Does Spending More Mean Sustaining Less? Expenditure Composition and State Debt in India

Ashraful Khalq (Centre for Development Studies)

Abstract

This study examines whether higher social-sector and non-developmental expenditure erodes debt sustainability across Indian states. Using a balanced panel of 27 states from 2001 to 2024, the study employs three complementary analytical approaches: Engle-Granger and Westerlund cointegration tests, a primary-surplus fiscal reaction function estimated using fixed effects and IV/2SLS, and expenditure reaction functions for primary, non-developmental, and social-sector expenditure. The results do not support the view that these expenditure categories systematically weaken debt sustainability. Excluding them does not consistently improve long-run revenue-expenditure adjustment, while expenditure composition strengthens the primary-surplus response to debt. Moreover, neither expenditure category responds significantly to rising debt, although social-sector expenditure remains highly persistent. Debt sustainability therefore appears to depend more on broader fiscal adjustment and institutional capacity than on expenditure composition alone.

Keywords: Debt sustainability; Social-sector expenditure; Non-developmental expenditure; Fiscal reaction function; Sub-national finance; Indian states; Welfare expenditure

JEL Classification: H62, **H63**, **H72**, **H75**

1. Introduction, Background of the Study and Brief Literature Review

Public debt sustainability is a major concern in Indian public finance, particularly at the sub-national level. In fact, state governments spend almost 60% of the total public expenditure and are the key providers of essential social services like health, education and welfare (Kotasthane, 2022). Thus, fiscal sustainability is not only a matter of the level of expenditure, but also of expenditure composition, revenue collection, and the ability of governments to react to a rise in their debt levels. The effects of distinct types of spending on fiscal sustainability are, therefore, key.

The issue has become prominent as many states in India have increased subsidies, welfare transfers, and schemes that are dubbed as “freebies.” While such spending might bring short-term social and political rewards, it can lead to long-term fiscal obligations, especially if it is obtained by borrowing or if it displaces productive spending. Contingencies, financing of state owned enterprises and commitments of power distribution companies are also sources of fiscal pressures (Kaur et al., 2018; Mukhi & Tiwari, 2024; Rahman Andaleeb and Pingali, 2024). This brings up an important question: Does expenditure composition matter for debt sustainability?

A fundamental conceptual challenge is the fact that social-sector expenditure and non-developmental expenditure are not the same as subsidies or freebies. The social-sector expenditure comprises educational, health and welfare services and the non-developmental expenditure includes the expenditure for items with varying fiscal and economic functions. Furthermore, it is hard to consistently recognize subsidies across States. Gupta et al. (2024) point out the lack of a harmonised approach to measuring subsidies, and Mukhi & Tiwari (2024) differentiate targeted welfare from more general freebies which might lead to a larger fiscal burden. Therefore, it is not always possible to regard welfare-related expenditure as fiscally harmful since it can have very different characteristics, incidence and economic effects.

Mooij & Dev (2004) demonstrate that the social policy of the 90's ceased to be narrowly focussed on income support, and adopted a much wider human-development perspective. The role of increased expenditure compression, as the core of fiscal reforms, can have high social costs as is argued by Joshi (2006). Likewise, Chattopadhyay (2018) points out that the social sector's share of funds in the decade of the 2000s was still not sufficient to achieve inclusive development and that fiscal autonomy did not necessarily lead to greater attention to the social sector. All of this literature indicates that historically social expenditure debates have been characterised not only by debates on the level of adequacy, but also on the issue of fiscal capacity.

The budgets of the social sector may also have non-monetary consequences that can be considered benefits. Agarwal (2015) discovers that states in India have varying human development outcomes, which are linked to the social-sector expenditures. Baxi's (2019) work is related to the expenditure of education, health and related services and the human development performance of Gujarat. Bharat Singh (2009) indicates that due to fiscal constraints, weak tax mobilisation along with declining transfers, the per capita expenditure on the social sector in Manipur was also reduced and need strong resource mobilisation. The studies suggest that austerity with regard to social spending, as a reaction to debt pressures, has significant developmental implications.

The current issue of freebies, however, is about the fiscal sustainability of welfare promises. Mukhi & Tiwari (2024) using the data collected from the RBI have come to the conclusion that social-sector expenditure, subsidies, and outstanding liabilities have a significant impact on the fiscal deficits, and unlimited freebies can lead to adverse fiscal imbalance. Bharat Singh (2009) adds that such programmes can be a siphon of resources from development programmes. Similarly, Shinde (2026) suggests that ‘electorally attractive' transfers can give rise to long-term demands for debt and squeeze fiscal space for other purposes. These concerns do not prove that social-sector or non-developmental expenditure per se is bad for debt sustainability and warrant an analysis of the fiscal impacts.

Kumar (2024) situates the discussions around welfare in the context of the growth versus redistribution development paradigm. Welfare programmes can be interpreted as both an ineffective subsidy provided to citizens, or as a social right (Aditi, 2025). Rahman Andaleeb and Pingali (2024) will also claim that the Centre-state dynamics of politics influence the

definition of “welfare” and “freebies”. Therefore, the concept of ‘freebie' cannot be used as an analytical tool to evaluate fiscal sustainability.

Electoral incentives do not necessarily have a direct impact on the decision on expenditure. As part of Tamil Nadu, welfare program delivery presents a pattern that focuses on affordability, poverty alleviation, education and empowerment of the marginalised along with having electoral significance (Muruganandhan et al., 2025). Padmanabhan (2021) also concludes that freebies are not the only factors that affect voting behaviour – voters are also influenced by the overall performance of the government. The important fiscal issue is thus whether the politically-motivated spending diminishes the ability of a government to react to the increase in debt.

It is not as if borrowing per se is what is unsustainable. Its impact will depend on what happens with borrowed money and whether or not fiscal surpluses will be realized in the future. While the borrowing for productive activities can aid future growth, consistent borrowing to finance expenditure that has lesser future returns can lead to increased debt pressures (Kotasthane, 2022; Shanmugam & Renjith, 2023). The debt sustainability will thus be dependent on debt dynamics, economic growth, cost of borrowing, mobilisation of revenues, and fiscal adjustment mechanisms. This gives a more solid basis for analysis than on the basis of freebies.

The empirical evidence on the debt sustainability in India is mixed. A positive relationship between debt and primary surplus and a long-run revenue-expenditure linkage are evidence of sustainability as found by Deheri & Nag (2022). Shankar & Trivedi (2022) also find sustainability in a weak sense with the inclusion of structural breaks. Goyal & Mishra (2025) demonstrate the fiscal regimes and periods have varying sustainability. Shanmugam & Renjith (2023), on the other hand, state that the debt of the states is at an unsustainable level and could have a negative impact on growth. The divergent results suggest that debt sustainability is very path dependent.

In this context, the current paper explores the possibility of whether social-sector expenditure and non-developmental expenditure affects the debt sustainability of Indian states. The study tests fiscal consistency and fiscal responses over the long term and short term, respectively, for a balanced set of 27 states between 2001 and 2024. It does not presume that this kind of spending is unsustainable, but only examines if such composition of expenditure undermines the relationship between revenue and expenditure, if it lessens the impact of higher debt on the primary-balance or if it is not affected by debt pressures. The rest of the paper is laid out as follows. Section 2 outlines the concept, Section 3 provides data and empirical approach, Section 4 highlights the findings, Section 5 explores the results against the background of the literature, and Section 6 offers some policy suggestions.

2. Conceptual Framework

The conceptual framework starts with the government budget constraint and establishes three complementary strategies to debt sustainability. The central argument is that there is no reason why large and persistent spending in the social sector, or in general non-developmental spending, should be considered debt-eroding. The extent to which revenue and expenditure are

linked over the longer-term, the sensitivity of the primary balance to the stock of debt and the sensitivity of individual expenditure categories to debt pressure determine debt sustainability. Together these three mechanisms constitute the bases of the three empirical pillars of this study.

2.1 Government budget constraint and the debt sustainability

Let B_{it}be the stock of public debt of state $i$in year t, $r_{it}$the effective interest rate, G_{it}be the primary expenditure, and T_{it}be the total revenue of state i. The flow budget constraint is:

$$B_{it} = (1 + r_{it})B_{i,t-1} + G_{it} - T_{it} \qquad (1)$$

If the primary surpluses are defined as $PS_{it} = T_{it} - G_{it}$then equation (1) is:

$$B_{it} = (1 + r_{it})B_{i,t-1} - PS_{it} \qquad (2)$$

To make fiscal sustainability easier to evaluate, define:

$$b_{it} = \frac{B_{it}}{Y_{it}},\ ps_{it} = \frac{PS_{it}}{Y_{it}}$$

where $Y_{it}$is GSDP. The following is the approximate debt dynamics:

$$\Delta b_{it} \approx (r_{it} - g_{it})b_{i,t-1} - ps_{it} \qquad (3)$$

Debt dynamics depend on the interest-growth differential, as well as the primary fiscal balance, as can be seen in equation (3). There are two ways to address an increase in debt in a state: raise revenue or cut primary spending (or both). Borrowing is thus not necessarily unsustainable. What matters is the responsiveness of fiscal policy in the long run to debt (Bohn, 1998, 2009; Kotasthane, 2022).

When the budget constraint is solved forward, the intertemporal condition is:

$$B_{it} = \sum_{s=1}^{\infty}\left[\prod_{k=1}^{s}\frac{1}{1 + r_{i,t+k}}\right]PS_{i,t+s} \qquad (4)$$

subject to no-Ponzi condition:

$$\lim_{s\to\infty}\left[\prod_{k=1}^{s}\frac{1}{1 + r_{i,t+k}}\right]B_{i,t+s} = 0 \qquad (5)$$

Thus, debt becomes sustainable as long as there is fiscal adjustment in the future (Hamilton & Flavin, 1986). Similarly, Shanmugam & Renjith (2023) highlight the significance of fiscal space in repaying the loans to assess their sustainability implications.

In the present study, this adjustment mechanism is assessed based on three related pillars.

2.2 Pillar One: The long-run relationship between revenue and expenditure

The first pillar is looking at whether some stable long-run relationship exists between revenues and expenditures. According to the cointegration literature the basic relationship is:

$$TR_{it} = a_i + \beta_i TE_{it} + u_{it} \qquad (6)$$

In the case of non-stationary $TR$and TE, but stationary u_{it}, revenue and expenditure are cointegrated. This means that neither the differences between them grows without bounds, which is evidence for fiscal sustainability (Hakkio & Rush, 1991; Trehan & Walsh, 1991). Quintos, (1995) also distinguishes between stronger and weaker sustainability, depending on the magnitude of the coefficient in the long run.

The error-correction representation for the same is:

$$\Delta TR_{it} = \alpha_i\left(TR_{i,t-1} - \beta_i TE_{i,t-1}\right) + \sum_k \gamma_k \, \Delta TE_{i,t-k} + \sum_k \lambda_k \, \Delta TR_{i,t-k} + \varepsilon_{it} \qquad (7)$$

If the coefficient $\alpha_i$is negative and statistically significant, then the correction towards the long run equilibrium is taking place.

The unique aspect of this pillar is that it examines the correlation following the exclusion of the two expenditure categories that are key to the research question. There are three systems considered:

$$A\colon TR_{it} = a_i + \beta_i TE_{it} + u_{it} \qquad (8)$$
$$B\colon TR_{it} = a_i + \beta_i (TE_{it} - NDE_{it}) + u_{it} \qquad (9)$$
$$C\colon TR_{it} = a_i + \beta_i (TE_{it} - SOC_{it}) + u_{it} \qquad (10)$$

In the case of System B, if there is a significant strengthening of cointegration by removing non-developmental expenditure, then NDE is found to be contributing to the original revenue-expenditure imbalance. On the other hand, if deletion of a category deteriorates the relation, the corresponding expenditure may be a part of the fiscal relation that is supported by the revenue and not the leading source of imbalances. This comparison is significant because previous studies suggest both the fiscal burden of subsidies and the welfare commitment (Mukhi & Tiwari, 2024) and that social spending is a factor that leads to human development (Agarwal, 2015).

2.3 Primary-Surplus Fiscal Reaction Function

Cointegration does not provide an indication of the reaction of governments to rising debt; it only identifies the long-run fiscal consistency. The fiscal reaction function for Pillar Two thus employs a Bohn-type function (Bohn 1998):

$$ps_{it} = \alpha_i + \gamma_1 ps_{i,t-1} + \gamma_2 b_{i,t-1} + \gamma_3 Z_{it} + \varepsilon_{it} \qquad (11)$$

If $\gamma_2$is positive, then the primary surplus is going to get better as the debt increases; in the case of solvency, this is sufficient but not necessary (Bohn, 1998, 2009). Different fiscal-response strategies have led to varied results in India, including sustainability, weak sustainability,

regime-dependent sustainability (Deheri & Nag, 2022; Goyal & Mishra, 2025; Shankar & Trivedi, 2022).

The research question must be more than typical debt answer. The composition-conditioned reaction function thus is:

$$ps_{it} = \alpha_i + \gamma_1 ps_{i,t-1} + \gamma_2 b_{i,t-1} + \gamma_3 Z_{it} + \gamma_4 (b_{i,t-1} \times NDEshare_{it}) + \gamma_5 (b_{i,t-1} \times SOCshare_{it}) + \varepsilon_{it} \quad (12)$$

The effective debt response is:

$$\frac{\partial ps_{it}}{\partial b_{i,t-1}} = \gamma_2 + \gamma_4 NDEshare_{it} + \gamma_5 SOCshare_{it} \quad (13)$$

Therefore, negative values of the interaction coefficient suggested a reduction of fiscal correction due to larger expenditure shares and positive values suggested an improvement in fiscal correction due to larger expenditure shares. This provides direct evidence on the impact of expenditure composition on debt-stabilising behaviour as opposed to the assumption that an increase in expenditure is bad for debt stabilisation.

2.4 Expenditure Reaction Functions

The size of the primary-balance response does not say anything about the adjustment happening via expenditure. So Pillar Three has expenditure as the dependent variable:

$$x_{it} = \omega_0 + \omega_1 x_{i,t-1} + \omega_2 b_{i,t-1} + \omega_3 outputgap_{it} + \omega_4 (b_{i,t-1} \times D_{high,it}) + \omega_5 X_{it} + v_{it} \quad (14)$$

where:

$$x_{it} \in \{P, , E, NDE^*/GSDP\ SOC/GSDP\} \quad (15)$$

In this way, NDE^*does not include interest payments to not create a mechanical association between debt and spending. The persistence of expenditure is captured by the coefficient $\omega_1$and the relationship between expenditure and debt is captured by the coefficient ω_2. A positive $\omega_2$would signify further debt-driven expenditures growth under debt pressure, which could be a ratchet effect. If coefficient was negative, it would signify retrenchment. This response varies depending on the interaction with D_{high}, to reflect the fiscal-fatigue hypothesis of Ghosh et al., (2013).

The three pillars then address different aspects of the research question that are interrelated. Pillar One establishes a link between NDE and social expenditure and the long-term revenue-expenditure imbalance. Pillar Two rules the budget shares as either undermining or reinforcing the primary-surplus response to debt. The question is whether these expenditures adjust in response to an increase in debt, as Pillar Three does. A cross-sector agreement on the three types of evidence offers a more appropriate conceptual and empirical foundation for deciding whether higher social sector and non-developmental expenditure undermines debt sustainability of Indian sub-national governments as opposed to simply relying on the disputed designation of “freebies.”.

3. Empirical Strategy

3.1 Data and Variable Construction

The empirical analysis is based on a balanced panel of 27 Indian states from 2001 to 2024. Sample consists of 24 observations (one each year) for each state. A state-level framework is suitable considering the significant variation in debt levels, revenue potential, expenditure obligations, and fiscal adjustment among the States in India (Kaur et al., 2018; Ramu, 2021). These disparities can be hidden if fiscal sustainability is assessed at the overall national level.

Financial data is taken from official state statistics on finance. The primary surplus-to-GSDP ratio (the dependent variable in Pillar Two) is defined as:

$$ps_{it} = \frac{TR_{it} - (TE_{it} - IP_{it})}{Y_{it}} \qquad (32)$$

where $TR$is the total revenue, $TE$is the total expenditure, $IP$is the interest payments and Ynominal GSDP is the nominal GSDP.

Interest payments are deducted as these payments mostly reflect borrowing in the past and not discretionary spending today. The treatment is based on the logic of fiscal reaction analysis whereby the actual fiscal effort of the government is assessed using the primary balance (Bohn, 1998 and Afonso and Hauptmeier, 2009). The non-developmental expenditure is also adjusted and used in the empirical models as follows:

$$nde^{*}_{it} = \frac{NDE_{it} - IP_{it}}{Y_{it}},\ soc_{it} = \frac{SOC_{it}}{Y_{it}} \qquad (33)$$

The interaction models use the expenditure composition as a ratio of the total expenditure:

$$NS_{it} = \frac{NDE_{it} - IP_{it}}{TE_{it}},\ SS_{it} = \frac{SOC_{it}}{TE_{it}} \qquad (34)$$

NS and SS, therefore, measure the structure of state expenditures, and $nde^{*}$and socmeasure the expenditure structure in relation to the state economy size. By separating the ideas there is no risk of a short-term increase in spending being mistakenly seen as a change in the composition of the budget.

The trend-cycle decomposition is used to provide cyclical variables. These samples represent each state, for each fiscal series, q_{it}

$$q_{it} = \tau_{it} + c_{it},\ c_{it} = q_{it} - \hat{\tau}_{it} \qquad (35)$$

where $\tau_{it}$is an estimate of trend and $c_{it}$is the cyclical part. This procedure can be applied to output to get the output gap, or to expenditure ratios to get the total expenditure gap, non-developmental expenditure gap and the social-sector expenditure gap.

The models incorporate institutional and political controls. These include the implementation of state Fiscal Responsibility and Budget Management rules, election year, DISCOM debt restructuring (2015–2017), political orientation of state and Union governments and special-

category status. Institutional controls are strictly relevant as fiscal rules and federal structures can have impacts on fiscal behavior without having impacts on expenditure composition (Liu & Waibel, 2010; Simone & Topalova, 2009).

3.2 Pillar One – Testing for Long Run Fiscal Consistency

Pillar one empirically examines whether revenue and expenditure are co-moving in the long-term and whether the co-movements differ without the expenditure categories which are key to this study.

Estimates of the first stage relationship are not common across states. The residual that is obtained is:

$$\hat{u}_{it} = TR_{it} - \hat{a}_i - \hat{\beta}_i G_{it}^{j},\ j = A, B, C \qquad (36)$$

where $G^A = TE$, $G^B = TE - NDE$, and $G^C = TE - SOC$.

Stationarity of the estimated residual is looked into via:

$$\Delta\hat{u}_{it} = \delta_i \hat{u}_{i,t-1} + \sum_{\ell=1}^{p_i} \phi_{i\ell}\, \Delta\hat{u}_{i,t-\ell} + e_{it} \qquad (37)$$

The null hypothesis is:

$$H_0: \delta_i = 0$$

meaning that there is no cointegration. Rejection means that there will be a tendency for the difference between revenue and the appropriate expenditure measure to move towards the equilibrium.

To make panel level inferences, state-specific probabilities are aggregated using:

$$MW_j = -2\sum_{i=1}^{N} \ln\left(p_{ij}\right),\ MW_j \sim \chi^2_{2N} \qquad (38)$$

This will give all three systems a common test, but there will be some underlying relationships that vary from state to state.

Because of the relatively short time dimension and the fact that Indian states are likely to face common fiscal shocks, more emphasis is put on the evidence based on the error correction models with bootstrapped inference. An adjustment parameter is estimated for each state as:

$$\hat{\alpha}_{ij} = \frac{\partial \Delta TR_{it}}{\partial \widehat{ECT}_{i,t-1}^{\,j}},\ \widehat{ECT}_{i,t-1}^{\,j} = TR_{i,t-1} - \hat{\beta}_{ij} G_{i,t-1}^{j} \qquad (39)$$

Negative and statistically significant $\hat{\alpha}_{ij}$are an indicator of correction of the fiscal disequilibrium in previous fiscal year. Comparisons of the number and magnitude of correcting states between A, B and C determine if non-developmental or social-sector expenditure is

important for improving or weakening long run fiscal consistency. This means that Pillar One's role is not just to act as a pass or fail sustainability test, but also has a diagnostic function.

3.3 Pillar Two: Primary-Surplus Fiscal reaction

Pillar two moves from consistency over the long-term to the behavioural response of the Government to debt. The estimation of the empirical model takes the dynamic panel form:

$$\begin{aligned} ps_{it} = {} & \alpha_i + \lambda_t + \rho ps_{i,t-1} + \beta b_{i,t-1} + \theta_1 OG_{it} + \theta_2 NDG_{it} + \theta_3 SG_{it} \\ & + \theta_4 FRBM_{it} + \theta_5 ELEC_{it} + \theta_6 ALIGN_{it} + \psi_1 I_{it}^N + \psi_2 I_{it}^S + \varepsilon_{it} \end{aligned} \quad (40)$$

The composition interactions were operationally defined as:

$$I_{it}^N = b_{i,t-1} NS_{it},\ I_{it}^S = b_{i,t-1} SS_{it} \quad (41)$$

In this instance, OG, NDG and SG refer to the output, non-developmental and social-sector gaps. The state effects $\alpha_i$capture fiscal differences that are time-invariant and $\lambda_t$accounts for common shocks that happen every year.

The average relationship is taken as a benchmark with the fixed-effects model and the interaction model determines whether the reaction to debt is different for states with different expenditure structures. This is in line with the literature on fiscal reaction which permits institutional/fiscal features to moderate the reaction to indebtedness (Afonso & Hauptmeier, 2009; Afonso & Miranda, 2026).

The model includes a lagged dependent variable which makes the problem of conventional within estimation potentially subject to dynamic-panel bias (Nickell, 1981). Thus, IV/2SLS is the principle robustness estimator. The endogenous lagged primary surplus is also forecast, based on greater lags:

$$\widehat{ps}_{i,t-1} = \hat{\pi}_1 ps_{i,t-2} + \hat{\pi}_2 ps_{i,t-3} + \hat{\pi}_3 ps_{i,t-4} + \hat{\Pi} W_{it} \quad (42)$$

This is the predicted component that is used in the structural fiscal reaction equation.

The instrument relevance is measured by F-statistic in the first stage. The Wu-Hausman test is used to assess whether or not the data support the use of the lagged dependent variable as an endogenous regressor, and the Sargan test is used to check the validity of the overidentifying restrictions. Within-state dependence is taken into account by clustering standard errors at the state level in IV estimation.

Another specification tests if there is a different expenditure-composition effect for special-category versus general-category states:

$$H_{it}^N = I_{it}^N \times SPECIAL_i,\ H_{it}^S = I_{it}^S \times SPECIAL_i \quad (43)$$

This is also pertinent as special-category states may have varying abilities to absorb pressures for expenditure and debt.

3.4 Pillar Three: Reactions on the expenditure side

Pillar three categorizes fiscal adjustment in the primary balance (direct fiscal adjustment) when it takes place through spending. The three dependent variables are studied individually: total primary expenditure, non-developmental expenditure (excluding interest) and expenditure on social services.

Estimated model for expenditure category $k$is:

$$x_{it}^{k} = \alpha_i^k + \lambda_t^k + \rho_k x_{i,t-1}^{k} + \beta_k b_{i,t-1} + \eta_k OG_{it} + \varphi_k FRBM_{it} + \kappa_k ELEC_{it} + \delta_k Q_{it} + \Gamma_k' X_{it} + \nu_{it}^{k}$$

where

$$k = \{P,\ ,E,\ NDE^{*}\ SOC\}$$

Debt-regime exposure is defined as:

$$Q_{it} = b_{i,t-1} \times 1\left[b_{i,t-1} > Q_{0.75}(b)\right] \qquad (45)$$

The coefficient $\beta_k$thereby picks up the normal expenditure response to inherited debt, while $\delta_k$sets the degree to which the normal response varies across observations in the top 25% of the pooled debt distribution. This offers a direct test of the potential that expenditure behaviour can be affected by the debt burden, as argued by Ghosh et al. (2013) to be a variant of fiscal-fatigue. Similarly as in Pillar Two, dynamic endogeneity is handled by instrumenting $x_{i,t-1}^{k}$with its second, third and fourth lags; formally testing instrument strength, endogeneity and overidentification restrictions.

This approach of the empirical strategy thus forms a sequential testing of the research question. Under the Pillar One, the categories of the expenditure are determined whether they are related to long-run fiscal imbalance. Pillar Two tests the hypothesis that it is the composition of the budget that drives changes in primary-surplus reactions to debt. Pillar Three reflects how the expenditures increase, decrease or remain unchanged due to the debt pressure. A consensus or significant lack of consensus on these three mechanisms is the basis on which decisions are made on whether higher social-sector and non-developmental expenditure is undermining sub-national debt sustainability or whether a decision on the size and political character of such expenditure is an inference of unsustainability.

4. Findings

4.1 Cointegration Approach

Table 1. Fisher/Maddala–Wu Panel Combination of State-Level *p*-Values

System	χ^2 Statistic	df	*p*-Value	No. of States
A: Revenue–Total Expenditure	66.0852	54	0.1253	27

B: Revenue–(Total Expenditure − Non-developmental Expenditure)	57.0774	54	0.3615	27
C: Revenue–(Total Expenditure − Social Sector Expenditure)	62.5605	54	0.1984	27

Notes: *Fisher/Maddala-Wu combines state-level p-values to test panel cointegration. χ^2 denotes the Fisher statistic and df degrees of freedom. All specifications use 27 states. None rejects the null of no cointegration at conventional significance levels.*

The first pillar offers mixed evidence in favour of cointegration between revenue and expenditure. The Fisher/Maddala-Wu panel test does not reject the null of no cointegration for all the specifications. Total revenue and total expenditure is related as System A produces $\chi^2(54) = 66.09$, $p = 0.125$. Non-developmental expenditure is dropped in System B to get $\chi^2(54) = 57.08$, $p = 0.361$ and social-sector expenditure is dropped in System C to get $\chi^2(54) = 62.56$, $p = 0.198$. Hence, there is no evidence of cointegration of any of the three systems at the overall level using the Fisher combination test.

Table 2. State-by-State Engle–Granger Cointegration Results

	A: Revenue–Total Expenditure			**B: Revenue–(Total Expenditure − Non-developmental Expenditure)**			**C: Revenue–(Total Expenditure − Social Sector Expenditure)**		
State	**β**	**ADF**	**p-value**	**β**	**ADF**	**p-value**	**β**	**ADF**	**p-value**
Andhra Pradesh	0.7699	-1.6566	0.7032	1.1039	-2.1881	0.5007	1.8322	-2.0165	0.5661
Arunachal Pradesh	1.3187	-3.1235	0.1444	1.8342	-2.9004	0.2294	2.5661	-2.2493	0.4774
Assam	0.9397	-0.8412	0.9439	1.4971	-0.9754	0.9242	2.2512	-3.1737	0.1253
Bihar	0.9191	-1.3857	0.8064	1.2862	-0.7763	0.952	2.6321	-2.8289	0.2566
Chhattisgarh	0.9409	-3.3837	0.08	1.2286	-4.2999	0.0128	2.0287	-2.6098	0.3401
Goa	1.0721	-4.0126	0.0228	1.6531	-2.2764	0.4671	2.0168	-3.1124	0.1486
Gujarat	1.1041	-4.1214	0.019	1.6749	-4.2906	0.0131	2.5288	-3.4127	0.076

Haryana	0.8137	-3.7849	0.0368	1.3379	-1.4634	0.7768	1.6451	-4.1089	0.0195
Himachal Pradesh	0.9191	-0.6225	0.9648	1.5449	-1.539	0.748	1.7971	-1.243	0.8608
Jharkhand	1.1317	-1.7654	0.6618	1.6361	-3.0314	0.1795	2.853	-2.1103	0.5304
Karnataka	0.9461	-2.5329	0.3694	1.3587	-0.6781	0.9602	2.0438	-2.4212	0.4119
Kerala	0.8478	-2.2511	0.4767	1.6592	-1.8689	0.6223	1.4055	-4.0824	0.0204
Madhya Pradesh	1.0022	-2.8494	0.2488	1.3662	-2.4522	0.4001	2.4579	-1.8811	0.6177
Maharashtra	0.962	-2.8637	0.2434	1.37	-3.4976	0.0642	1.9924	-1.3932	0.8035
Manipur	1.1211	-1.4615	0.7775	2.02	-1.4694	0.7745	2.3808	-0.4908	0.9754
Meghalaya	1.0971	-1.0655	0.911	1.6294	-1.145	0.8981	2.5005	-1.6721	0.6973
Mizoram	1.0308	-2.6162	0.3376	1.6348	-3.2119	0.1107	2.0016	-2.0889	0.5385
Nagaland	1.0478	-2.2567	0.4746	1.4607	1.8602	0.99	1.8111	-1.9045	0.6088
Odisha	1.191	-3.8434	0.0326	1.5919	-3.7097	0.0422	3.4923	-1.9225	0.6019
Punjab	0.7764	-0.9732	0.9245	1.4095	-0.6269	0.9644	1.0556	-2.2732	0.4683
Rajasthan	0.8371	-1.5957	0.7264	1.2042	-1.3216	0.8308	1.7783	-1.2711	0.8501
Sikkim	0.9968	-2.1169	0.5279	1.4158	-2.2271	0.4858	2.3806	-2.4979	0.3827
Tamil Nadu	0.8178	-1.9145	0.6049	1.2665	-2.4031	0.4188	1.4351	-1.5704	0.736
Tripura	1.0065	-1.8794	0.6183	1.6665	-1.8175	0.6419	2.112	-2.3797	0.4278
Uttar Pradesh	1.1256	-3.4277	0.0739	1.7874	-2.6654	0.3189	2.3234	-1.7241	0.6775
Uttarakhand	1.0615	-2.8901	0.2333	1.7428	-2.6643	0.3193	2.4511	-5.1972	0.01
West Bengal	0.8986	-1.4436	0.7843	1.3491	-0.9457	0.9286	2.6038	-2.2348	0.4829

Notes: *β denotes the Engle-Granger coefficient; ADF denotes the residual-based Augmented Dickey-Fuller statistic. States have 24 observations. Specifications A-C use total expenditure, excluding NDE, and excluding social-sector expenditure, respectively. Cointegration is significant at 5% (or 10% where stated)..*

The state level Engle-Granger results also have their limitations. While six states are found to be cointegrated in System A at 10% level (Chhattisgarh, Goa, Gujarat, Haryana, Odisha and

Uttar Pradesh), two more states are cointegrated in System B at the same level (Gujarat and Madhya Pradesh). This number reduces to 4 in System B (Chhattisgarh, Gujarat, Maharashtra and Odisha). Four other states are also cointegrated in System C, Gujarat, Haryana, Kerala and Uttarakhand. Most importantly, the removal of either expenditure category does not result in a general increase in the level of cointegration for the states. Overall, the Engle-Granger evidence offers little in the way of support for the argument that it is either non-developmental or social-sector outlays that are directly responsible for the long-run split between revenues and expenditures.

However, care should be taken in the interpretation of these results as each state provides only 24 observations each year. The results from the error-correction model are more conclusive in terms of fiscal adjustment in the long run. For the reported states in System A, of the 26 available, 69.2% (18) are found to have significant error correction using the absolute t-statistic around 1.65.

Table 3. Westerlund Cointegration Test: Statewise Results

State	**(A) Revenue–Total Expenditure**		**(B) Revenue–(Total Expenditure − Non-developmental Expenditure)**		**(C) Revenue–(Total Expenditure − Social Sector Expenditure)**	
	α	**t-stat.**	**α**	**t-stat.**	**α**	**t-stat.**
Andhra Pradesh	−0.0219	−0.0882	−0.3963	−1.5152	−0.6488	−2.8083
Arunachal Pradesh	−0.7025	−1.6731	−0.7950	−1.9816	−0.9504	−3.3494
Assam	−0.5554	−1.8292	−0.8382	−2.9724	−0.3104	−1.1199
Bihar	−0.1113	−0.7635	0.0592	0.4710	−0.2537	−1.6322
Chhattisgarh	−0.5892	−1.5997	−1.0643	−2.8851	0.0223	0.0986
Goa	−1.6026	−7.6432	−1.4091	−4.2447	−1.3214	−4.9563
Gujarat	−1.4250	−3.6362	−1.3198	−3.6292	−0.3313	−0.7459

Haryana	−1.2075	−3.5682	−0.5291	−1.5310	−0.5454	−1.7579
Himachal Pradesh	−0.7539	−1.8149	−0.8712	−2.7456	−0.5697	−1.4250
Jharkhand	−1.7811	−5.3923	−1.5260	−4.0386	−0.7316	−2.9506
Karnataka	−1.3635	−8.5388	−1.8106	−2.6599	−1.0515	−3.8644
Kerala	−1.6789	−4.5249	−0.7739	−5.1210	−1.6336	−3.6385
Madhya Pradesh	−1.1507	−4.0263	−1.1000	−2.9265	−0.9850	−2.8047
Maharashtra	−1.1411	−4.1035	−1.3422	−3.5353	−1.2928	−5.3659
Manipur	−0.3730	−1.3965	−0.1723	−0.6012	−0.1751	−0.6422
Meghalaya	−0.3300	−0.9403	−0.6769	−1.4406	−0.5632	−1.6709
Mizoram	−0.3063	−1.2630	−0.5037	−1.9802	−0.2971	−1.5096
Nagaland	−1.5034	−3.9649	0.4593	1.0790	−0.5304	−1.2522
Odisha	−1.2955	−2.8502	−0.7256	−2.1066	−0.6833	−1.8466
Punjab	−0.1473	−0.5388	−0.0941	−0.3803	0.1966	1.3717
Rajasthan	−1.1558	−3.4794	−0.8869	−4.3006	−0.3637	−1.1949
Sikkim	−0.7012	−2.8714	−0.8894	−2.2881	−0.4153	−1.9523
Tamil Nadu	−0.9214	−3.4184	−0.7486	−2.5191	−0.3732	−1.8558
Telangana	—	—	—	—	—	—

Tripura	−0.4746	−1.5474	−0.6559	−2.1350	−0.1766	−0.9423
Uttar Pradesh	−1.5687	−3.6596	−1.3526	−3.4650	−1.3349	−2.4131
Uttarakhand	−0.0959	−0.3207	−0.2440	−0.6017	0.1630	0.5751
West Bengal	−0.6971	−2.7418	−0.5719	−2.3778	−0.4551	−2.6845

Notes: *α denotes the error-correction coefficient and t-stat. its test statistic. Westerlund cointegration tests are estimated separately by state using 299 bootstrap replications. Specifications A-C use total expenditure, excluding NDE, and excluding social-sector expenditure, respectively.*

.

When non-developmental expenditure is removed the level of significant error correction increases marginally from 69.2% to 73.1%. This is an improvement, but it does not suggest that, as a whole, non-developmental expenditure is a source of fiscal imbalance. This is not the case regarding social-sector expenditure. If you take out spending on the social sector, the percentage of states that have large adjustments drops from 69.2 percent to 57.7 percent. The exclusion of social expenditure doesn't actually increase revenue-expenditure consistency, but it does decrease it for some of the sample. Thus, in some states, it would seem that social-sector spending is not beyond the revenue-funded expenditure trajectory, rather it is an integral component of that trajectory.

Arunachal Pradesh, Goa, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal are twelve states that exhibit significant error correction in all three specifications. Thus, their LR adjustment is seen to be fairly resilient to the expenditure split examined here. However, Bihar, Manipur, Punjab and Uttarakhand do not show any significant error correction in all the three systems. Hence, the non-adjustment in these States can not be blamed on non-developmental spending or spending on the social sectors. It seems to be the sign of a general imbalance in the budget.

This difference is pertinent with respect to Indian literature. Though Mukhi and Tiwari (2024) link social sector expenditure, subsidy and outstanding liabilities with fiscal deficits, the current long-run evidence reveals that the social sector expenditure as a broad category of budgetary expenditure does not violate the relationship between revenue-expenditure. It is also in line with the necessity to separate the fiscal impact of welfare from its function as development. While Agarwal argues that spending in the social sector has been conducive to human development, Chattopadhyay asserts that the spending in the social sector has not always been “too much” for India's developmental needs. The results thus suggest that as a broad category, social expenditure should not be blamed for bringing long-run fiscal instability.

4.2 Fiscal Response Function (Primary Surplus to GSDP as Dependent Variable)

Table 4. Fiscal Response Function: Primary Surplus-to-GSDP as Dependent Variable

Variables	Baseline (FE)	Headline (FE, interactions)	Pooling OLS
L. Primary surplus-to-GSDP	0.628***	0.480***	0.765***
	(0.057)	(0.043)	(0.067)
L. Debt-to-GSDP	0.020+	−0.079***	−0.034
	(0.012)	(0.019)	(0.043)
Output gap	−0.020	−0.022	−0.038+
	(0.033)	(0.045)	(0.023)
Expenditure gap	−0.059	—	—
	(0.087)	—	—
Non-developmental expenditure gap	—	0.016	0.075
	—	(0.057)	(0.061)
Social-sector expenditure gap	—	−0.121	−0.196
	—	(0.139)	(0.165)
FRBM dummy	—	0.017***	0.006**
	—	(0.003)	(0.002)
Election-year dummy	—	−0.002	−0.003
	—	(0.002)	(0.003)
Centre–state same alliance dummy	—	−0.004**	0.001
	—	(0.001)	(0.001)
L. Debt-to-GSDP × NDE expenditure share	—	0.163***	0.059
	—	(0.021)	(0.059)
L. Debt-to-GSDP × Social-sector expenditure share	—	0.169***	0.106*
	—	(0.027)	(0.047)

Intercept	—	—	−0.016***
	—	—	(0.005)
Uday dummy	—	—	−0.004+
	—	—	(0.002)
Observations	621	621	621
R^2	0.446	0.520	0.724
Adjusted R^2	0.418	0.490	0.719
AIC	−3158.2	−3235.4	−3072.5
BIC	−3136.1	−3186.6	−3014.9
RMSE	0.02	0.02	0.02
Standard errors	HC1	HC1	HC1

Notes: *Dependent variable is the primary surplus-to-GSDP ratio. FE and OLS denote fixed-effects and ordinary least squares estimations. HC1 robust standard errors are reported. L. denotes one-period lag; NDE denotes non-developmental expenditure. Interaction terms capture debt effects conditional on expenditure composition. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001..*

Pillar Two offers a more direct measure of debt-stabilising behaviour. In the basic fixed-effects approach, the coefficient on the lagged debt to GSDP is positive but not particularly significant (0.020, $p < 0.10$). This indicates that, in the absence of explicit consideration of the expenditure composition, the average primary-surplus reaction to past debt is positive, but small. While a positive debt response does not necessarily signal fiscal sustainability, in the Bohn (1998, 2009) framework it is compatible with fiscal correction.

The results are quite different with the inclusion of expenditure composition. In the headline fixed-effects specification the direct effect of lagged debt turns negative and statistically significant at −0.079 ($p < 0.001$). But the links between debt and the expenditure shares are positive and statistically significant. The debt × non-developmental expenditure share coefficient is 0.163 ($p < 0.001$) and the debt × social-sector expenditure share coefficient is 0.169 ($p < 0.001$). The impact of a rise in lagged debt alone is thus not a true estimate of the overall debt reaction as it is the response to an increase in debt with zero expenditure shares, which is not the typical configuration of the fiscal structure of state budgets. An important number is the sum of all the marginal effects at actual expenditure shares that is relevant for economic considerations.

The positive interaction coefficients indicate that the primary-surplus effect is more positive the larger the shares of non-developmental and social-sector spending. This is significant in the sense that the first impression that came to mind, based on worries about committed or welfare spending, was that increasing shares would hamper fiscal adjustment. Those estimates don't bear that out. Instead, the fiscal adjustment is driven by the composition of expenditures with

a pattern of more fiscal consolidation at higher expenditure shares, which is more in line with any stronger primary-balance correction.

Further information is given in institutional variables. The coefficient of the FRBM dummy is positive (0.017, $p < 0.001$), suggesting that primary balances are better under the fiscal-rule regime. This corroborates the overall thesis that fiscal constraints at the institutional level can help to provide fiscal discipline. India's introduction of state-level fiscal responsibility regimes was supposed to curb sub-national fiscal risks (Liu & Waibel 2010), but variations in fiscal capacity of states is important for the effectiveness of fiscal rules (Simone & Topalova 2009).

The other negative and significant coefficient is for political alignment between the state and Union governments: −0.004 ($p < 0.01$). This is a sign of a less strong primary balance, *ceteris paribus*, in situations of a politically united government. This is in line with the soft-budget-constraint theory of federal fiscal systems, which states that the anticipation of help from a higher level of government can lower the incentives to adjust. The election-year coefficient on the other hand is negative but not statistically significant. The estimated effects of the primary-balance results thus do not generally suggest that there was a deterioration in fiscal conditions during election years, controlling for the other fiscal and institutional factors.

Table 5. IV/2SLS Estimates of the Fiscal Reaction Function

Variables	(1) Baseline FRF	(2) Headline FRF	(3) Special-Category Heterogeneity
Lagged Primary Surplus/GSDP	0.6938***	0.6215***	0.6212***
	(0.0446)	(0.0588)	(0.0545)
Lagged Debt/GSDP	0.0185	−0.1208*	−0.1253**
	(0.0138)	(0.0451)	(0.0429)
Output Gap	−0.1136**	−0.0809**	−0.0813**
	(0.0326)	(0.0286)	(0.0292)
Expenditure Gap	−0.3259*	—	—
	(0.1460)	—	—
NDE Gap	—	−0.0968	−0.0971
	—	(0.1378)	(0.1381)
SOC Gap	—	−0.3402†	−0.3392†
	—	(0.1752)	(0.1748)
Debt × NDE Gap	—	0.1349*	0.1513†
	—	(0.0500)	(0.0812)

Debt × SOC Gap	—	0.2284***	0.2237***
	—	(0.0487)	(0.0589)
Debt × NDE Gap × Special	—	—	−0.0158
	—	—	(0.0524)
Debt × SOC Gap × Special	—	—	0.0179
	—	—	(0.0657)
Observations	540	540	540
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R^2	0.7539	0.7641	0.7634
Within R^2	0.1598	0.1998	0.2007
RMSE	0.0160	0.0157	0.0157
First-stage F-statistic	66.0242***	50.8845***	50.5939***
Wu–Hausman test	9.0693**	5.2849*	5.2742*
Sargan test	0.5572 (0.7569)	0.8255 (0.6618)	0.8485 (0.6543)

Notes: *Dependent variable is the primary surplus-to-GSDP ratio. 2SLS estimates instrument lagged primary surplus with its second to fourth lags. State and year fixed effects are included; state-clustered standard errors are reported. † p<0.10, * p<0.05, ** p<0.01, *** p<0.001.*

Important robustness checks are the IV/2SLS estimates as the Wu-Hausman tests reject exogeneity of the lagged primary surplus. First stage F-statistics vary from 50.59 to 66.02 which is indicative of good relevance of the second, third and fourth lag instruments used. In addition, the Sargan tests do not reject the overidentifying restrictions such as the one for the headline model ($p = 0.662$). These diagnostics are used to aid the selected instrument set.

The IV estimates reproduce the basic qualitative trend. Lagged debt has a negative coefficient of −0.121 ($p < 0.05$) and the debt interaction terms reported are positive: 0.135 ($p < 0.05$) for the non-developmental term and 0.228 ($p < 0.001$) for the social-sector term. The magnitudes of these interaction variables in the IV table should not be interpreted as being directly comparable to the interaction variables (expenditure-shares) in the fixed-effects model. However, by itself, the positive conditional effects offer a separate validation that the nature of expenditures is important for the debt-fiscal relationship.

There is no indication in the special category specification that this conditional response is systematically different from that in the general category states. The triple interactions of non-

developmental and social-sector are not statistically significant, being −0.016 and 0.018 respectively. Thus it does not seem that the primary reason for the main relationship is the provision of different kinds of central assistance to states in the past.

4.3 Fiscal Response Function (Expenditure as Dependent Variable)

Table 6. Fiscal Response Function: Expenditure as Dependent Variable

Variables	Total Primary Expenditure/GSDP	NDE (Ex-interest)/GSDP	Social-Sector Expenditure/GSDP
L. Primary Expenditure/GSDP	0.807***	—	—
	(0.043)	—	—
L. Debt/GSDP	0.004	0.011	0.007
	(0.016)	(0.010)	(0.010)
Output Gap	−0.181***	−0.071*	−0.104***
	(0.030)	(0.028)	(0.014)
FRBM Dummy	0.004*	0.001	0.003*
	(0.002)	(0.002)	(0.001)
Election-Year Dummy	0.003	0.004*	−0.001
	(0.003)	(0.002)	(0.001)
L. Debt/GSDP × D_high	−0.002	−0.002	−0.007
	(0.006)	(0.003)	(0.005)
L. NDE (Ex-interest)/GSDP	—	0.730***	—
	—	(0.063)	—
L. Social-Sector Expenditure/GSDP	—	—	0.803***
	—	—	(0.057)
Observations	621	621	621
R^2	0.786	0.717	0.614
Adjusted R^2	0.775	0.702	0.593

AIC	−2792.5	−3057.1	−3665.1
BIC	−2761.5	−3026.1	−3634.1
RMSE	0.03	0.02	0.01
Standard errors	Driscoll–Kraay	Driscoll–Kraay	Driscoll–Kraay

Notes: *Dependent variables are total primary, non-developmental (excluding interest), and social-sector expenditure-to-GSDP ratios. FE models use Driscoll–Kraay standard errors. L. denotes one-period lag; D_high denotes high debt. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.*

Pillar Three is asking a question of expenditure: does the increase of debt lead to a decrease in expenditure or an increase in expenditure? The fixed-effects estimates suggest that there is strong persistence, and no direct effect on debt. The coefficients of the lagged dependent variables are: 0.807 for total primary expenditure, 0.730 for non-developmental expenditure (excl. interest), and 0.803 for social-sector expenditure all of which are significant at $p < 0.001$. There are thus clear continuities in expenditure commitments between years.

Lagged debt is statistically insignificant, however, in all three equations. Its total primary expenditure, non-developmental expenditure and social-sector expenditure coefficients are 0.004, 0.011 and 0.007 respectively. The debt × high-debt interaction also is statistically insignificant, at −0.002, −0.002 and −0.007 respectively. These estimates do not show any systematic increase in expenditure with increase in debt nor do they show any systematic reduction in expenditure.

Table 7. IV/2SLS Estimates of the Fiscal Expenditure Reaction Functions

Variables	**(1) Total Primary Expenditure**	**(2) Non-development Expenditure (Excl. Interest)**	**(3) Social-Sector Expenditure**
Lagged Primary Expenditure/GSDP	0.8526***	—	—
	(0.0179)	—	—
Lagged Non-development Expenditure/GSDP	—	0.8461***	—
	—	(0.0076)	—
Lagged Social-Sector Expenditure/GSDP	—	—	0.9487***
	—	—	(0.0475)
Lagged Debt/GSDP	−0.0050	−0.0040	−0.0003
	(0.0364)	(0.0103)	(0.0183)

Output Gap	−0.2384***	−0.0880**	−0.1204***
	(0.0392)	(0.0311)	(0.0162)
Debt × High Development Expenditure	−0.0011	−0.0005	−0.0097
	(0.0084)	(0.0034)	(0.0071)
Observations	540	540	540
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R^2	0.9512	0.8925	0.9286
Within R^2	0.7489	0.7387	0.5304
RMSE	0.0173	0.0133	0.0123
First-stage F-statistic	728.1236***	725.9973***	191.7356***
Wu–Hausman test	6.3900*	38.0579***	55.3265***
Sargan test	3.2089 (0.2010)	0.2719 (0.8729)	4.1129 (0.1279)

Notes: *Dependent variables are expenditure-to-GSDP ratios. 2SLS estimates treat lagged expenditure as endogenous and instrument it using second to fourth lags. State and year fixed effects are included. Clustered state-level standard errors are reported. $p < 0.05$, $p < 0.01$, $p < 0.001$.*

This conclusion is supported by the IV results. Lagged debt continues to be an insignificant part of total primary expenditure (−0.005), non-developmental expenditure (−0.004) and social-sector expenditure (−0.0003). The interactions of the high-debt are also not significant. First-stage F-statistics are extremely high (191.74-728.12) and the Wu-Hausman tests do not accept exogeneity in any of the three equations. The validity of the instruments is not rejected by Sargan test.

A noteworthy finding is that unlike the non-developmental expenditure and the total primary expenditure, the lag coefficient of social-sector expenditure in the IV model is high (0.949, $p < 0.001$). Once established, social spending patterns are therefore only slowly changed. But, don't mistake persistence for creating debt. The estimates do not indicate a fiscal-fatigue effect defined as systematic growth in these expenditures with growing indebtedness (Ghosh et al., 2013), as debt coefficients are not significant.

The three pillars in general result in a unified central conclusion. The evidence does not lend support to the view that, as broad categories, there is a systematic trade-off between higher social-sector expenditure and non-developmental expenditure and debt sustainability of the Indian states. In general, these expenditures cannot be eliminated to close the long-run fiscal imbalance; higher shares of expenditures do not make the estimated impacts of debt on the primary-surplus weaker; and neither type of expenditure shows systematic behavior with

respect to accumulated debt. The results instead indicate that fiscal sustainability is related to the overall fiscal behaviour of the states, such as primary-balance adjustment, institutional fiscal rules, revenue capacity and the fiscal situation in the state. This finding suggests a more nuanced understanding of the true nature of debt risks, and social expenditure as a whole, beyond the scope of mere political characterization as a "freebies" (Aditi 2025, Kumar 2024, Mukhi & Tiwari 2024).

5. Conclusion

This paper investigated whether the social-sector and non-developmental expenditure compromise the debt sustainability of Indian state governments. The subject is very topical as the debate over state finances, welfare schemes, subsidies and "freebies" rages on. While fiscal commitments, contingent liabilities and subsidies can impose fiscal pressures (Gupta et al., 2024; Gupta & James, 2023; Mukhi & Tiwari, 2024), whether or not this will have a negative impact on debt sustainability is ultimately an empirical question.

The study was done using three complementary approaches, with a balanced panel of 27 Indian states from 2001 to 2024. First, it evaluated the revenue-expenditure relationships in the long run excluding expenditure in the non-developmental and the social-sector. Second, it calculated fiscal reaction functions to see if there is a different primary-surplus response to debt, depending on the composition of the expenditure. Third, it explored if there is a systematic effect of debt pressures on primary expenditure, non-developmental expenditure and social-sector expenditure.

The evidence indicates that in general, neither social-sector expenditure nor non-developmental expenditure is a source of debt unsustainability. Neither of the categories is seen as a consistent cause of revenue-expenditure imbalance in the long run. While in some States, social-sector expenditure lessens fiscal adjustment, this means that social-sector expenditure is not necessarily an independent source of fiscal instability in these cases. This is significant because expenditures on social issues have been considered less than adequate in many situations and are more closely related to developmental targets.

This is further borne out by the fiscal reaction. A stronger social-sector and nongrowth component of the budget does not have a negative impact on the primary-surplus reaction to debt. The conditional estimates, however, suggest that fiscal correction is more strong at higher expenditure shares. Furthermore, neither category exhibits any noticeable systematic pattern in an increased reaction to a rise in expenditures with respect to an increase in debt. While social-sector spending is very persistent, this does not necessarily mean it is fiscally unsustainable.

These findings are not meant to dismiss rather than to qualify, current concerns. Although fiscal risks from debt and from commitments to subsidies and welfare, as mentioned by Mukhi & Tiwari (2024) and Shanmugam & Renjith (2023), respectively, are important, the findings do not imply that they apply to all expenditure on social services and/or non-development. The fiscal impacts of specific initiatives may vary from the overall fiscal impact of spending categories.

The emphasis should shift from the politically charged concept of "freebies" on the policy level. Welfare can be either considered as a fiscal largesse or a social right (Aditi, 2025) amid broader discussions of growth and redistribution (Kumar, 2024). Instead, more focus should be on financing sources, targeting efficiency, fiscal flexibility and transparency of subsidies, extra-budgetary borrowing, guarantees and contingent liabilities (Gupta et al., 2024; Gupta & James, 2023; Kaur et al., 2018).

Overall, the study finds that increased spending on the social sector and non-developmental activities does not necessarily negatively affect the sustainability of the debt in Indian states. The importance of expenditure composition should not be overstated, as fiscal sustainability is more closely linked to the nature of financing and government strategies to deal with increasing debt levels, as well as the nature of fiscal institutions.

References

Aditi. (2025). Rights or Freebies? Alternative Imaginations of the Welfare State in the Indian Context. *Administration and Society*, *57*(7), 969–998. https://doi.org/10.1177/00953997251357206

Afonso, A., & Hauptmeier, S. (2009). *Fiscal Behaviour in the European Union: Rules, Fiscal Decentralization and Government Indebtedness* (1054; Working Paper Series). http://ssrn.com/abstract_id=1399284.

Afonso, A., & Miranda, C. F. (2026). Compliance with fiscal sustainability and the euro. *Empirica*, *53*(2), 285–316. https://doi.org/10.1007/s10663-026-09674-6

Agarwal, P. (2015). Social Sector Expenditure and Human Development: Empirical Analysis of Indian States. *Indian Journal of Human Development*, *9*(2), 173–189. https://doi.org/10.1177/0973703020150202

Baxi, H. (2019). Social Expenditure and Human Development in Gujarat. *Economic and Political Weekly*, *54*(2019), 120–138. https://doi.org/10.1080/07360932.2014.995196

Bharat Singh, T. (2009). State Finances and Social Sector Expenditures: A Case Study of Manipur State. *The Indian Economic Journal*, *57*(2), 126–142.

Bohn, H. (1998). The Behavior of U. S. Public Debt and Deficits. *The Quarterly Journal of Economics*, *113*(3), 949–963. https://doi.org/10.1162/003355398555793

Bohn, H. (2009). Intergenerational risk sharing and fiscal policy. *Journal of Monetary Economics*, *56*(6), 805–816. https://doi.org/10.1016/j.jmoneco.2009.06.010

Chattopadhyay, S. (2018). Social Sector Expenditure in India in the 2000s: Trends and Implications. *Journal of Development Policy and Practice*, *3*(1), 16–40. https://doi.org/10.1177/2455133317740449

Deheri, A., & Nag, A. (2022). Assessing the Long-Run Sustainability of Public Debt and Fiscal Deficit in India. *Global Journal of Emerging Market Economies*. https://doi.org/10.1177/09749101221113881

Ghosh, A. R., Kim, J. I., Mendoza, E. G., Ostry, J. D., & Qureshi, M. S. (2013). Fiscal Fatigue, Fiscal Space and Debt Sustainability in Advanced Economies. *Economic Journal*, *123*(566), F4–F30. https://doi.org/10.1111/ECOJ.12010

Goyal, A., & Mishra, B. R. (2025). Do Fiscal Regimes Matter for Fiscal Sustainability in India? *Asian-Pacific Economic Literature*. https://doi.org/10.1111/apel.12444

Gupta, S., & James, K. (2023). The Nature and Implications of Off-Budget Borrowings in India: Centre and States. *Indian Public Policy Review*. https://doi.org/10.55763/ippr.2023.04.03.001

Gupta, S., Malani, R., & Singh, A. (2024). Subsidies in India: Bridging the Data Gaps. *Indian Public Policy Review*. https://doi.org/10.55763/ippr.2024.05.05.001

Hakkio, C. S., & Rush, M. (1991). Is the Budget Deficit "Too Large?" *Economic Inquiry*, *29*(3), 429–445. https://doi.org/10.1111/J.1465-7295.1991.TB00837.X

Hamilton, J. D., & Flavin, M. A. (1986). On the Limitations of Government Borrowing: A Framework for Empirical Testing . *The American Economic Review*, *76*(4), 808–819. https://www.jstor.org/stable/1806077

Joshi, S. (2006). Impact of Economic Reforms on Social Sector Expenditure in India. *Economic and Political Weekly*, *41*(4), 358–365. https://www.jstor.org/stable/4417738

Kaur, B., Mukherjee, A., & Ekka, A. P. (2018). Debt Sustainability of States in India: An Assessment. *Indian Economic Review*. https://doi.org/10.1007/s41775-018-0018-y

Kotasthane, P. (2022). Six Essential Questions in Indian Public Finance. *Indian Public Policy Review*. https://doi.org/10.55763/ippr.2022.03.05.005

Kumar, A. (2024). Freebie Debates and Budgetary Priorities: Economic Growth-led India or Inclusive India. *International Journal of Community and Social Development*, *6*(1), 97–114. https://doi.org/10.1177/25166026241237325

Liu, L., & Waibel, M. (2010). *Managing Subnational Credit and Default Risks* (5362; Policy Research Working Paper). https://doi.org/10.1596/9780821384831_ch11

Mooij, J., & Dev, S. M. (2004). Social sector priorities: An analysis of budgets and expenditures in India in the 1990s. *Development Policy Review*, *22*(1), 97–120. https://doi.org/10.1111/J.1467-8659.2004.00240.X

Mukhi, S. S., & Tiwari, B. B. (2024). *Promises of Prosperity: The Burden of Freebies on India's Fiscal Health*. https://doi.org/10.21203/rs.3.rs-5385997/v1

Muruganandhan, S., Gokul, Y. G., Abishek, S., Thamilmani, R., Sivasubramanian, K., & Haripriya, B. (2025). Impact of Freebies in Electoral Politics and the Role of Dravidian

Government in Tamil Nadu. *Studies in Systems, Decision and Control*, *237*, 435–441. https://doi.org/10.1007/978-3-031-86708-8_35

Nickell, S. (1981). Biases in Dynamic Models with Fixed Effects. *Econometrica*, *49*(6), 1417. https://doi.org/10.2307/1911408

Padmanabhan, S. (2021). To take or not to take: is the freebie culture in Tamil Nadu elections a threat to Indian democracy? *Asian Journal of Political Science*, *29*(2), 215–237. https://doi.org/10.1080/02185377.2021.1951783

Quintos, C. E. (1995). Sustainability of the Deficit Process with Structural Shifts. *Journal of Business & Economic Statistics*, *13*(4), 409. https://doi.org/10.2307/1392386

Rahman Andaleeb and Pingali, P. (2024). Welfare Reforms and the Leviathan State. In *The Future of India's Social Safety Nets: Focus, Form, and Scope* (pp. 293–356). Springer International Publishing. https://doi.org/10.1007/978-3-031-50747-2_9

Shankar, S., & Trivedi, P. (2022). Evaluating the Long-Run Sustainability of India's Fiscal Management With Structural Change. *Margin the Journal of Applied Economic Research*. https://doi.org/10.1177/09738010231157457

Shanmugam, K., & Renjith, P. S. (2023). Sustainability and Threshold Value of Public Debt of Centre and All State Governments in India. *Indian Public Policy Review*. https://doi.org/10.55763/ippr.2023.04.03.002

Shinde, J. (2026). Economic Populism and Political Power: Analysing the Electoral Impact and Fiscal Risks of Freebie Schemes in Indian States. *IIP : International Multidisciplinary Research Journal*, *3*(Issue-I (January-March)), 576–579. https://iipublications.com/iipimrj/article/view/774

Simone, A., & Topalova, P. (2009). India'S Experience With Fiscal Rules: An Evaluation and the Way Forward. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1457598

Trehan, B., & Walsh, C. E. (1991). Testing Intertemporal Budget Constraints: Theory and Applications to U.S. Federal Budget and Current Account Deficits. *Journal of Money, Credit and Banking*, *23*(2), 206–223. https://ideas.repec.org/a/mcb/jmoncb/v23y1991i2p206-23.html