w_j = \frac{Y_j}{\sum Y_j}$ where j varies from 1 to n

Let each state define its fiscal deficit target relative to GSDP as percentage of its own GSDP. Then,

$$f_j^* = F_j^* / Y_j \quad (5)$$

Where the magnitude of fiscal deficit of state j consistent with its target is given by F_j^* .

The aggregate magnitude of fiscal deficit target considering all states together, F_s^* , would be given by:

$$F_s^* = F_1^* + F_2^* + \dots + F_n^* \quad (6)$$

Substituting F_j^* by $f_j^* Y_j$, we can write

$$F_s^* = f_1^* \cdot Y_1 + f_2^* \cdot Y_2 + \dots + f_n^* \cdot Y_n \quad (7)$$

Dividing equation (7) by $\sum_{j=1}^n Y_j$ we get

$$\frac{F_s^*}{\sum_{j=1}^n Y_j} = f_1^* \cdot \frac{Y_1}{\sum_{j=1}^n Y_j} + f_2^* \cdot \frac{Y_2}{\sum_{j=1}^n Y_j} + \dots + f_n^* \cdot \frac{Y_n}{\sum_{j=1}^n Y_j} \quad (8)$$

$$\frac{F_s^*}{\sum_{j=1}^n Y_j} = f_s^* = w_1 \cdot f_1^* + w_2 \cdot f_2^* + \dots + w_n \cdot f_n^* = \sum_{j=1}^n w_j \cdot f_j^* \quad (9)$$

Also,

$$F_s^* = w_1 \cdot F_1^* + w_2 \cdot F_2^* + \dots + w_n \cdot F_n^* = \sum_{j=1}^n w_j \cdot F_j^* \quad (10)$$

Assuming the target fiscal deficit to GSDP ratio 'k' to be uniform across states (for example $k=0.03$)

$$F_j^* = k \cdot Y_j \quad (11)$$

The weighted sum of individual fiscal deficit targets in equation (9) would not add to the macro condition of 'k' (0.03) times the GDP (YY). To ensure this macro consistency we have to uplift each of the fiscal deficit targets by $\frac{1}{\mu}$ (using equations (3) and (5)). The modified sustainable fiscal deficit of each state written as f_j^{**} would be equal to $\frac{f_j^*}{\mu}$.

Thus, using equation (10) we may also write,

$$F_j^{**} = w_j \cdot \frac{1}{\mu} \cdot F_s^* \quad (12)$$

Therefore, the fiscal deficit to GSDP ratio using GSDP can be written as:

$$f_j^{**} = \frac{w_j \cdot \frac{1}{\mu} \cdot F_s^*}{Y_j} \quad (13)$$

Where,

$$Y_j = w_j \cdot \sum_{j=1}^n Y_j \quad (14)$$

Substituting equation (14) in equation (13)

$$f_j^{**} = \frac{w_j \cdot \frac{1}{\mu} \cdot F_s^*}{w_j \cdot \sum_{j=1}^n Y_j} = \frac{\frac{F_s^*}{\mu}}{\sum_{j=1}^n Y_j} \quad (15)$$

$$f_j^{**} = \frac{1}{\mu} \cdot \frac{F_s^*}{\sum_{j=1}^n Y_j} = \frac{1}{\mu} \cdot f_s^* = f_s^{**} \quad (16)$$

Thus, the magnitude of the modified fiscal deficit would be a function of the share of a state's GSDP in all state GSDP (w_j) multiplied by the linking factor ($\frac{1}{\mu}$) relating sum of GSDP to GDP. On the other hand, the modified target fiscal deficit to GSDP ratio would be linked to the original target fiscal deficit to GSDP ratio only by the factor ($\frac{1}{\mu}$) which is common across states.

The value of μ historically has been in the range of 0.85 onwards although presently (2011-12 series) it is close to 0.99. In order to maintain consistency with the macro framework, therefore, each state would be entitled to increase its target fiscal deficit to GSDP ratio from say k to k/μ . If k is 3.0% and $\mu = 0.85$, states may increase their fiscal deficit to GSDP ratio targets to about 3.53%.

It is possible to argue that since the sum of GSDPs falls short of GDP because of components of GDP that belong to the centre such as the GSDP of the UTs or value added created on the high seas, the additional borrowing due to difference between GDP and sum of GSDPs should be given to the centre. In case we retain the additionality of borrowing only for the states, in terms of the rule proposed above, it raises the sustainable level of borrowing for individual states in terms of magnitude in proportion to the share of their individual GSDP in all state GSDP. This rule may also be changed according to the circumstances of the individual states (for example one state faces a natural calamity) but such nuanced decisions should only be taken by a neutral body like the Loan Council proposed by FC12 or Fiscal Council proposed by FRBM Review Committee 2017.

(b) Targets are defined in terms of interest payment to revenue receipts ratio

In the discussion for deriving sustainability conditions, Srivastava et. al. (2025a, 2025b) and Srivastava (2027), six inter-related sustainability conditions are defined which facilitate defining sustainability in terms of alternative fiscal aggregates. It is shown that such sustainability conditions can be defined in equivalent ways in terms of fiscal deficit, or primary deficit or interest payment relative to GDP/GSDP, or interest payments relative to revenue receipts along with the ratio of revenue receipts to GDP/GSDP. Using the following relationship from Srivastava et. al. (2025b), we can write an individual state's

target fiscal deficit (f_j^*) as follows:

$$f_j^* = ipr^* \cdot rr_j \cdot g_j / i_j \quad (17)$$

Where,

f_j^* : sustainable level of fiscal deficit relative to GSDP for state j

g_j : nominal GSDP growth of state j

i_j : effective nominal interest rate of state j

rr_j : revenue receipts relative to GSDP of state j = $\frac{R_j}{Y_j}$ where R_j is revenue receipts of state j

ipr^* : sustainable level of interest payments relative to revenue receipts and assumed common for all states

ip_j^* : sustainable level of interest payments relative to GSDP for state j

where $ip_j^* = ipr^* \cdot rr_j$

IP_j^* : magnitude of interest payments consistent with sustainability defined in terms of ip_j^* or ipr^*

Summing over j = 1 to n and defining $\frac{g_j}{i_j} = G_j$

The sustainable magnitude of fiscal deficit of the jth state can be written as:

$$F_j^* = f_j^* \cdot Y_j = ipr^* \cdot rr_j \left(\frac{g_j}{i_j} \right) \cdot Y_j \quad (18)$$

$$F_j^* = ipr^* \cdot \frac{R_j}{Y_j} \cdot G_j \cdot Y_j = ipr^* \cdot R_j \cdot G_j \quad (19)$$

$$\sum F_j^* = \sum (f_j^* \cdot Y_j) = ipr^* \cdot \sum (R_j \cdot G_j) \quad (20)$$

Dividing both sides by $\sum Y_j$

$$\frac{\sum (f_j^* \cdot Y_j)}{\sum Y_j} = ipr^* \cdot \frac{\sum R_j \cdot G_j}{\sum Y_j} \quad (21)$$

$$f_a^* = ipr^* \cdot \frac{\sum R_j \cdot G_j}{\sum Y_j} \quad (22)$$

Here, LHS of equation (22) gives the average sustainable level of fiscal deficit relative to the sum of all states GSDP as f_a^* which is a weighted average of individual state fiscal deficits with weights given by the share of a state in all state GSDP.

From equation (22), we have also derived the sustainable level of interest payment to revenue receipts with respect to average of all states, that is,

$$ipr^* = f_a^* \cdot \frac{\sum Y_j}{\sum R_j \cdot G_j} \quad (23)$$

If we use $\mu \cdot YY = \sum Y_j$ where $\mu < 1$

$$ipr^* = f_a^* \cdot \frac{\mu \cdot YY}{\sum R_j \cdot G_j} \quad (24)$$

Here ipr^* is considered common across all states and defined in the case when we use GSDPs of individual states. An ipr^{**} for all states when we use GDP can be written as:

$$ipr^{**} = \frac{ipr^*}{\mu} = f_a^* \cdot \frac{YY}{\sum R_j \cdot G_j} \quad (25)$$

From Srivastava et. al. (2025b), we can write:

$$\frac{f_j^*}{f^*} = \left[\frac{f_a^*}{f^*} \right] \cdot \left[\frac{i_a \cdot r_j \cdot g_j}{i_j \cdot r_a \cdot g_a} \right] \quad (26)$$

Where f^* is the common fiscal deficit to GSDP benchmark

Here the interest payment to revenue receipts ratio is defined as a common value for all states with respect to GDP as distinct from the sum of GSDPs of all states. It is for this value that the FC12 had prescribed a value of ipr^{**} at 15% (Para 4.79 (c) of FC12 report) which could have been incorporated in state level Fiscal Responsibility Legislations³.

Equation (26) indicates that a state j can have a sustainable level of fiscal deficit f_j^* which is higher than average state fiscal deficit (f_a^*) if it has a lower effective interest rate, higher revenue receipts to GSDP ratio or higher nominal GSDP growth rate relative to the average for all states. Further, f_a^* can be replaced by f_a^{**} if the all-state average target fiscal deficit is defined with respect to GDP rather than GSDP where

3. In order to ensure that $f_a^* = 0.03$, using FC12 values for the term on the RHS ipr^* will be 11.2%. However, the value of ipr^* increases to 15.2% for the FC14 period and to 15.4% for FC15 period considering the 3% of GDP as the benchmark fiscal deficit.

$$f_a^{**} = \frac{f_a^*}{\mu} \quad (27)$$

4. Option of mixed choices of fiscal deficit norms

In both the above cases, we have considered examples where all states choose either the fiscal deficit to GSDP ratio norm (f^* option) or the interest payment to revenue receipts norm (ipr^* option) uniformly. However, in practice *some states may choose one set of norms based on fiscal deficit to GSDP ratio and other states may choose the latter set of norms based on interest payments to revenue receipts ratio.* We can then setup the following rule:

- (a) A state chooses the fiscal deficit to GSDP ratio norm for its fiscal deficit target if the IP/RR norm gives a lower than 3% fiscal deficit to GSDP target.
- (b) A state chooses the IP/RR norm for its fiscal deficit target if it gives a higher than 3% fiscal deficit to GSDP target.

With these two rules, the sum of the target fiscal deficits of individual states would add to a level that is higher than the 3% of GDP aggregate fiscal deficit target. For ensuring that the aggregate state level fiscal deficit relative to GDP conforms to the saving-investment consistent sustainable target such as 3% fiscal deficit relative to GDP, a recalibration of the individual state fiscal deficit to GSDP targets would be required. This can be formalised as follows.

Consider two groups of states, A and B where A consists of states denoted by $j=1, \dots, k$ and B is a group of states denoted by $j=k+1, \dots, n$.

The A group states have all opted for a fiscal deficit equal to 3% of their respective GSDPs. This is so because in each of their cases, the ipr^* rule would have given them a target fiscal deficit lower than 3% of GSDP. On the other hand, the B group states all opt for the ipr^* rule which gives them a fiscal deficit to GSDP target higher than 3%. As argued earlier, this could be because of their growth rate being higher, interest rate being lower or revenue receipts to GSDP ratio being higher than the average of all states. Holding interest rate and growth rate as equal amongst the states, we consider illustratively the main driver for this as the revenue receipts to GSDP ratio where revenue receipts pertain to what accrues to them after fiscal transfers. To illustrate how the ipr^* rule may give them a fiscal deficit target higher than the 3%, we may consider the following.

Interest payment to GSDP ratio consistent with the sustainable level of debt relative to GDP (b^*) can be derived as:

$$ip_j^* = i_j \cdot b_j^* \quad (28)$$

b_j^* can also be written as (see Srivastava et. al. (2025b)):

$$b_j^* = f_j^* \cdot \frac{(1+g_j)}{g_j} \quad (29)$$

Substituting b_j^* from equation (29) in equation (28) we can write

$$ip_j^* = i_j \cdot f_j^* \cdot \frac{(1+g_j)}{g_j} \quad (30)$$

$$\frac{ip_j^*}{Y_j} = i_j \cdot f_j^* \cdot \frac{(1+g_j)}{g_j} \quad (31)$$

Dividing both sides by $\frac{RR_j}{Y_j}$, we get

$$ipr_j^* = i_j \cdot f_j^* \cdot \frac{(1+g_j)}{g_j} \cdot \frac{Y_j}{RR_j} \quad (32)$$

$$ipr_j^* = i_j \cdot f_j^* \cdot \frac{(1+g_j)}{g_j} \cdot \frac{1}{rr_j} \quad (33)$$

$$f_j^* = ipr_j^* \cdot rr_j \cdot \frac{g_j}{i_j} \cdot \frac{1}{(1+g_j)} \quad (34)$$

$$f_j^* = ipr_j^* \cdot rr_j \cdot G_j \cdot \frac{1}{(1+g_j)} \quad (35)$$

Correspondingly for the average state we have,

$$f_a^* = ipr_a^* \cdot rr_a \cdot G_a \cdot \frac{1}{(1+g_a)} \quad (36)$$

For illustration assume that interest rate and growth rate are equal for the j th state and the average of all states. Then dividing equation (35) by equation (36) we have

$$\frac{f_j^*}{f_a^*} = \frac{ipr_j^* \cdot rr_j}{ipr_a^* \cdot rr_a} \quad (37)$$

When we ask states to have the ipr^* as the target which is equal across states, we have

$$\frac{ipr_j^*}{ipr_a^*} = 1$$

Thus, equation (37) reduces to

$$\frac{f_j^*}{f_a^*} = \frac{rr_j}{rr_a} \quad (38)$$

This implies that given growth rates and interest rates, a state j can have a higher fiscal deficit to GSDP target as compared to the average state ($f_j^* > f_a^*$) if $rr_j > rr_a$. This is also illustrated in the following table with the given parameters.

Table 1: Simulated values of sustainable level of fiscal deficit relative to GSDP for alternative parameter values

<i>Simulation</i>	rr_a	i_a	g_a	$G_a = g_a/i_a$	ipr_a^*	f_a^*
(1)	0.125	0.067	0.12	1.79	0.150	0.0300
(2)	0.130	0.067	0.12	1.79	0.150	0.0312
(3)	0.150	0.067	0.12	1.79	0.150	0.0360

Source: Authors' estimates

In Table 1, row (1) shows a combination of growth and interest rate which leads to a fiscal deficit to GSDP target of 3%. It is shown in simulations (2) and (3) that as the revenue receipts to GSDP ratio is increased, the fiscal deficit to GSDP target can be set at levels higher than 3% of GSDP. This will also be the case when for the j th state, the interest rate is lower or the nominal growth is higher than the corresponding levels of the average state. Thus, it is quite feasible that some states may opt for the ipr^* rule and thereby have a target fiscal deficit which is higher than 3% of GSDP. If this happens, the question is as to how to ensure macro-consistency so that for the aggregate of states fiscal deficit remains 3.0% of GDP. For this, as we considered earlier, we divide the states into two groups. For group A, the aggregate target fiscal deficit is the sum of their individual fiscal deficits which in each case is 3.0% of their respective GSDPs. Thus, the aggregate target fiscal deficits for group A is

$$f_A^* = \frac{0.03 \sum_{j=1}^k Y_j}{\sum_{j=1}^k Y_j} = 0.03 \quad (39)$$

Similarly,

$$f_B^* = \frac{1}{\sum_{j=k+1}^n Y_j} [\sum_{j=k+1}^n f_j^* \cdot Y_j] \text{ where } f_j^* \text{ for group B states are all higher than } 0.03 \quad (40)$$

Thus, the aggregate fiscal deficit for all states is the weighted average fiscal deficit of the two groups of states.

$$f_a^* = \frac{1}{\sum_{i=1}^n Y_i} 0.03 (\sum_{j=1}^k Y_j) + \left[\frac{1}{\sum_{i=1}^n Y_i} \sum_{j=k+1}^n f_j^* \cdot Y_j \right] \quad (41)$$

$$f_a^* = \frac{1}{\sum_{j=1}^n Y_j} [0.03 \sum_{j=1}^k Y_j + \sum_{j=k+1}^n f_j^* \cdot Y_j] \quad (42)$$

This can also be written in terms of GDP (YY) by multiplying and dividing by YY. The linking factor is $(1/\mu)$. Thus, using equation (2) and (42) we have,

$$f_a^* = \frac{1}{\mu \cdot YY} [0.03 \sum_{j=1}^k Y_j + \sum_{j=k+1}^n f_j^* \cdot Y_j] \quad (43)$$

It is likely that the weighted sum of f_A^* and f_B^* adds to a value higher than 0.03. In this case all the individual target fiscal deficits will have to be reduced by a factor λ , to ensure that the weighted sum of f_A^* and f_B^* is equal to 1. Thus, the new target fiscal deficits for jth state would be its new target value multiplied by λ where $\lambda < 1$. λ is given by the following relation:

$$\lambda \cdot \frac{1}{\mu \cdot YY} [0.03 \sum_{j=1}^k Y_j + \sum_{j=k+1}^n f_j^* \cdot Y_j] = 0.03 \quad (44)$$

Thus, for the jth state we can write the modified fiscal deficit to GSDP target which ensures consistency with the macro conditions in the mixed option case as:

$$f_j^{**} = \frac{\lambda}{\mu} f_j^* \quad (45)$$

In the next section, we give observations as to how such a fiscal architecture can be implemented in practice through an institutional arrangement such as the Loan Council proposed by FC12 or a Fiscal Council as recommended by FRBM Review Committee 2017.

In the tables below, we illustrate the relevant state-specific fiscal deficit targets based on parameter values for FC12, FC13, FC14 and the first three years of FC15 periods. In each case, effective interest rate, revenue receipts to GSDP ratios and the nominal GSDP growth rates are the relevant state specific parameters. These are shown for FC12 in Table 2 [columns (2), (3) and (4)]. Column (5) gives the actual interest payment to revenue receipts ratio for each state. The relevant sustainable value of this parameter is given as a memo item. There are four alternate values of fiscal deficit to GSDP ratio that are given in columns (6) to (9). f^* indicates the sustainable level of fiscal deficit relative to GSDP for each state if it follows the ipr^* rule by setting it equal to 11.2% for the FC12 period. This number is derived using equation (23). It will be noted that many states have a value of f^* which is higher than 3%. However, the sum

of individual states' f^* 's would add to 3% of the sum of all-state GSDP. This is ensured by the rule by which the common value of ipr^* is derived as given in equation (23). All state-level sustainable f^* values derived through this rule are scaled up by $1/\mu = 1.116$ for the FC12 period. These scaled up values are referred to as 'adjusted f^* ' (corresponding to ipr^{**}) as given in column (7). The weighted sum of these adjusted f^* 's divided by GDP would add to 3% because of the scaling up. This is shown in the row for 'all-states' under column (7).

We now consider a case when the states have the option of choosing their target f^* 's by following either the ipr^* rule or the 3% of GSDP rule. We presume that each state chooses the higher of the two values in terms of the fiscal deficit to GSDP ratio. In other words, if adjusted f^* is higher than 3%, the state chooses that, otherwise 3%. The sum of these individual target f^* 's as shown in column (8) would be higher than 3% relative to GDP. It is shown to be 3.3%. Thus, each state's target fiscal deficit to GSDP ratio is scaled downwards by the ratio of 0.030/0.033 in order to ensure that the finally decided target values of f^* shown as adjusted f^{**} in column (9) add to 3% of GDP. This is shown in the 'all-states' row of column (9). The row of 'ML group' and 'SH group' show the sum of the relevant target f^* 's as percentage of the sum of the respective group's GSDP. In all cases, the ML group target is lower than the SH group target. It can be observed that the inter-state variation of target f^* is higher in column (7) as compared to that in column (9).

Table 2: Derivation of macro consistent state differentiated sustainable fiscal deficit to GSDP levels: FC12

<i>States</i>	<i>i</i>	<i>r</i>	<i>g</i>	<i>ip</i>	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule in the mixed option case	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
AP	0.085	0.234	0.152	0.176	0.047	0.052	0.052	0.048
AS	0.082	0.183	0.124	0.113	0.031	0.035	0.035	0.032
BH	0.074	0.222	0.159	0.164	0.054	0.060	0.060	0.055
CH	0.077	0.150	0.157	0.102	0.034	0.038	0.038	0.035
GJ	0.082	0.102	0.162	0.236	0.023	0.025	0.030	0.028
HR	0.082	0.123	0.185	0.145	0.031	0.035	0.035	0.032
JH	0.080	0.131	0.110	0.115	0.020	0.023	0.030	0.028
KA	0.081	0.116	0.151	0.119	0.024	0.027	0.030	0.028

<i>States</i>	<i>i</i>	<i>r</i>	<i>g</i>	<i>ip</i>	<i>f</i> [*] (as % of GSDP)	<i>Adj. f</i> [*] (as % of GSDP)	<i>f</i> [*] under chosen rule in the mixed option case	<i>Adj. f</i> ^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
KL	0.083	0.100	0.142	0.228	0.019	0.021	0.030	0.028
MH	0.076	0.097	0.155	0.181	0.022	0.024	0.030	0.028
MP	0.078	0.170	0.150	0.154	0.037	0.041	0.041	0.038
OD	0.078	0.159	0.160	0.196	0.036	0.041	0.041	0.037
PB	0.084	0.130	0.153	0.245	0.027	0.030	0.030	0.028
RJ	0.083	0.141	0.158	0.229	0.030	0.033	0.033	0.031
TN	0.083	0.118	0.170	0.134	0.027	0.030	0.030	0.028
TS	--	--	--	--	--	--	--	--
UP	0.065	0.158	0.149	0.199	0.041	0.045	0.045	0.042
WB	0.093	0.103	0.138	0.404	0.017	0.019	0.030	0.028
ML group	0.080	0.131	0.154	0.188	0.029	0.032	0.035	0.032
AR	0.067	0.556	0.165	0.072	0.154	0.171	0.171	0.158
GA	0.082	0.151	0.180	0.164	0.037	0.042	0.042	0.038
HP	0.094	0.212	0.149	0.239	0.037	0.042	0.042	0.038
JK	0.081	0.323	0.121	0.116	0.054	0.060	0.060	0.056
ML	0.071	0.210	0.141	0.094	0.047	0.052	0.052	0.048
MN	0.070	0.389	0.100	0.104	0.062	0.069	0.069	0.063
MZ	0.063	0.537	0.144	0.107	0.137	0.153	0.153	0.141
NL	0.090	0.404	0.125	0.106	0.063	0.070	0.070	0.065
SK	0.084	0.791	0.287	0.051	0.300	0.335	0.335	0.308
TR	0.082	0.315	0.116	0.116	0.050	0.056	0.056	0.051
UK	0.080	0.149	0.233	0.151	0.048	0.054	0.054	0.050
SH group	0.082	0.258	0.164	0.134	0.056	0.063	0.063	0.058
All States	0.080	0.137	0.154	0.183	0.030	0.030[#]	0.033[#]	0.030[#]
Memo items								
<i>ipr</i> ^{**}				0.112				
Benchmark f				0.030				
GDP/GSDP ratio (1/μ)				1.116				
Benchmark f/adjusted f_a^* ratio				0.922				

Source (Basic data): RBI and MoSPI; [#] measured as % to GDP

Table 3 shows corresponding values for the FC13 period. In this case, the value of ipr^* was set at 11.5% and the $\frac{1}{\mu} = 1.108$. The ML target fiscal deficit relative to GSDP (Adj. f^{**}) is approximately the same as that for the FC12 period. However, the SH group target fiscal deficit at 5.5% of GSDP is marginally lower than that for FC12 period at 5.8%. Individual state specific values under adjusted f^{**} also differs across states. For example, for Andhra Pradesh, the adjusted f^{**} target at 5.0% in the FC13 period is higher than 4.8% as in the case of FC12 period.

Table 3: Derivation of macro consistent state differentiated sustainable fiscal deficit to GSDP levels: FC13

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
AP	0.071	0.241	0.129	0.120	0.050	0.056	0.056	0.050
AS	0.076	0.186	0.124	0.078	0.035	0.039	0.039	0.035
BH	0.069	0.213	0.157	0.088	0.056	0.062	0.062	0.055
CH	0.067	0.165	0.152	0.048	0.043	0.048	0.048	0.043
GJ	0.079	0.099	0.158	0.178	0.023	0.025	0.030	0.027
HR	0.085	0.098	0.144	0.137	0.019	0.021	0.030	0.027
JH	0.078	0.150	0.143	0.104	0.032	0.035	0.035	0.032
KA	0.067	0.111	0.153	0.093	0.029	0.032	0.032	0.029
KL	0.076	0.103	0.137	0.177	0.021	0.024	0.030	0.027
MH	0.077	0.094	0.137	0.146	0.019	0.021	0.030	0.027
MP	0.072	0.184	0.153	0.091	0.045	0.050	0.050	0.045
OD	0.059	0.165	0.130	0.079	0.042	0.046	0.046	0.041
PB	0.084	0.107	0.116	0.220	0.017	0.019	0.030	0.027
RJ	0.079	0.132	0.171	0.147	0.033	0.036	0.036	0.033
TN	0.079	0.110	0.147	0.111	0.024	0.026	0.030	0.027
TS	--	--	--	--	--	--		
UP	0.070	0.177	0.128	0.118	0.038	0.042	0.042	0.037
WB	0.083	0.107	0.128	0.293	0.019	0.021	0.030	0.027
ML group	0.076	0.131	0.142	0.132	0.029	0.029	0.036	0.032
AR	0.085	0.500	0.185	0.056	0.126	0.140	0.140	0.125
GA	0.077	0.156	0.109	0.132	0.025	0.028	0.030	0.027
HP	0.083	0.189	0.140	0.160	0.037	0.041	0.041	0.036

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
JK	0.075	0.317	0.121	0.103	0.059	0.065	0.065	0.058
ML	0.064	0.249	0.096	0.061	0.043	0.047	0.047	0.042
MN	0.066	0.459	0.135	0.069	0.109	0.121	0.121	0.108
MZ	0.057	0.519	0.195	0.070	0.205	0.227	0.227	0.204
NL	0.068	0.435	0.147	0.080	0.108	0.120	0.120	0.107
SK	0.073	0.340	0.149	0.052	0.080	0.088	0.088	0.079
TR	0.080	0.328	0.148	0.078	0.070	0.078	0.078	0.070
UK	0.080	0.117	0.141	0.130	0.024	0.026	0.030	0.027
SH group	0.076	0.235	0.135	0.103	0.050	0.050	0.057	0.055
All States	0.076	0.136	0.141	0.130	0.030	0.027[#]	0.033[#]	0.030[#]
Memo items								
ipr^{**}				0.115				
Benchmark f				0.030				
GDP/GSDP ratio ($1/\mu$)				1.108				
Benchmark f /adjusted f_a^* ratio				0.898				

Source (Basic data): RBI and MoSPI; [#] - measured as % to GDP

Table 4 shows corresponding values for the FC14 period. In this case, the value of ipr^{**} was set at 15.2%. The value of $1/\mu = 1.047$. The ML target fiscal deficit is lower at 3% of GSDP as compared to 3.2% for FC13 period. Similarly, for the SH group the target fiscal deficit at 5.3% relative to GSDP is lower than that at 5.5% in FC13 period. Individual state specific values under adjusted f^{**} also differ across states. For example, for Andhra Pradesh, the adjusted f^{**} target at 3.5% in the FC14 period is lower than 5.0% in the FC13 period.

Table 4: Derivation of macro consistent state differentiated sustainable fiscal deficit to GSDP levels: FC14

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
AP	0.070	0.146	0.120	0.121	0.038	0.040	0.040	0.035
AS	0.074	0.194	0.121	0.061	0.048	0.051	0.051	0.044

<i>States</i>	<i>i</i>	<i>r</i>	<i>g</i>	<i>ip</i>	<i>f</i> [*] (as % of GSDP)	<i>Adj. f</i> [*] (as % of GSDP)	<i>f</i> [*] under chosen rule	<i>Adj. f</i> ^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BH	0.067	0.248	0.112	0.077	0.062	0.065	0.065	0.057
CH	0.069	0.198	0.093	0.050	0.040	0.042	0.042	0.037
GJ	0.077	0.095	0.119	0.159	0.022	0.023	0.030	0.026
HR	0.084	0.095	0.110	0.188	0.019	0.020	0.030	0.026
JH	0.068	0.184	0.073	0.087	0.030	0.031	0.031	0.027
KA	0.065	0.112	0.121	0.092	0.031	0.033	0.033	0.029
KL	0.077	0.118	0.097	0.170	0.022	0.023	0.030	0.026
MH	0.080	0.099	0.084	0.136	0.016	0.016	0.030	0.026
MP	0.072	0.187	0.141	0.079	0.055	0.058	0.058	0.050
OD	0.062	0.195	0.113	0.054	0.054	0.056	0.056	0.049
PB	0.085	0.113	0.086	0.252	0.017	0.018	0.030	0.026
RJ	0.079	0.149	0.102	0.142	0.029	0.030	0.030	0.026
TN	0.089	0.108	0.102	0.149	0.019	0.020	0.030	0.026
TS	0.097	0.119	0.134	0.110	0.025	0.026	0.030	0.026
UP	0.065	0.198	0.109	0.100	0.051	0.053	0.053	0.046
WB	0.081	0.132	0.104	0.218	0.026	0.027	0.030	0.026
ML Total	0.076	0.135	0.107	0.124	0.030	0.029	0.035	0.030
AR	0.074	0.585	0.108	0.036	0.130	0.137	0.137	0.119
GA	0.073	0.157	0.094	0.121	0.031	0.032	0.032	0.028
HP	0.080	0.198	0.089	0.138	0.034	0.035	0.035	0.030
JK	0.077	0.321	0.108	0.107	0.068	0.071	0.071	0.062
ML	0.066	0.300	0.084	0.064	0.057	0.060	0.060	0.052
MN	0.065	0.416	0.105	0.058	0.102	0.107	0.107	0.093
MZ	0.049	0.427	0.131	0.047	0.173	0.181	0.181	0.157
NL	0.072	0.429	0.101	0.068	0.091	0.095	0.095	0.083
SK	0.075	0.226	0.153	0.067	0.070	0.074	0.074	0.064
TR	0.076	0.258	0.129	0.081	0.066	0.070	0.070	0.060
UK	0.086	0.126	0.082	0.140	0.018	0.019	0.030	0.026
SH Total	0.077	0.237	0.098	0.099	0.050	0.050	0.056	0.053
All States	0.076	0.140	0.107	0.122	0.031	0.029[‡]	0.035[‡]	0.030[‡]

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Memo items								
ipr^{**}				0.152				
Benchmark f				0.030				
GDP/GSDP ratio ($1/\mu$)				1.047				
Benchmark f /adjusted f_a^* ratio				0.868				

Source (Basic data): RBI and MoSPI; $^{\#}$ - measured as % to GDP

With reference to the FC15 period we have considered two cases. In Case 1, the all-state fiscal deficit target with respect to GDP is retained at 3%. In case 2, this was increased due to Covid-19 by a certain factor as discussed later.

Table 5 gives the corresponding values for Case 1 of the FC15 period. In this case, the value of ipr^{**} was set at 15.4% and the value of $1/\mu$ at 1.040. The ML group's target fiscal deficit is marginally higher at 3.1% of GSDP during FC15 period when compared to 3% for FC14 period. On the contrary, for the SH group, the target fiscal deficit relative to GSDP at 4.6% is lower as compared to 5.3% in FC14 period. Individual state specific values under adjusted f^{**} also differ across states. For example, for Andhra Pradesh, the adjusted f^{**} target was lower at 3.3% in FC15 period as compared to 3.5% in the FC14 period.

Table 5: Derivation of macro consistent state differentiated sustainable fiscal deficit to GSDP levels: FC15 (Case 1)

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
AP	0.065	0.124	0.121	0.159	0.036	0.037	0.037	0.033
AS	0.071	0.193	0.124	0.074	0.052	0.055	0.055	0.049
BH	0.063	0.228	0.089	0.091	0.050	0.052	0.052	0.046
CH	0.065	0.186	0.104	0.081	0.046	0.048	0.048	0.043
GJ	0.070	0.085	0.113	0.166	0.021	0.022	0.030	0.027
HR	0.076	0.091	0.101	0.239	0.019	0.019	0.030	0.027
JH	0.059	0.191	0.083	0.095	0.041	0.043	0.043	0.038
KA	0.061	0.101	0.120	0.124	0.031	0.032	0.032	0.029
KL	0.074	0.121	0.088	0.209	0.022	0.023	0.030	0.027

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MH	0.075	0.105	0.099	0.125	0.021	0.022	0.030	0.027
MP	0.067	0.161	0.103	0.101	0.038	0.040	0.040	0.036
OD	0.047	0.204	0.119	0.055	0.080	0.083	0.083	0.074
PB	0.074	0.123	0.080	0.264	0.020	0.021	0.030	0.027
RJ	0.069	0.142	0.110	0.170	0.035	0.036	0.036	0.033
TN	0.074	0.099	0.107	0.198	0.022	0.023	0.030	0.027
TS	0.068	0.109	0.112	0.152	0.028	0.029	0.030	0.027
UP	0.070	0.194	0.099	0.112	0.042	0.044	0.044	0.040
WB	0.074	0.128	0.091	0.218	0.024	0.025	0.030	0.027
ML Total	0.069	0.130	0.105	0.142	0.031	0.029	0.034	0.031
AR	0.058	0.556	0.097	0.041	0.144	0.150	0.150	0.135
GA	0.066	0.158	0.077	0.128	0.028	0.030	0.030	0.027
HP	0.068	0.210	0.064	0.132	0.030	0.032	0.032	0.028
JK	--	--	--	--	--	--	--	--
ML	0.065	0.318	0.071	0.076	0.053	0.055	0.055	0.050
MN	0.061	0.393	0.075	0.058	0.075	0.078	0.078	0.070
MZ	0.047	0.346	0.095	0.046	0.109	0.113	0.113	0.101
NL	0.062	0.400	0.062	0.072	0.062	0.065	0.065	0.058
SK	0.066	0.171	0.108	0.098	0.043	0.045	0.045	0.040
TR	0.067	0.244	0.103	0.093	0.058	0.060	0.060	0.054
UK	0.071	0.153	0.083	0.129	0.028	0.029	0.030	0.027
SH Total	0.066	0.227	0.080	0.098	0.044	0.044	0.046	0.046
All States	0.069	0.133	0.104	0.140	0.031	0.029[#]	0.033[#]	0.030[#]
Memo items								
ipr^{**}				0.154				
Benchmark f				0.030				
GDP/GSDP ratio ($1/\mu$)				1.040				
Benchmark f/adjusted f_a^* ratio				0.897				

Source (Basic data): RBI and MoSPI; [#] - measured as % to GDP

Table 6 shows the corresponding values for Case 2 of the FC15 period. In the FC15 period due to the presence of covid, the state governments were also asked to play a role in supporting aggregate demand by allowing them a higher fiscal deficit target under certain conditions. This has implied that for

the FC15 period (Case 2) the target state level fiscal deficit could be increased from 3% to 4.17%⁴. In this case, the value of ipr^{**} was set at 21.5% and the value of $1/\mu$ at 1.040. The ML group's target fiscal deficit relative to GSDP is therefore higher at 4.3% under FC15 (Case 2) as compared to 3.0% for the FC14 period. For the SH group, the target fiscal deficit increases to 6.4% in FC15 (Case 2) period as compared to 5.3% in FC14 period. Individual state specific values under adjusted f^{**} also differs across states. For example, for Andhra Pradesh, the adjusted f^{**} target is higher at 4.6% as compared to 3.5% in the FC14 period.

Table 6: Derivation of macro consistent state differentiated sustainable fiscal deficit to GSDP levels: FC15 (Case 2)

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
AP	0.065	0.124	0.121	0.159	0.049	0.051	0.051	0.046
AS	0.071	0.193	0.124	0.074	0.073	0.076	0.076	0.068
BH	0.063	0.228	0.089	0.091	0.069	0.072	0.072	0.065
CH	0.065	0.186	0.104	0.081	0.064	0.067	0.067	0.060
GJ	0.070	0.085	0.113	0.166	0.030	0.031	0.042	0.037
HR	0.076	0.091	0.101	0.239	0.026	0.027	0.042	0.037
JH	0.059	0.191	0.083	0.095	0.057	0.059	0.059	0.053
KA	0.061	0.101	0.120	0.124	0.043	0.045	0.045	0.040
KL	0.074	0.121	0.088	0.209	0.031	0.032	0.042	0.037
MH	0.075	0.105	0.099	0.125	0.030	0.031	0.042	0.037
MP	0.067	0.161	0.103	0.101	0.053	0.055	0.055	0.050
OD	0.047	0.204	0.119	0.055	0.111	0.115	0.115	0.103
PB	0.074	0.123	0.080	0.264	0.028	0.029	0.042	0.037
RJ	0.069	0.142	0.110	0.170	0.049	0.051	0.051	0.045
TN	0.074	0.099	0.107	0.198	0.031	0.032	0.042	0.037
TS	0.068	0.109	0.112	0.152	0.039	0.040	0.042	0.037
UP	0.070	0.194	0.099	0.112	0.059	0.061	0.061	0.055
WB	0.074	0.128	0.091	0.218	0.034	0.035	0.042	0.037

4. It may be noted that the states were given the flexibility for additional borrowing up to 2% of GSDP for 2020-21, 1% of GSDP in 2021-22, and 0.5% of GSDP for 2022-23. For the three years covered by FC15 numbers given here, the average permitted fiscal deficit for states would be 3% plus 1.17% of GSDP, that is, 4.17% of GSDP. FRBM norm for FC15 is the extended norm based on the total borrowing permitted to states including additional borrowing permitted on account of COVID.

States	i	r	g	ip	f^* (as % of GSDP)	Adj. f^* (as % of GSDP)	f^* under chosen rule	Adj. f^{**}
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ML Total	0.069	0.130	0.105	0.142	0.043	0.041	0.048	0.043
AR	0.058	0.556	0.097	0.041	0.201	0.209	0.209	0.187
GA	0.066	0.158	0.077	0.128	0.039	0.041	0.042	0.037
HP	0.068	0.210	0.064	0.132	0.042	0.044	0.044	0.040
JK	--	--	--	--	--	--	--	--
ML	0.065	0.318	0.071	0.076	0.074	0.077	0.077	0.069
MN	0.061	0.393	0.075	0.058	0.104	0.108	0.108	0.097
MZ	0.047	0.346	0.095	0.046	0.151	0.157	0.157	0.141
NL	0.062	0.400	0.062	0.072	0.087	0.090	0.090	0.081
SK	0.066	0.171	0.108	0.098	0.060	0.062	0.062	0.056
TR	0.067	0.244	0.103	0.093	0.081	0.084	0.084	0.075
UK	0.071	0.153	0.083	0.129	0.038	0.040	0.042	0.037
SH Total	0.066	0.227	0.080	0.098	0.062	0.062	0.065	0.064
All States	0.069	0.133	0.104	0.140	0.044	0.040[#]	0.046[#]	0.042[#]
Memo items								
ipr^{**}				0.215				
Benchmark f				0.0417				
GDP/GSDP ratio				1.040				
Benchmark f /adjusted f_a^* ratio				0.717				

Source (Basic data): RBI and MoSPI; [#] - measured as % to GDP

5. Comparing benchmark fiscal deficit targets with corresponding actuals

In this section, we look at the target state level fiscal deficits that have been determined keeping in mind the state-specific fiscal parameters as well as consistency with the all-state sustainability considerations. All the targets are in terms of differentiated state level sustainable fiscal deficits measured with respect to FC periods which can be compared with the actual fiscal deficit. In both cases, fiscal deficits are measured with respect to the respective GSDPs. Chart 1 shows the excess of actual fiscal deficit over the target fiscal deficit relative to GSDP (Adjusted f^{**}) as percentage of the target fiscal deficit to GSDP ratio. States are arranged in descending order of this percentage deviation. Those states that have a positive value of this deviation are the states that are

not meeting their state specific sustainability targets. Those states that have a negative value and are located farthest to the right are the states that are not only meeting the sustainability criteria but also show fiscal capacity to borrow even more than what they have actually borrowed. In this sense, states that do not meet the sustainability criteria during the FC12 period are: West Bengal, Jharkhand, Gujarat, Jammu and Kashmir, Nagaland, Kerala, Goa, and Rajasthan. As expected, some states in the small and hilly group of states like Tripura, Sikkim, Mizoram and Arunachal Pradesh are the states meeting the sustainability criteria with sufficient margin. Within the ML group of states, we have Chhattisgarh, Odisha and even Bihar in this category.

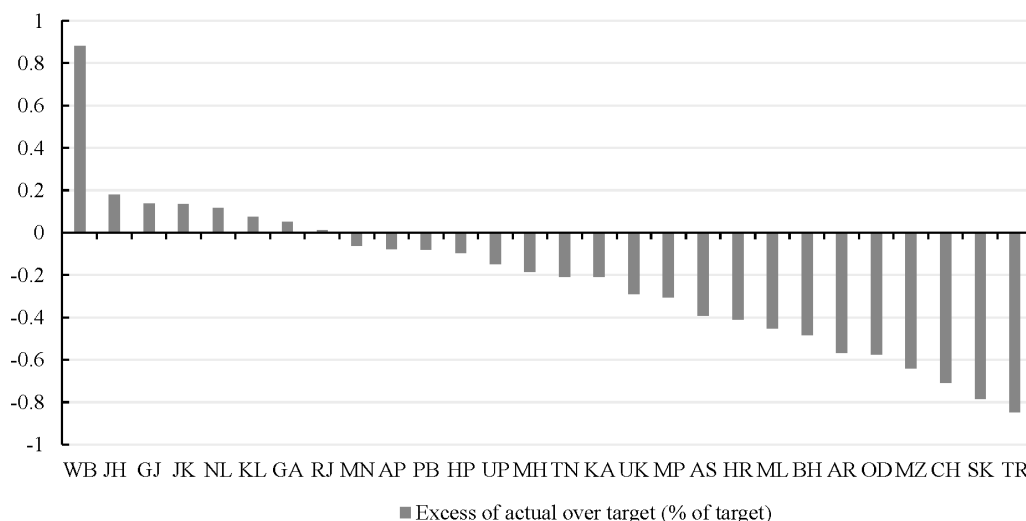


Chart 1: State wise fiscal deficit to GSDP ratio: ranking according to excess of actual over target (adj. f) as % of target (FC12 period)**

Source (Basic data): RBI and MoSPI

For the FC13 period, the states that do not meet the sustainability criteria include West Bengal, Kerala, Goa, Punjab, and Haryana (Chart 2). Among the states that meet fiscal sustainability criteria and also show fiscal strength, Odisha has shown the highest margin in terms of the sustainability framework.

The number of deviant states increased sharply in the FC14 period. Now, the group of states exceeding the benchmark level of fiscal deficit includes Punjab, Rajasthan, Haryana, Telangana, Jharkhand, Andhra Pradesh, Tamil Nadu, Kerala, West Bengal, Uttarakhand, Himachal Pradesh and Chhattisgarh. This has happened in spite of the fact that the FC14 had increased the share of

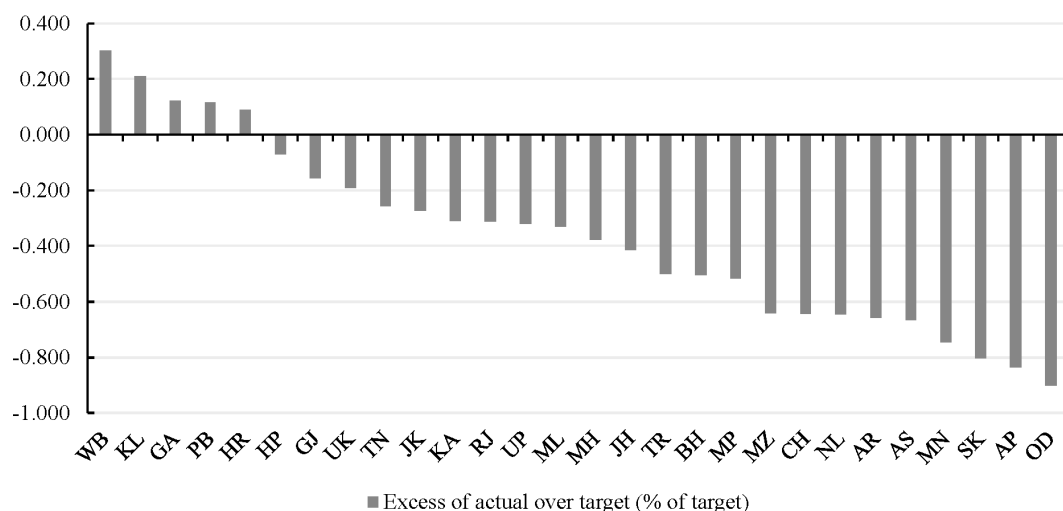


Chart 2: State wise fiscal deficit to GSDP ratio: ranking according to excess of actual over target (adj. f) as % of target (FC13 period)**

Source (Basic data): RBI and MoSPI

states in tax devolution and in fact even the total transfers to states relative to GDP was increased during this period (Paragraph 3.116 of FC15 Second Report, Volume - I).

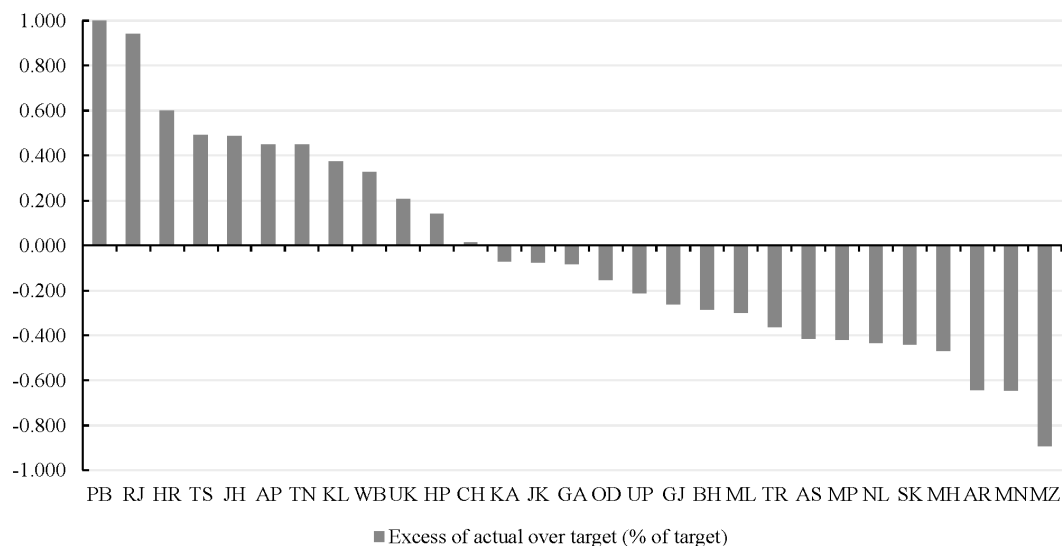


Chart 3: State wise fiscal deficit to GSDP ratio: ranking according to excess of actual over target (adj. f) as % of target (FC14 period)**

Source (Basic data): RBI and MoSPI

For FC15 period, we have made the comparative sustainability comparisons in two ways. First, we have considered the all-state fiscal deficit target to be 3% of GDP and then determined state differentiated fiscal deficit to GSDP targets based on first determining an overall interest payment to revenue receipts ratio consistent with the 3% fiscal deficit target. This is similar to what was done for the earlier FC periods. However, in the FC15 period, due to the occurrence of the COVID-19 led economic shock, the central government had allowed the state governments to borrow more than the 3% fiscal deficit to GDP limit subject to certain conditions. In view of this facilitation of fiscal stimulus through the state governments, the all-state fiscal deficit target for the FC15 period averages at 4.17% of GDP (Srivastava 2022). Accordingly, a higher level of interest payment to revenue receipts ratio consistent with this higher target of fiscal deficit to GDP was used in order to derive the state differentiated fiscal deficit targets relative to GSDP. Chart 4 shows the first case. The group of deviant states in this case that do not satisfy the individual sustainability criteria has become much larger. This group includes Punjab, Tamil Nadu, Kerala, Himachal Pradesh, Telangana, West Bengal, Madhya Pradesh, Rajasthan, Haryana, Goa, Karnataka, Sikkim, Meghalaya, Bihar and Andhra Pradesh.

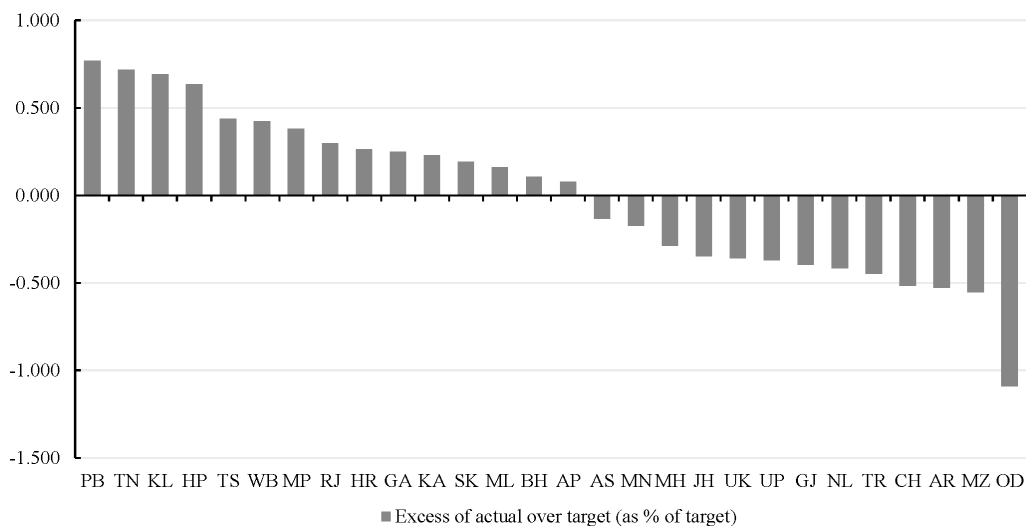


Chart 4: State wise fiscal deficit to GSDP ratio: ranking according to excess of actual over target (adj. f) as % of target (FC15 period Case 1)**

Source (Basic data): RBI and MoSPI

However, once the all-state fiscal deficit target is increased to 4.17% of GDP, the number of deviant states in terms of fiscal sustainability comes down. The list is now limited to the following states – Punjab, Tamil Nadu, Kerala, Himachal Pradesh, Telangana and West Bengal (Chart 5).

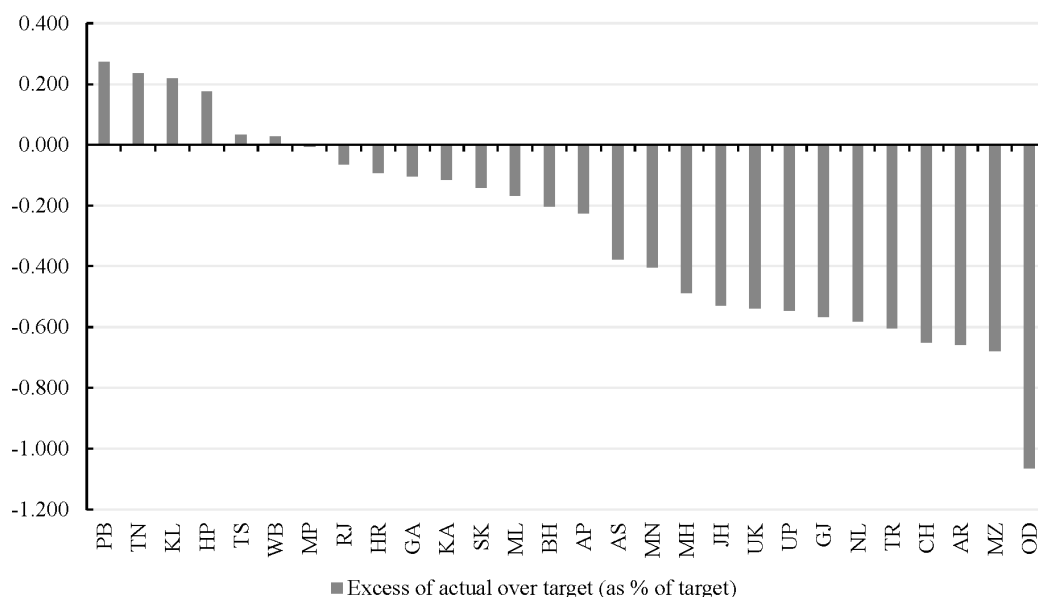


Chart 5: State wise fiscal deficit to GSDP ratio: ranking according to excess of actual over target (adj. f) as % of target (FC15 period Case 2)**

Source (Basic data): RBI and MoSPI

Table 6 shows the state differentiated sustainable level of fiscal deficit along with the actual fiscal deficit for individual states, for the weighted averages of the ML and SH groups, and for the all-state weighted average. This is done for FC12, FC13, FC14, and FC15 periods using the methodology described in sections 3 and 4. For FC15 period, values with reference to both alternatives are given. In the aggregate, considering the all-state weighted average, the deviation from the target fiscal deficit of 3% of GDP as provided in the FRBM of the Centre appeared only in the FC14 and FC15 periods. Otherwise, considering the all-state performance, states have remained consistent with the fiscal deficit target in the aggregate for FC12 and FC13 periods. In the case of FC15 period, the all-state average exceeds the value of 3% but remains within the value of the extended target of 4.17%.

Table 6: Comparing sustainable and actual fiscal deficits relative to GSDP/GDP

State	FC12		FC13		FC14		FC15 (All state f=3% of GDP)		FC15 (All state f=4.17% of GDP)	
	Adj. f**	f	Adj. f**	f	Adj. f**	f	Adj. f**	f	Adj. f**	f
AP	0.048	0.044	0.050	0.008	0.035	0.050	0.033	0.036	0.046	0.036
AS	0.032	0.020	0.035	0.012	0.044	0.026	0.049	0.042	0.068	0.042
BH	0.055	0.029	0.055	0.028	0.057	0.041	0.046	0.051	0.065	0.051
CH	0.035	0.010	0.043	0.015	0.037	0.037	0.043	0.021	0.060	0.021
GJ	0.028	0.031	0.027	0.023	0.026	0.019	0.027	0.016	0.037	0.016
HR	0.032	0.019	0.027	0.029	0.026	0.042	0.027	0.034	0.037	0.034
JH	0.028	0.033	0.032	0.019	0.027	0.040	0.038	0.025	0.053	0.025
KA	0.028	0.022	0.029	0.020	0.029	0.027	0.029	0.035	0.040	0.035
KL	0.028	0.030	0.027	0.033	0.026	0.036	0.027	0.046	0.037	0.046
MH	0.028	0.023	0.027	0.017	0.026	0.014	0.027	0.019	0.037	0.019
MP	0.038	0.026	0.045	0.022	0.050	0.029	0.036	0.049	0.050	0.049
OD	0.037	0.016	0.041	0.004	0.049	0.042	0.074	-0.007	0.103	-0.007
PB	0.028	0.025	0.027	0.030	0.026	0.052	0.027	0.048	0.037	0.048
RJ	0.031	0.031	0.033	0.022	0.026	0.051	0.033	0.042	0.045	0.042
TN	0.028	0.022	0.027	0.020	0.026	0.038	0.027	0.046	0.037	0.046
TS	--	--	--	--	0.026	0.039	0.027	0.039	0.037	0.039
UP	0.042	0.036	0.037	0.025	0.046	0.037	0.040	0.025	0.055	0.025
WB	0.028	0.052	0.027	0.035	0.026	0.035	0.027	0.038	0.037	0.038
ML group	0.032	0.028	0.032	0.023	0.030	0.033	0.031	0.033	0.043	0.033
AR	0.158	0.069	0.125	0.043	0.119	0.042	0.135	0.064	0.187	0.064
GA	0.038	0.040	0.027	0.030	0.028	0.026	0.027	0.034	0.037	0.034
HP	0.038	0.035	0.036	0.034	0.030	0.035	0.028	0.046	0.040	0.046
JK	0.056	0.063	0.058	0.042	0.062	0.057	--	--	--	--
ML	0.048	0.027	0.042	0.028	0.052	0.037	0.050	0.058	0.069	0.058
MN	0.063	0.060	0.108	0.028	0.093	0.033	0.070	0.058	0.097	0.058
MZ	0.141	0.051	0.204	0.073	0.157	0.017	0.101	0.045	0.141	0.045
NL	0.065	0.073	0.107	0.038	0.083	0.047	0.058	0.034	0.081	0.034
SK	0.308	0.066	0.079	0.016	0.064	0.036	0.040	0.048	0.056	0.048
TR	0.051	0.008	0.070	0.035	0.060	0.039	0.054	0.030	0.075	0.030
UK	0.050	0.035	0.027	0.022	0.026	0.031	0.027	0.017	0.037	0.017
SH group	0.058	0.043	0.055	0.032	0.053	0.038	0.046	0.035	0.064	0.035
All States	0.030	0.029	0.030	0.024	0.030	0.033	0.030	0.033	0.042	0.033

Source (Basic data): RBI and MoSPI

In general, we find that the states in the SH group have higher sustainable fiscal deficit targets primarily because they receive higher transfers relative to their GSDPs. We also observe that in the aggregate, states considered together, have remained within sustainability thresholds for the FC12 and

FC13 periods but deviated for the FC14 period. They have remained within the sustainability threshold in the FC15 period when we consider the aggregate fiscal deficit target as the extended target due to the onset of COVID-19. It can also be seen that some states have deviated from the sustainability norms on a consistent basis while some have entered this group only occasionally. A list of the deviant states from the sustainability considerations based on the methodology described in sections 3 and 4 is given in Table 8.

Table 8: List of states with actual fiscal deficit exceeding their sustainable target fiscal deficit

<i>FC period (All state fiscal deficit to GDP ratio)</i>	<i>States with excess of actual FD over target (adjusted f^{**})</i>
FC12 (3.0%)	West Bengal, Jharkhand, Gujarat, Jammu and Kashmir, Nagaland, Kerala, Goa, and Rajasthan
FC13 (3.0%)	West Bengal, Kerala, Goa, Punjab, and Haryana
FC14 (3.0%)	Punjab, Rajasthan, Haryana, Telangana, Jharkhand, Andhra Pradesh, Tamil Nadu, Kerala, West Bengal, Uttarakhand, Himachal Pradesh and Chhattisgarh
FC15 (3.0%)	Punjab, Tamil Nadu, Kerala, Himachal Pradesh, Telangana, West Bengal, Madhya Pradesh, Rajasthan, Haryana, Goa, Karnataka, Sikkim, Meghalaya, Bihar and Andhra Pradesh
FC15 (4.17%)	Punjab, Tamil Nadu, Kerala, Himachal Pradesh, Telangana and West Bengal

Source: Authors' presentation

Some states such as West Bengal, Kerala, Punjab, and Tamil Nadu have occurred repeatedly within the ML group. In the SH group, two states namely, Goa and Himachal Pradesh also appear in several periods as non-compliant with their individual norms. States like Telangana and Andhra Pradesh have joined this list only recently. Both these states have appeared in the list only after the erstwhile Andhra Pradesh was bifurcated.

6. Implementing state differentiated fiscal deficit norms in practice

States have often complained that all of them have been subjected with the same norm of 3% of fiscal deficit relative to GSDP. This is a misreading of the situation since neither the FC12 nor the Centre's amended FRBMA (2018) provides for this. FC12 gave the states the option to choose the ipr^{**} route whereby under certain circumstances, an individual state can implicitly have a target fiscal deficit higher than 3% of GSDP. Centre's FRBMA 2018 implies only an aggregate fiscal deficit for all states but does not indicate any target

for individual states. States have argued that since their individual fiscal conditions are different, they should be allowed to borrow more than 3% in the cases where this appears to be justified. The Centre's original FRBMA of 2003 had not specified any state level norm either for all states considered together or for individual states. It was only the FC12 which had suggested norms for the central government and for the state governments considered together. For fiscal deficit relative to GDP, these norms were 3% each for the central government and for the aggregate of states. The FC12 had gone beyond this and recommended for each state government, a target of fiscal deficit which could be fixed either in terms of GSDP, at 3% each, or in terms of interest payments to revenue receipts ratio. These provisions were to be incorporated in the states' individual Fiscal Responsibility Legislations. If the states were to opt for the first option, they would have uniform targets of fiscal deficit relative to GSDP. If the states were to opt for the second option, they would have a similar target in terms of interest payments to revenue receipts ratio but differentiated fiscal deficit targets when measured relative to GSDP. If the states exercise this choice such that one group opted for the first option and another group opted for the second option, there is the problem of ensuring that their aggregate fiscal deficit relative to GDP remains consistent with the 3% target which was derived independently from macro saving and investment conditions.

In this article, we have illustrated as to how such state differentiated targets of fiscal deficit can be derived while maintaining consistency with the macro requirements of sustainability. We have illustrated this with reference to FC12, FC13, FC14 and FC15 periods (covering first three years). There is however a major practical problem in terms of implementing such an elaborate scheme. For this purpose, the FC12 had recommended the setting up of a Loan Council as in the case of Australia. The central government has the power, under Constitutional Articles 292 and 293, to oversee the borrowing of states under certain conditions. These articles are reproduced below:

"Article 292. Borrowing by the Government of India

The executive power of the Union extends to borrowing upon the security of the Consolidated Fund of India within such limits, if any, as may from time to time be fixed by Parliament by law and to the giving of guarantees within such limits, if any, as may be so fixed.

Article 293. Borrowing by States

(1) Subject to the provisions of this article, the executive power of a State extends

to borrowing within the territory of India upon the security of the Consolidated Fund of the State within such limits, if any, as may from time to time be fixed by the Legislature of such State by law and to the giving of guarantees within such limits, if any, as may be so fixed.

(2) The Government of India may, subject to such conditions as may be laid down by or under any law made by Parliament, make loans to any State or, so long as any limits fixed under article 292 are not exceeded, give guarantees in respect of loans raised by any State, and any sums required for the purpose of making such loans shall be charged on the Consolidated Fund of India.

(3) A State may not without the consent of the Government of India raise any loan if there is still outstanding any part of a loan which has been made to the State by the Government of India or by its predecessor Government, or in respect of which a guarantee has been given by the Government of India or by its predecessor Government.

(4) A consent under clause (3) may be granted subject to such conditions, if any, as the Government of India may think fit to impose."

Since the central and state level fiscal conditions change annually, it would be most practical for an institutional arrangement such as the Loan Council to specify annual targets for the central and state governments and also monitor the status of adherence to such targets. The FC can review the working of the Loan Council every five years. While our analysis is based on historical data, for an institution like the Loan Council, annual targets may be fixed but it would require forecasting various parameters. In their evaluation exercise however, they may be able to do it ex-post based on historical data.

7. Concluding observations

In this paper, we have considered the macro considerations that led to the determination of the fiscal deficit targets relative to GDP and GSDP at the level of centre, aggregate of states and individual states specially by the FC12. We have argued that the combined fiscal deficit of the central and state governments can be derived based on the balance of available investible resources in the system on the one hand and the demand for these resources on the other. The supply of investible resources comes from two main sources namely, household sector surplus savings that are kept in financial form and net inflow of capital from abroad. The demand for these investible resources emanates mainly from the government sector, that is, administrative departments in the form of central and state government fiscal deficits, the non-government

public sector and the private corporate sector. We have argued that although household sector financial savings have fallen, the sectoral saving investment balance still justifies an aggregate 6% fiscal deficit to GDP target for the centre and the states considered together.

The states, as per the rules proposed by FC12, could have gone for an interest payment to revenue receipts ratio which would have implied a differentiated fiscal deficit to GSDP ratio as the target. This choice depends on the growth rate, interest rate and revenue receipts to GSDP ratio of different states, relative to the corresponding all-state averages. In case a group of states opts for this route, macro consistency with this saving investment rule can still be ensured by using certain adjustment factors. If such a situation were to arise, it can be implemented by an institution like a loan council or fiscal council.

We have also illustrated how the individual states' differentiated targets could have been determined for FC12, FC13, FC14 periods and for the first three years covered under FC15. Two important conclusions emanate from these empirical exercises: 1) As a rule, the NEH group of states would have higher than the fiscal deficit to GSDP ratio of 3% target since their revenue receipts to GSDP ratio is generally higher than the corresponding ratio for ML group of states and 2) the differentiated fiscal deficit to GSDP targets for the states depend significantly on their revenue receipts to GSDP ratio which in turn depends on the principles adopted for transfer of resources to the states especially by the FC. Thus, the horizontal dimension of fiscal transfer and state level fiscal responsibility targets are best determined jointly.

References

- Finance Commission. (2004). *Report of the Twelfth Finance Commission (2005-2010)*. Government of India. <https://fincomindia.nic.in/commission-reports-twelfth>
- FRBM Review Committee. (2017). *Responsible growth: A debt and fiscal framework for 21st century India* (Vol. 1). Government of India, Department of Economic Affairs, Ministry of Finance.
- Rangarajan, C (2016): "Can India grow at 8 to 9 per cent?" The Hindu, (<http://www.thehindu.com/opinion/lead/can-india-grow-at-8-to-9-per-cent/article8596824.ece>, Accessed on 17 May 2016.)
- Srivastava, D. K. (2022). *The Future of fiscal consolidation in India*. Economic and Political Weekly, Issue, (13), 29-35.

- Srivastava, D.K., Bharadwaj, Muralikrishna, Kapur, Tarrung & Trehan, Ragini (2025a), An Index of Relative State-Specific Fiscal Sustainability, SCOPE, Volume 15 Number 03 September 2025.
- Srivastava D.K., Bharadwaj M., Kapur T. and Trehan R. (2025b). '*Determining State Differentiated Sustainable Fiscal Deficit to GSDP Ratios in India*'. Asian Journal of Economics and Finance. 7, 1-2, 135:156;
- Srivastava D.K. (2025), *FRBM for Viksit Bharat: Evolution, Key Issues and Future Reforms*, forthcoming ed. Vol., Joseph K.J. & Bhanumurthy N.R., Handbook of India's Public Finance, Routledge.