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India's Debt Dilemma[§]

ABSTRACT India was an outlier on fiscal outcomes pre-pandemic, before drifting further in the high debt direction during COVID. High levels of debt limit the resources available for other priorities such as health, education and climate change abatement. At the same time, there is no immediate crisis of debt sustainability: institutional factors limit rollover risk, and interest rates have not risen with additional debt issuance. But financial stability and sustainability risks may arise in the future, and lack of resources to meet pressing needs is a drag on growth. Consolidation would require lower primary deficits achieved through tax revenue generation and privatization, all while protecting and prospectively increasing capital spending. Contingent liabilities pose risks to the public finances of the States and should be minimized by fiscal-management reforms. As their debt manager, the RBI should allow States to face the market interest rates warranted by current and projected debt levels. Financial Commissions should be strengthened so as to provide stronger incentives for prudence.

Keywords: *Debt Management, Debt Sustainability, Finance Commission, Fiscal Deficit, Public Debt*

JEL Classification: *H6, H7, H61, H63*

1. Introduction

India's public finances paint a mixed picture. The country was an outlier in fiscal outcomes before the pandemic. Its deficits and debts were among the highest in the developing world; its interest payment/government

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revenue and interest payment/GDP ratios were large. The pandemic reinforced these trends. At their peak in 2020-21, the debt and deficit stood at 89 and 13 percent of GDP, respectively. (Contingent liabilities—the present value of the prospective stock—are estimated at an additional 5 per cent of GDP). With the recovery of nominal GDP, the country's debt and deficit ratios have fallen from these multi-decade highs. But at 84 and 9 percent, they are still high relative to other emerging market and middle-income countries, where they average 60 and 5 percent, respectively.[1]

In this paper we assess the sustainability of the public finances, with a focus on the next five years.

A first criterion for sustainability is whether the debt ratio will remain stable. We confirm, under reasonable assumptions, that the debt ratio will remain broadly stable. This stability rests on the assumption of a largely unchanged primary budget deficit and a favorable growth-rate-interest-rate differential, the latter reflecting India's positive growth prospects and also institutional factors limiting upward pressure on interest rates. The institutional factors in question include a captive market for public debt among state banks, private banks, insurance companies and provident funds. Together with household savings, these have enabled the government to fund its deficits without undue pressure on borrowing costs.

A second for sustainability is whether there is significant rollover risk. We find that these same institutional factors, together with the currency composition and maturity of the debt, also limit rollover risk. In this respect our conclusions differ from those of Blanchard, Felman and Subramanian (2021).

Counterbalancing these happy conclusions is the unhappy fact that India is unlikely to significantly reduce its debt ratio in the absence of extensive and politically-fraught reforms. Smaller primary budget deficits will be difficult to achieve given pressure for social and infrastructure spending, including on climate-change abatement and adaptation and the green transition, and the difficulty of boosting tax revenues. Faster growth rates or lower interest rates are pleasant to imagine but difficult to achieve.

What are the costs of living with high public debt? First, interest payments will continue to absorb a significant share of the government's resources, limiting their availability for other economic and social priorities. Second, available fiscal resources leave no room for meeting emerging priorities, including health, education, and climate change adaptation. Third, the level of indebtedness limits scope for responding to negative shocks, such as declining rates of domestic or global growth. Fourth, having banks hold large amounts of government debt leaves them with fewer resources for lending to small

1. These numbers and the categorization of countries, 95 in number, as "emerging-market and middle income" are from the IMF's *Fiscal Monitor*, April 2023. The fiscal year runs from April to March. For example, fiscal year 2023-24 refers to April 1, 2023-March 31, 2024.

and medium-size enterprises (SMEs) and for otherwise relaxing financial constraints on economic growth. Fifth, feeding public debt to the banks creates the potential for financial stability risks; this is the "diabolic loop" seen a decade ago in Europe and more recently in the case of the Silicon Valley Bank. Sixth, and relatedly, with further financial liberalization and reform, the government comes to rely less on captive domestic institutions and more on foreign institutional investors. Rollover risk may be limited now, but it may rise in the future with this change in investor composition.

Section 2 summarizes trends in India's public finances, while Section 3 describes salient features of debt composition. Section 4 presents a debt sustainability analysis, first for the General Government and then separately for the Centre and the States. The situation of the States turns out to be important. While the debt ratio of the Central Government remains stable under our baseline scenario, those of the States show a tendency to rise. There is very considerable heterogeneity in the fiscal position of different States, with certain problem cases contributing disproportionately to the level and rise in the aggregate State debt-to-GDP ratio. Strikingly, there is no evidence that more heavily indebted States with more troubled fiscal prospects face higher borrowing costs. They feel no market discipline to rein in their excesses, in other words. We discuss the policies and institutional factors responsible for this anomaly.

Section 5 turns next to past episodes of debt consolidation, and asks why major episodes of consolidation have not been sustained. In Section 6, we assess the implications and risks of the current levels of debt. Section 7 concludes.

2. Debt and Deficits in India

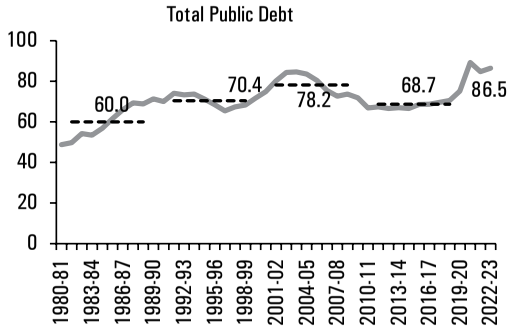
Public debt has been high in India and has increased markedly over the past four decades (Figure 1). Having averaged 60 percent of GDP in the 1980s, it rose to 70 percent in the 1990s and 80 percent in the 2000s. From these highs, it declined to 69 percent of GDP the following decade, before increasing to nearly 90 percent of GDP in 2020-21 in the wake of COVID and hovering at 85-87 percent for the last two years.

The budget deficit has fluctuated at around 7-8 percent of GDP, as shown in Figure 1. It rose to an unprecedented 13.1 percent of GDP in 2020-21. This increase was due mainly to higher expenditure, and to a lesser extent due to slower revenue growth and contraction of nominal GDP. This unprecedented deficit resulted in a commensurately large increase in public debt to nearly 90 percent of GDP, surpassing the previous peak of about 83 percent in the early 2000s.

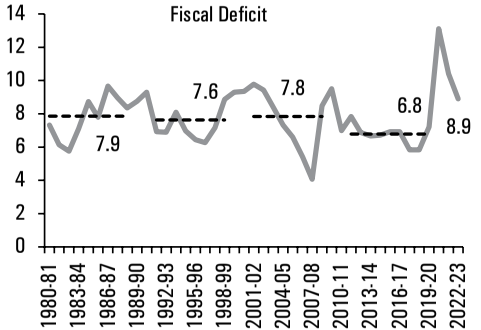
Interest payments have averaged 5 percent of GDP for three decades. They rose from 11.5 percent of total revenue in 1980-81 to fully a quarter of total revenue in 2022-23. Government spends more on interest than on education

FIGURE 1. General Government (Federal and States) Debt and Fiscal Indicators

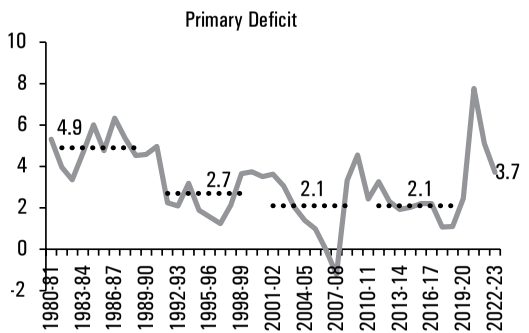
A. Total Public Debt*
Percent of GDP



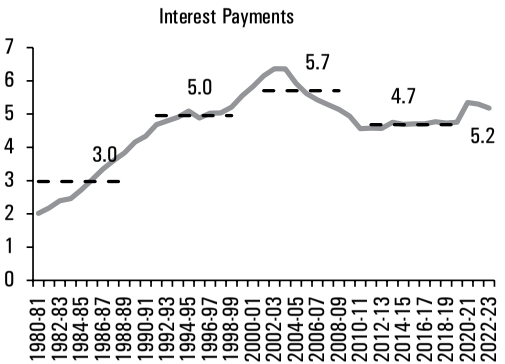
B. Fiscal Deficit
Percent of GDP



C. Primary Deficit
Percent of GDP



D. Interest Payments
Percent of GDP



Source: CEIC (Compiled from Reserve Bank of India). Dashed horizontal lines are decadal averages from 1980-81 to 1989-90, 1990-91 to 1999-2000, 2000-01 to 2009-10, and 2010-11 to 2019-20, respectively.

Note: * Total Public Debt in India includes debt issued and other liabilities in Public Account consisting of the National Small Saving Fund (NSSF), Provident Fund, Deposit and Reserve funds, securities issued to finance subsidies on oil, food, and fertilizers, etc.

and health combined. Interest payments exceed total capital expenditure. The General Government's primary deficit (deficit net of the aforementioned interest payments) averaged a bit over 2 percent of GDP in the two decades preceding COVID. The General Government has, in fact, run a primary surplus only once in the past 40 years, in 2007-08. Since then, there have been two sharp increases in the primary deficit, to 4.6 percent of GDP in 2009-10 and 7.8 percent of GDP in 2020-21.[2]

Revenues have increased only slowly compared to the increase in other large emerging markets (Figure 2). Between 1980-81 and 2022-23, tax revenue rose by 3.3 percentage points of GDP, reflecting tax buoyancy (elasticity of revenues with respect to income) only slightly above 1. Non-tax revenue, which includes interest and dividends, has similarly remained stagnant as a proportion to GDP. The elasticity of revenues with respect to income is higher in other large middle-income economies, with the sole exception of Indonesia.[3] In comparison, the expenditure-to-GDP ratio has been close to the median of other emerging countries. This gap has resulted in a perennially large, and even increasing, budget deficit compared to other emerging markets.

Expenditure overall as a share of GDP has remained broadly stable for two decades, the only large increase occurring during COVID. Nearly 85 percent has been revenue or committed expenditures.[4] Capital spending has been low, rising modestly from 2.3 percent of GDP in 1994-95 to 3.6 percent of GDP by 2011-12, and hovering close to that level over the period 2020-21. It then rose by 1.4 percentage points to 5.0 percent of GDP in the past two years, reflecting the government's infrastructure push.

Interest payments are high by global and emerging market standards (Figure 3). The IMF (2023) projects a further rise in the interest-payments-to-GDP ratio over the 2023-27 period as global rates trend upward.

While India's debt ratio is comparable to or lower than in the advanced economies, this is scant comfort. Advanced-country governments enjoy lower interest rates and consequently have lower interest-payment-to-GDP ratios. Debt-to-GDP ratios of advanced economies averaged 112 percent in 2022, whereas interest payments averaged 1.5 percent of GDP. In contrast, India pays as much as 5 percent of GDP in interest on debt.

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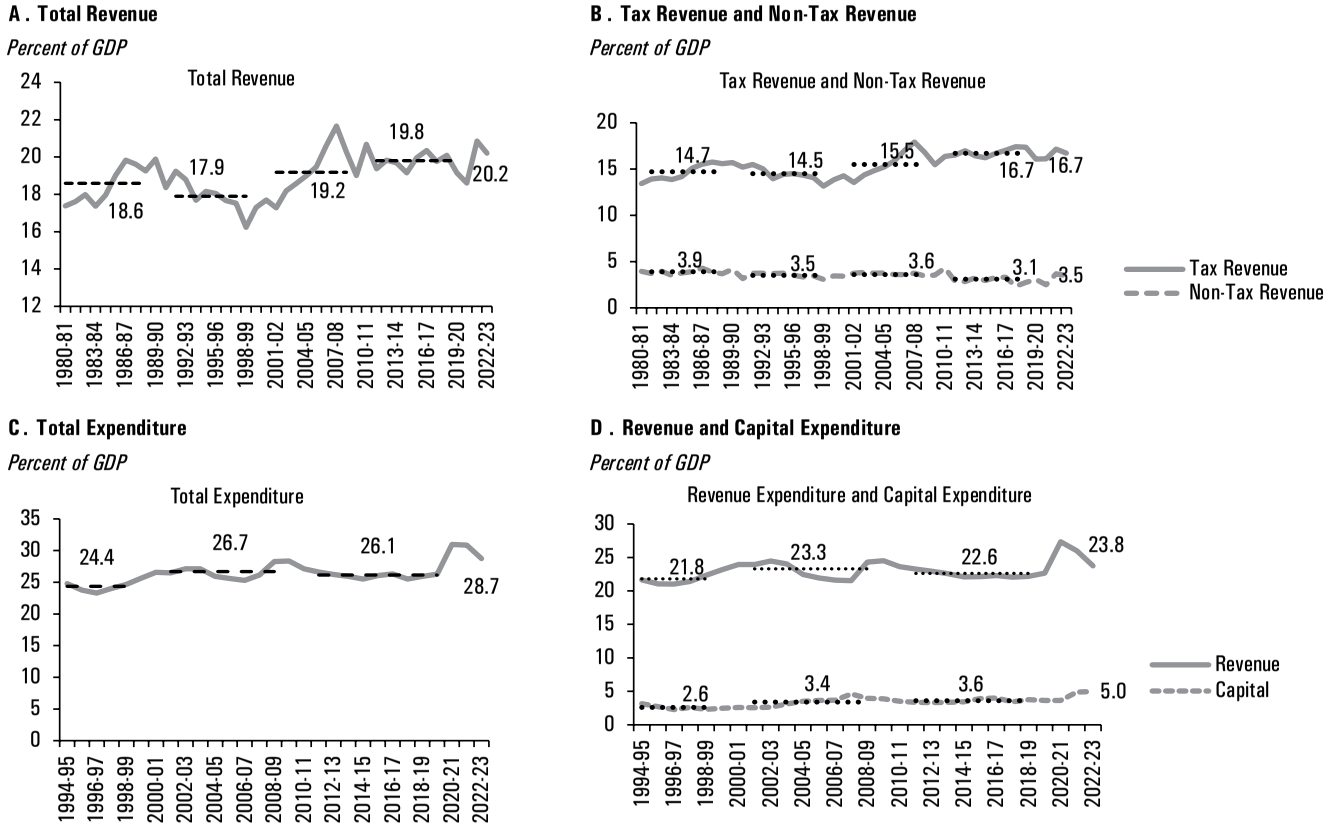
2. Subsequently, the primary deficit declined to 3.7 percent in 2022-23.

3. Whereas direct tax collection has increased in proportion to GDP, indirect taxes as a proportion of GDP have declined, indicating a tax buoyancy of more than one for direct taxes, and less than one for indirect taxes (Appendix A).

4. Revenue expenditures are expenditures incurred for purposes other than the creation of physical or financial assets. They are incurred for the normal functioning of the government departments, interest payments, and grants to State governments and other parties.

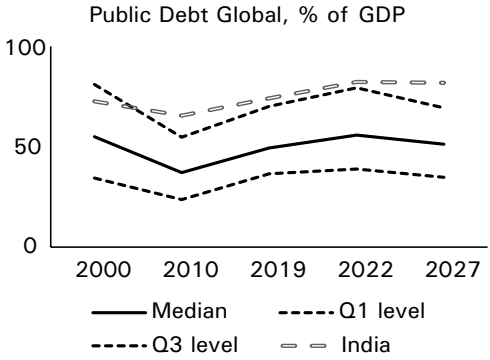
FIGURE 2. General Government (Federal and States) Revenue and Expenditure



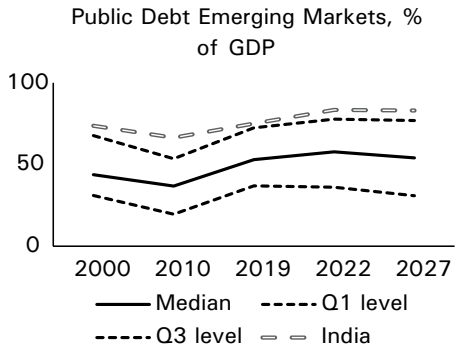
Source: CEIC (Compiled from Reserve Bank of India). Dashed horizontal lines are decadal averages from 1980-81 to 1989-90, 1990-91 to 1999-2000, 2000-01 to 2009-10, and 2010-11 to 2019-20, respectively.

FIGURE 3. Comparing India's Fiscal Indicators with Other Country Averages (General Government)

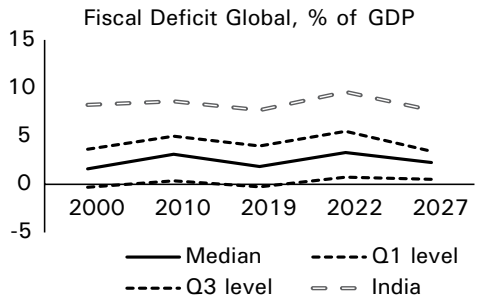
A. General Government Debt, Global



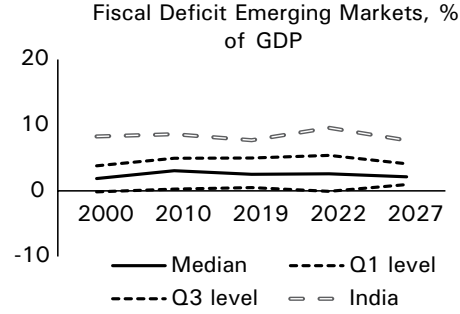
B. General Government Debt, Emerging Markets



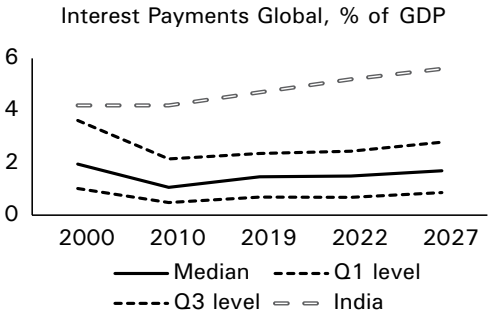
C. Fiscal Deficit, Global



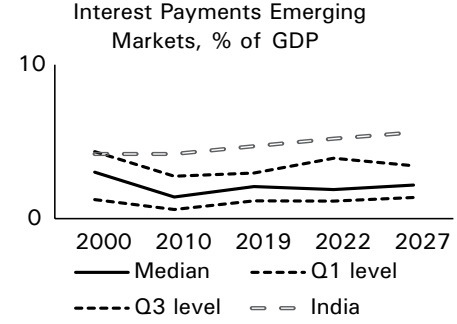
D. Fiscal Deficit, Emerging Markets



E. Interest Payments, Global



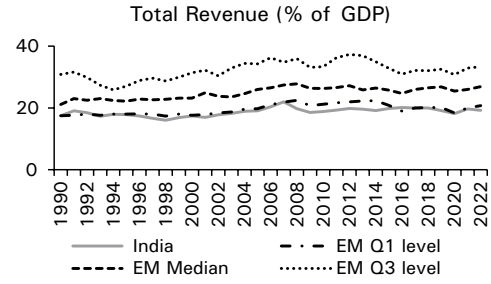
F. Interest Payments, Emerging Markets



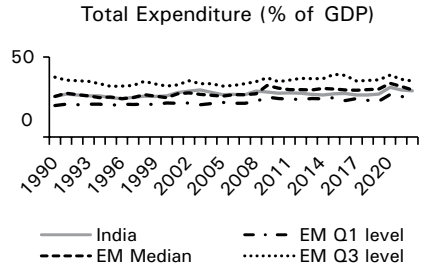
Source: Fiscal Monitor Database, IMF April 2023. Figures show the median and interquartile range of the respective variables and respective country or country groups.

FIGURE 4. Comparing India's Fiscal Indicators with Emerging Market (EM) Averages, General Government

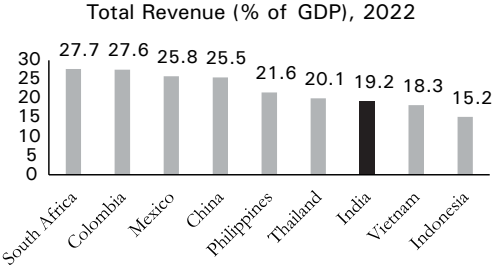
A. Total Revenue to GDP (EM Median, Interquartile Range and India)



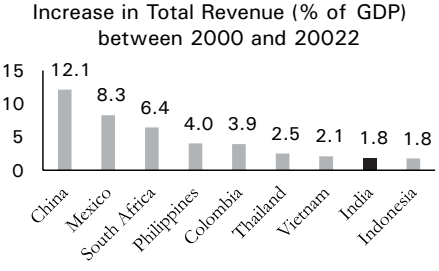
B. Total Expenditure to GDP (EM Median, Interquartile Range and India)



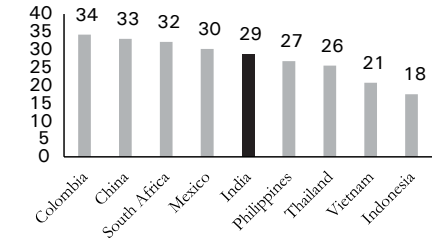
C. Total Revenue to GDP as of 2022 (select EMs)



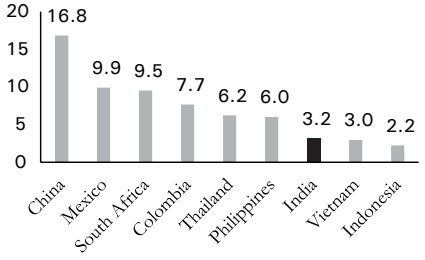
D. Increase in Total Revenue to GDP between 2000 and 2022



E. Total Expenditure to GDP as of 2022 (select EMs)



F. Increase in Total Expenditure to GDP between 2000 and 2022



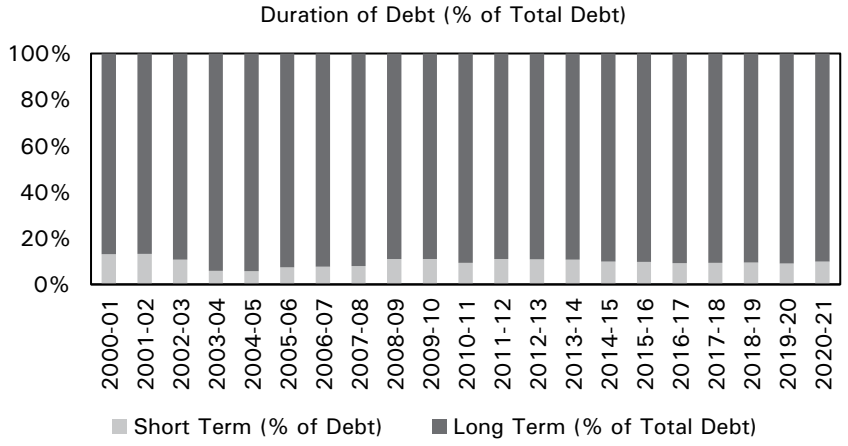
Source: Fiscal Monitor, IMF April 2023. Figures 4A and 4B show median and interquartile range of Emerging Market and Middle-Income Economies (83 countries) and India. Data for India is for fiscal years.

Figure 4 shows that the revenue-to-GDP ratio is below that of most other emerging markets (see also Rao 2018). Not only is the level below that in other countries, but India has one of the slowest rates of increase over the last 20 years. In contrast, the public-expenditure-to-GDP ratio is not atypical and, if anything, has increased more slowly. India's deficit is evidently more a problem of low revenues than one of high expenditure.[5]

3. Debt Composition

Next, we consider the duration, currency composition and ownership of the debt. The upshot of this analysis is that India faces limited rollover or run risk, although this could rise in the future.[6]

FIGURE 5. Duration of Debt (General Government)

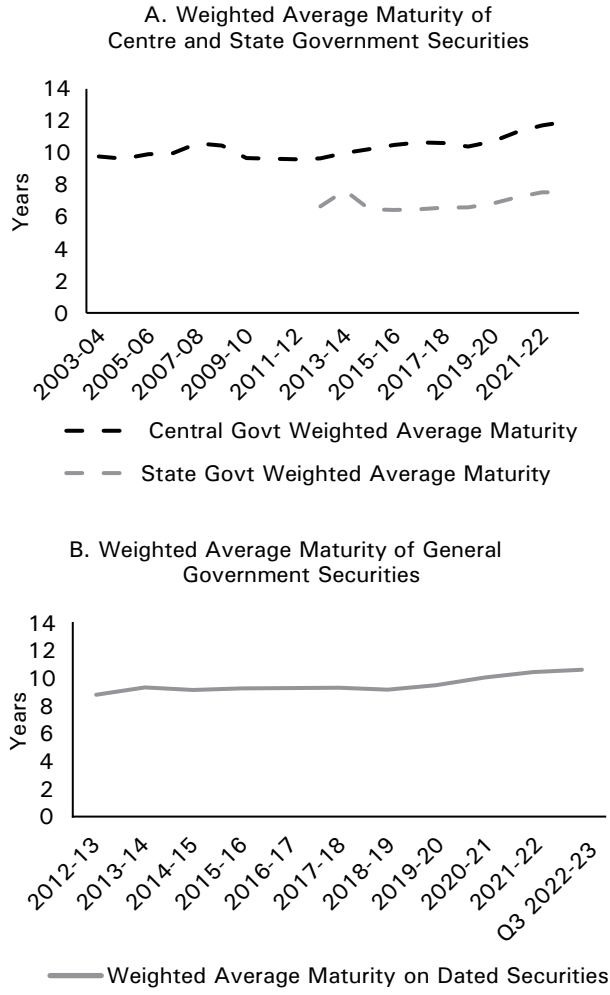


Source: Data for short-term debt for 2000-01 to 2009-10 are from Status Paper, Ministry of Finance, September 2016; and then from Status Paper on Government Debt, Ministry of Finance, April 2022. Long-term debt is calculated as total minus short-term debt.

5. We return to this point in Section 5.

6. As noted in the introduction, this conclusion that rollover risk is limited runs contrary to certain other recent studies. Consistent with our view, the RBI in its biannual Financial Stability Reports does not flag the holding of government securities, or changes in the interest rate, as significant risks to Indian banks.

FIGURE 6. Weighted Average Maturity of Outstanding Debt



Source: For the Centre, Status Papers (April 2022 and September 2016), Ministry of Finance, from 2003-04 to 2020-21, Public Debt Management Quarterly Report, RBI (March 2023) for 2021-22 and Q3 2022-23; For State governments: Monthly Reviews of the Economy, Clearing Corporation of India (CCIL). GDP Deflator is from the *Economic & Political Weekly* Research Foundation (EPWRF).

Note: We use the shares of the Centre and States in total debt as weights to calculate weighted average maturity on the General Government outstanding stock, for Q3 2022-23, the shares are assumed to be the same as those for 2021-22. For Q3 2022-23, the weighted average maturity is the average of the weighted average maturities for the period Q1-Q3 2022-23.

Nearly 90 percent of General Government debt is long-term, as measured by residual maturity (Figure 5).[7] There has been a concerted effort to reduce rollover risk by issuing long-tenor securities. As a result, the weighted average maturity periods for both Central and State government loans have been increasing (Figure 6).

Tenors vary. The share of Central Government debt with a maturity greater than 20 years rose from 13 to 20 percent between 2012 and 2021. In the two most recent years, a majority of debt issued by the Central Government has had a maturity of 14 years or longer, and 30 percent has had a 30- or 40-year maturity.

State debt has a lower average maturity. As of March 2022, about 5 percent of the outstanding State Development Loans (SDLs) had a maturity of less than a year. Maturity periods for 30 percent of SDLs were 1-5 years, for 45 percent, 5-10 years. The remaining 20 percent had a maturity of 10 years or longer (of which a small proportion had a maturity of more than 20 years).[8] The market for long-term debt is thin, and the term premium for all but the highest quality borrowers (insurance companies and the like) can be significant. The States seek to minimize interest costs; they, therefore, issue shorter-term debt while waiting for the market in longer-term debt to develop.

While the average maturity of public debt has risen, yields have declined, albeit slightly. The General Government weighted average coupon fell from 8 percent in 2011-12 to 7.3 percent in 2022-23 (Figure 7). The average yield on Central Government debt has been slightly lower than that on State debt.

Strikingly, bond yields in India have not moved with the level of indebtedness or even with inflation. This is true at both the Central and State Government levels. In particular, the interest rate at which different States raise their debts does not vary significantly with the level of indebtedness, primary deficit, or the rate of economic growth.[9] Rangarajan and Prasad (2013) suggest that this reflects an implicit guarantee from the Central Government, while Mishra and Patel (2022) point to the fact that the largest investors in government bonds (public sector banks, insurance companies and provident funds) are owned by the Central Government, and as such are not profit-maximizing entities. These institutional investors are all required to hold government bonds as a statutory requirement (see Appendix D).

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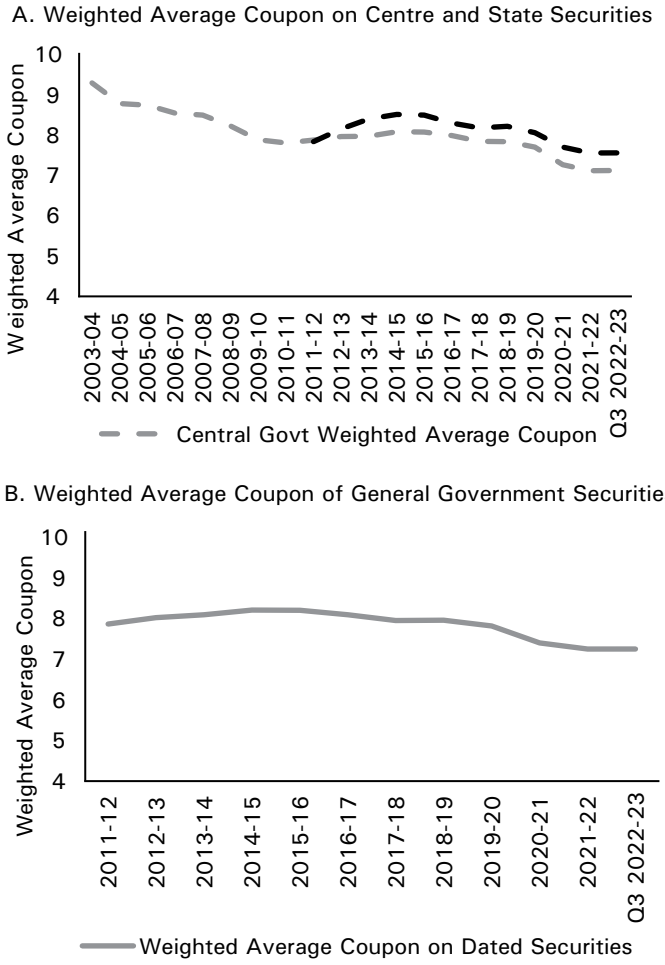
7. Short-term debt of the Centre includes 14-day intermediary treasury bills, 91-day, 182-day, and 364-day treasury bills, dated securities maturing in the ensuing year, and external debt with residual maturity of less than one year. For the States, short-term debt includes market loans maturing within the next year, loans to the Centre due in the ensuing year, and short-term borrowings from the RBI through Ways and Means Advances (WMA).

8. According to the RBI's Report on State Finances (January 2023), "Though 63.3 per cent of the outstanding State government securities is in the residual maturity bucket of five years and above, redemption pressure is expected to remain high till 2030-31."

9. The calculations are based on the average nominal weighted average yield on new issues.

In addition, the Reserve Bank of India (RBI), by carefully scheduling the calendar of borrowing and coaxing government-owned investors to hold the bonds of the States, ensures that interest rates on State debt remain in a tight range. Evidently, it does not want perceptions of debt distress or unsustainability of the debts of some States to infect others. We are not convinced of the advisability of this policy; we will have more to say about it below.

FIGURE 7. Cost of Debt (Outstanding Debt)

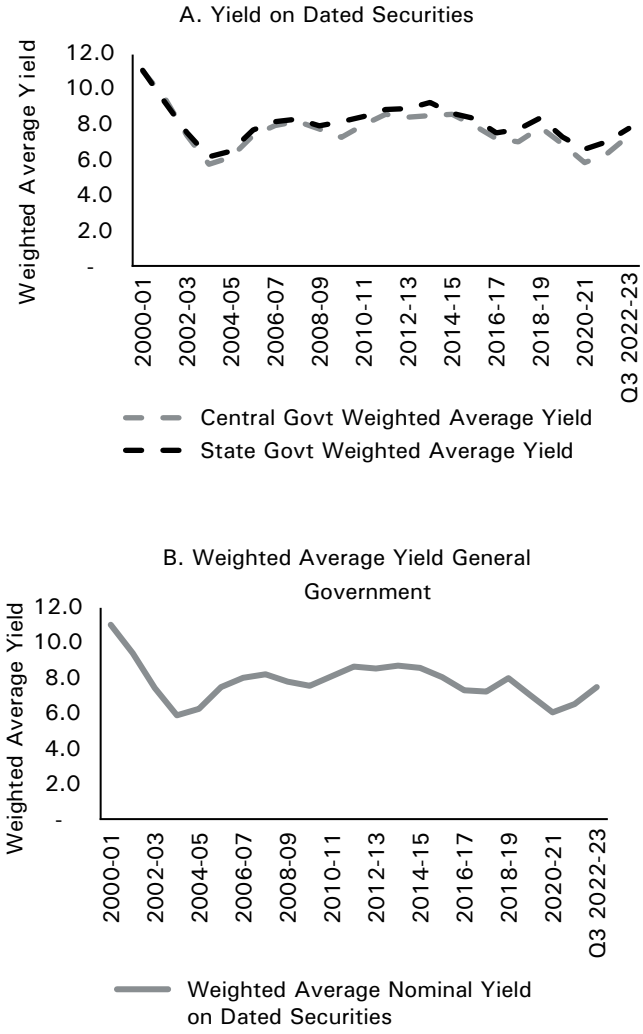


Source: For the Centre, Nominal WAC: Status Papers (April 2022 and September 2016), Ministry of Finance, from 2003-04 to 2020-21, Public Debt Management Quarterly Report (March 2023) for 2021-22 and Q3 2022-23. For State Nominal WAC: Monthly Review of the Economy, Clearing Corporation of India (CCIL).

Note: The shares of the Centre and States in total debt are used as weights to calculate the weighted average coupon on General Government outstanding stock.

The average yield on new issuances has also declined over time, from about 11 percent in 2000-01 to about 7.5 percent currently (Figure 8).

FIGURE 8. Cost of Debt (New Issues in the Year)

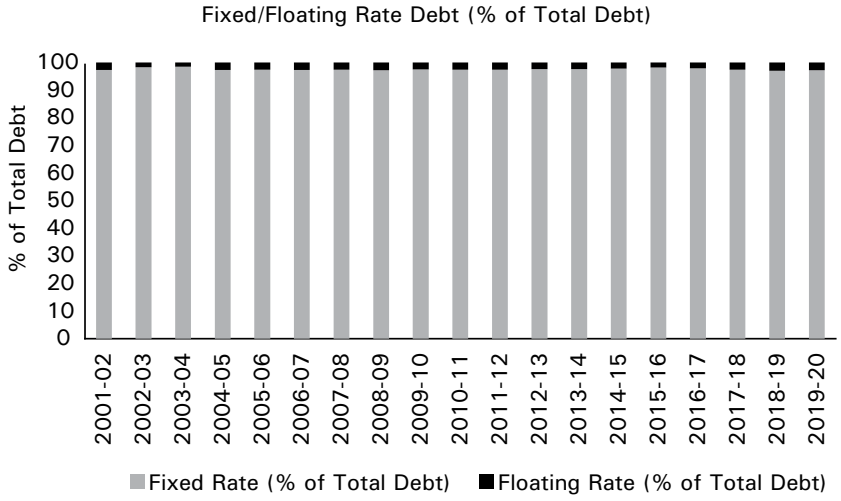


Source: For the Centre and State WAY, RBI (till 2020-21). For the Centre, Public Debt Management Quarterly Report (March 2023) for 2021-22 and Q3 2022-23; and for the State: State Finances Report (2023), RBI, for 2021-22 and 2022-23. Yield is for primary issues in the year indicated.

Note: Shares of the Centre and States in total debt are used as weights to calculate the Weighted Average Yield (WAY) on General Government primary issues (new issues in the year).

As Figure 9 shows, less than 4 percent of General Government debt in 2020-21 is offered at floating rates. (Only the Central Government offers floating debt.[10]) Thus, the country's debt portfolio is largely insulated from short-run interest rate volatility.

FIGURE 9. Fixed and Floating Rate Debt



Source: Data for years 2000-01 to 2009-10 is from the Status Paper (September 2016); data for 2010-11 to 2020-21 are from the Status Paper (April 2022), Ministry of Finance.

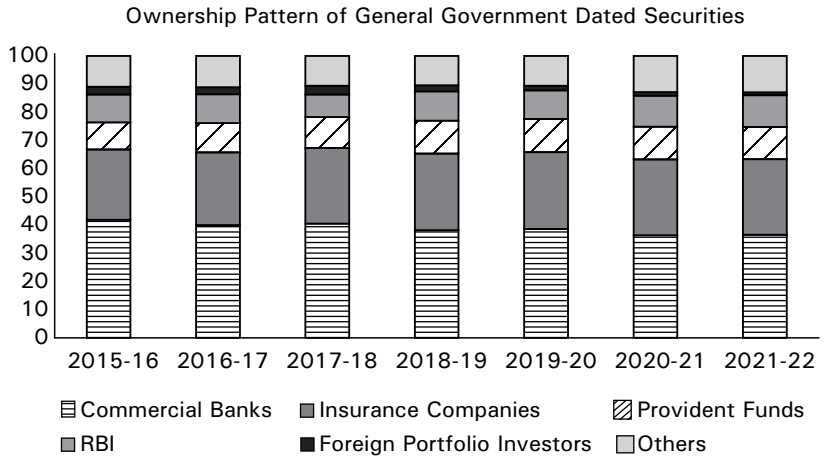
Figure 10 shows the breakdown of General Government debt securities by owner. In 2015-16, about 42 percent of General Government debt was owned by commercial banks. The bank share then dropped to 37 percent in 2021-22, as various regulatory requirements mandating their holding government bonds were relaxed (see below, including Appendix D). The share held by foreign portfolio investors is very low; these investors owned about 3 percent of public debt securities in 2015-16, after which their share similarly dropped to 1 percent in 2021-22. Correspondingly, the shares of insurance companies, provident funds and the RBI increased over time.

In 2000-01, about 13.5 percent of Central Government debt was issued externally. Since then there has been a steady decline in the share of external debt, which stood at just 3.7 percent in 2021-22 (Figure 11). The remainder is long-term instruments, concessional, and owed to multilateral and bilateral

10. A floating rate bond is based on a benchmark rate, such as the repo rate, reverse repo rate, treasury bill yield, or saving schemes interest rates, plus a fixed spread that is determined at the time of first issuance.

investors (amounting to 3 percent of the total debt).[11] Holdings of foreign institutional investors are just 1 percent of the total debt. Foreign banks hold negligible quantities of Indian government debt.

FIGURE 10. Ownership of Debt



Source: Public Debt Statistics, RBI.

Note: Provident funds are retirement funds run by the government. Others include Co-operative Banks, Non-Bank PDs, Mutual Funds, Corporates, Financial Institutions, and Others.

As is to be expected, most of this externally-held debt is denominated in foreign currency. Debt denominated in foreign currency dropped from about 10 percent of the total in 2002-03 to 4.3 percent in 2020-21 (Figure 11). Consequently, the debt portfolio is largely insulated from currency risk.

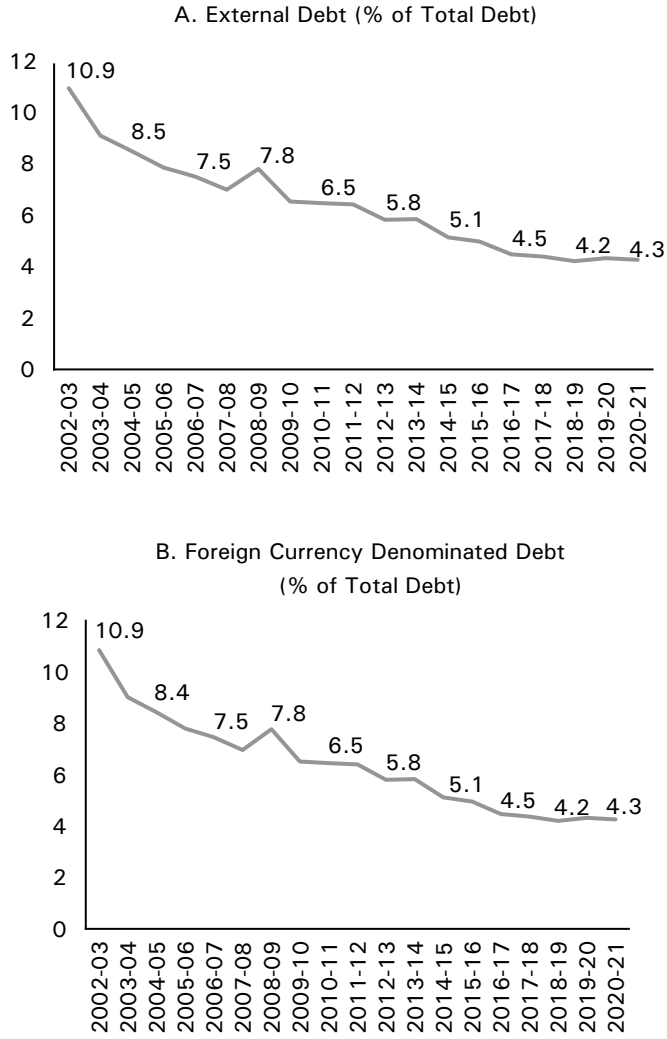
4. Debt Sustainability

We now use extrapolations of the debt-to-GDP ratio as a way of thinking about debt sustainability. We use Equation 1 to project the trajectory of public debt.[12]

11. In 2003-04, IDA was the largest source of multilateral external debt. Since then, its share has dropped by half (from 54 percent of the external debt to 26 percent in 2021), with a corresponding increase in debt from IBRD and ADB, which contributed to 16 percent and 19 percent of the external debt, respectively, as of 2020-21. Among the bilateral sources, Japan has consistently been the largest contributor, accounting for 24 percent of the external debt in 2020-21, followed by Germany and Russia.

12. The exercise is based on the assumption that g, r, and pd are exogenous, that is, they are not impacted by the level of debt.

FIGURE 11. External Debt (% of Total Debt), General Government



Source: Status Paper on Government Debt (September 2016), Ministry of Finance, for the data for 2002-03, and Status Paper on Government Debt (April 2022), Ministry of Finance, for the data from 2003-04 to 2020-21.

Note: External debt is debt to foreign lenders: banks, non-bank financial institutions, international organizations and foreign governments, among others.

$$\Delta b_t = \frac{b_{t-1}(r_t - g_t)}{1 + g_t} + pd_t \quad (1)$$

Here b_t is the debt-to-GDP ratio, pd_t is the primary-deficit-to-GDP ratio (deficit net of interest payment), g_t is growth of real GDP, and r_t is the real

interest rate on public debt; all in year t. Δb_t is the change in debt-to-GDP ratio between t and t-1.

4.1. General Government

We consider a baseline scenario and several additional scenarios. As the baseline, real GDP growth, the real interest rate, and the primary deficit will be at the same levels for the next five years as their respective averages from 2013-14 to 2022-23 (Table 2) – that is, 5.7 percent, 2.8 percent and 2.9 percent, respectively.[13] This yields an annual increment to the debt-to-GDP ratio of 0.5 percentage points a year, implying a cumulative increment of 2.2 percentage points over five years. General Government debt is projected to reach 88.7 percent of GDP in 2027-28 (Table 2).

The second scenario assumes faster GDP growth. Our third scenario then adds a favorable change of half a standard deviation in the primary deficit from the average level over the past decade for each variable (Table 3). Thus, we assume GDP growth of 7.9 percent a year, or a primary deficit of 1.9 percent, respectively.

In this second scenario, the debt-to-GDP ratio declines by 1.2 percentage points a year, reaching 81.0 percent in 2027-28. In the third scenario, it declines by 0.5 percentage points a year, reaching 83.9 percent in 2027-28.[14] Thus, even under optimistic assumptions, the debt-to-GDP ratio will remain high relative to comparator countries.

The debt ratio will also remain high relative to India's Fiscal Responsibility and Budget Management (FRBM) targets, which foresee a debt-to-GDP ratio of no more than 60 percent.[15] But adherence to these targets is not mandatory. There is no formal mechanism to monitor compliance, and there are no penalties for breaching the targets. It follows that governments have not been able to adhere to these limits on deficits and debts.

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13. For comparison, in 2022-23 growth was 7.0 percent, the real interest rate was -1.0 percent, and the primary deficit was 3.7 percent.

14. We obtain similar pathways for public debt under most other reasonable scenarios.

15. The Sarma Committee on Fiscal Responsibility Legislation was set up in 2000 to recommend fiscal reforms. After several rounds of reviews and modifications, its deliberations led to the formulation of the Fiscal Responsibility and Budget Management Act. In 2016, a committee under N.K. Singh was then tasked with suggesting changes in the Act. It suggested using General Government debt as the primary target for fiscal policy, with a General Government debt-GDP target of 60 percent to be achieved by 2023 (40 percent for the Centre and percent for the States). Accordingly, the Finance Act of 2018 included the following amendments to the FRBM Act. First, the fiscal deficit should be reduced to 3 percent of GDP by 2020-21. Second, the revenue deficit (the difference between recurrent expenditure and recurrent earnings) and effective revenue deficit (revenue deficit minus any grants that the States received from the Centre for capital expenditure) were no longer targeted. Third, General Government debt again was not to exceed 60 percent of GDP, while Central Government debt was not to exceed 40 percent of GDP, but now by the end of 2024-2025.

TABLE 1. Average Values and Standard Deviations of the Key Parameters for General Government

	Ten-year Average (2013-14 to 2022-23)		*Five-year Average (2018-19 to 2022-23)*	
	Mean	*Std dev*	*Mean*	*Std dev*
Nominal GDP growth (γ)	10.7	4.3	4.1	5.9
Deflator growth (π)	4.7	2.3	5.6	2.7
Real GDP growth (g)	5.7	5.3	10.0	7.9
Nominal interest rate (i)	7.5	0.8	7.0	0.7
Real interest rate (r)	2.8	2.6	1.4	2.9
Primary deficit (pd)	2.9	2.1	4.0	2.6
Growth-interest differential (g-r)	3.0	4.8	2.7	7.2

Source: CEIC (Compiled from Reserve Bank of India).
Note: Real interest rate has been calculated as nominal interest rate minus deflator growth.

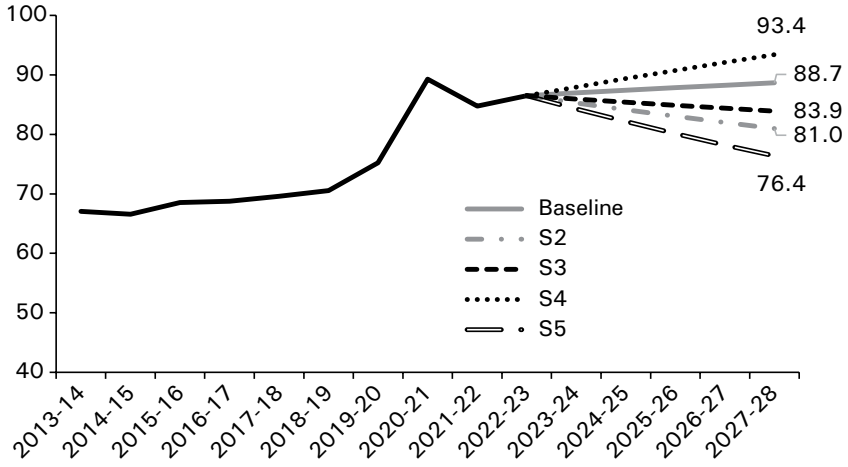
TABLE 2. Evolution of General Government Debt-to-GDP Ratio

Scenarios	*Scenario Description*	*Debt Level in 2022-23 (b_{t-1})*	*Primary Deficit (pd)*	*Real GDP Growth (g)*	*Real Interest Rate (r)*	*Change in Debt in First Year (Δb_t)*	*Cumulative Change in Debt in Next Five Years*
Baseline (S1)	Baseline: Past 10-year averages	86.5	2.9	5.7	2.8	0.5	2.2
S2	Higher real GDP growth rate	86.5	2.9	7.9	2.8	-1.2	-5.5
S3	Lower primary deficit	86.5	1.9	5.7	2.8	-0.5	-2.6
S4	S1 plus contingent liabilities absorbed (1 percentage point of GDP) each year	86.5	2.9	5.7	2.8	1.5	6.9
S5	S1 with higher real GDP growth rate and Lower Primary Deficit	86.5	1.9	7.9	2.8	-2.2	-10.1

Source: CEIC, CAG, and authors' calculations.

Note: Projections start from 2023-24. For 2022-23, estimates of the level of debt are from the *Economic Survey*.

FIGURE 12. Evolution of General Government Debt-to-GDP Ratio under Different Scenarios



Source: CEIC and authors' calculations.

Note: The estimate of debt for 2022-23 has been taken from Chapter 3 of *Economic Survey 2022-23.*

The RBI, in its reports on State finances, and the IMF, in its Article IV Reports, warn of the impact of contingent liabilities on debt sustainability. The RBI (2023) observes that "State government guarantees increased sharply by end-March 2021, which has implications for their debt sustainability." The IMF (2022a) reports that "[f]iscal risks reflect higher macroeconomic uncertainty, particularly from the external sector, and contingent liabilities from public sector banks and electricity generation corporations." Past contingent liabilities have been on account of Air India, public sector banks, electricity distribution companies, public-private partnerships (PPPs) in infrastructure provision, and other State-owned Enterprises (SOEs).[16] They materialize when governments assume the debts of companies, rescuing and recapitalizing them. Blanchard et al. (2021) apply Equation 1 to historical data for India and take the difference between actual and implied changes as the realization of contingent liabilities. They find these to have been substantial. Alternatively, the Office of the Comptroller and Auditor General and RBI have attempted to estimate contingent liabilities directly; as of March 2021, they put these at 2.5 percent of GDP for the Central Government and 3.7 percent of GDP for the States (Figure 15).

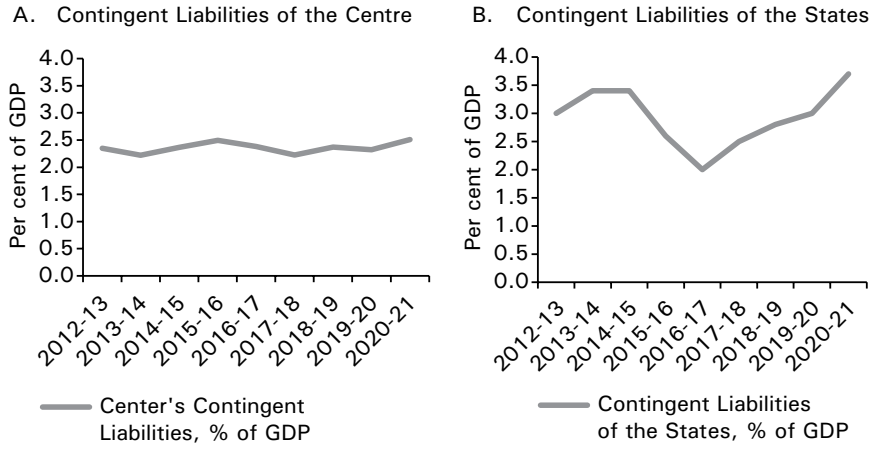
We assume that contingent liabilities will be taken onto the budget at a rate of one percentage point of GDP each year for the next five years. Unsurprisingly,

16. Of these, liabilities associated with States' loss-making electricity generation and distribution companies are undoubtedly the most important (Barnwal and Ryan 2023).

this adds another 6.9 percentage points of GDP to the debt, taking it above 93 percent of GDP under baseline assumptions.[17]

The bottom line is that even under an exceptionally favorable scenario, General Government debt to GDP is unlikely to decline below 80 percent on current policies. And less benign scenarios are possible.

FIGURE 13. Contingent Liabilities



Source: Financial Audit Reports on Account of Union Government, CAG, Union Budget Statements, and RBI.

TABLE 3. GDP-Growth-Rate-Interest-Rate Differential and Accumulation of Public Debt

	Average g-r	*Average Primary Deficit*	*Debt Level in 1981-82*	*Debt Level in 2019-20*	*Change in Debt-to-GDP*
1981-82 to 2019-20	1.9	2.9	48.8	75.7	26.9

Source: CEIC (Compiled from Reserve Bank of India).

4.2. Central Government

We use Equation 1 to project public debt for the Central Government in scenarios similar to those for General Government. In the baseline, for the next five years GDP growth, the real interest rate, and the primary deficit will be at the same levels as their respective averages from 2013-14 to 2022-23 (5.7 percent, 2.6 percent and 1.7 percent; see Table 4). This yields a stable debt-to-GDP ratio (actually, a small reduction of about 0.3 percentage points over the

17. Were such liabilities instead taken onto the budget at a rate of two percentage points of GDP, this would straightforwardly add 13 percentage points of GDP to the debt, and so forth.

period, as shown in Table 5). In the second scenario where we assume faster GDP growth, debt to GDP declines by a cumulative 5.6 percentage points. A similar reduction is projected in the third scenario of a lower primary deficit. The only scenario in which the debt of the Central Government is projected as rising relative to GDP is when contingent liabilities materialize.

TABLE 4. Average Values and Standard Deviations of the Key Parameters for Central Government

	Ten-year Average (2013-14 to 2022-23)		*Five-year Average (2018-19 to 2022-23)*	
	Mean	*Std dev*	*Mean*	*Std dev*
Nominal GDP growth (γ)	10.7	5.3	10.0	7.9
Deflator growth (π)	4.7	2.3	5.6	2.7
Real GDP growth (g)	5.7	4.3	4.1	5.9
Nominal interest rate (i)	7.3	0.9	6.8	0.8
Real interest rate (r)	2.6	2.6	1.2	3.0
Primary deficit (pd)	1.7	1.8	2.8	2.0
Growth-interest differential (g-r)	3.2	4.8	2.9	7.2

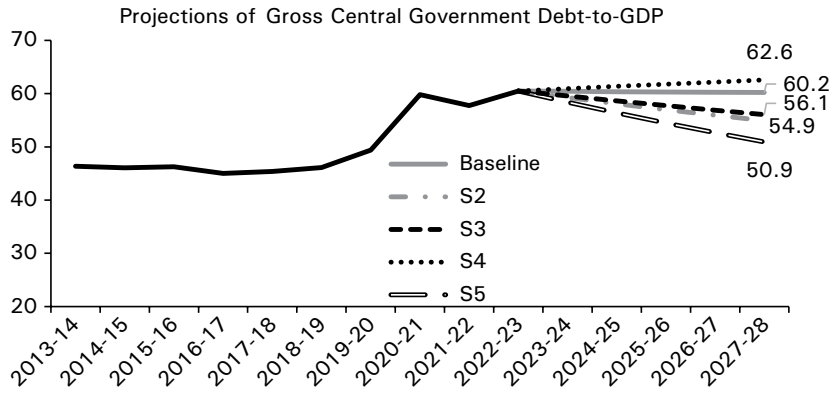
Source: CEIC (Compiled from Union Budget Documents and Ministry of Statistics and Programme Implementation).

TABLE 5. Evolution of Debt-to-GDP Ratios

Scenarios	*Scenario Description*	*Debt Level in 2022-23 (b_{t-1})*	*Primary Deficit (pd)*	*Real GDP Growth (g)*	*Real Interest Rate (r)*	*Change in Debt in First Year (Δb_t)*	*Cumulative Change in Debt in Next Five Years*
Baseline (S1)	Baseline: Past 10-year averages	60.5	1.7	5.7	2.6	-0.1	-0.3
S2	Higher real GDP growth rate	60.5	1.7	7.9	2.6	-1.2	-5.6
S3	Lower primary deficit	60.5	0.9	5.7	2.6	-0.9	-4.4
S4	B1 plus contingent liabilities absorbed (0.5 percentage point of GDP) each year	60.5	1.7	5.7	2.6	0.4	2.1
S5	Higher real GDP growth rate and lower primary deficit	60.5	0.9	7.9	2.6	-2.1	-9.6

Source: CEIC (Compiled from Union Budget Documents and Ministry of Statistics and Programme Implementation), CAG, and authors' calculations.

FIGURE 14. Evolution of Central Government Debt-to-GDP Ratio



Source: CEIC (Compiled from Union Budget Documents and Ministry of Statistics and Programme Implementation). Projections are for 2023-24 onwards.

State Governments

For purposes of projection, we take the debt-to-GDP ratio, growth of nominal GDP, rate of inflation, and growth of real GDP as identical for the Centre and the States. However, primary deficits and interest rates differ (Table 6). In most scenarios including in the baseline, the debt-to-GDP ratio of the States is projected to increase (Table 7). By implication, the projected increase in General Government debt can be primarily (even entirely) attributed to the increase in debt-to-GDP ratio of the States.

TABLE 6. Average Values and Standard Deviations of the Key Parameters for State Government

	Ten-year average (2013-14 to 2022-23)		*Five-year average (2018-19 to 2022-23)*	
	Mean	*Std dev*	*Mean*	*Std dev*
Nominal GDP growth (γ)	10.7	5.3	10.0	7.9
Deflator growth (π)	4.7	2.3	5.6	2.7
Real GDP growth (g)	5.7	4.3	4.1	5.9
Nominal interest rate (i)	7.8	0.8	7.4	0.7
Real interest rate (r)	3.1	2.5	1.8	2.9
Primary deficit (pd)	1.3	0.5	1.4	0.6
Growth-interest differential (g-r)	2.6	4.8	2.3	7.2

Source: Primary deficit data has been compiled from State Finances Report of the RBI (multiple years), GDP has been taken from CEIC (compiled from Ministry of Statistics and Programme Implementation), and interest rate has been taken from RBI's Database on Indian Economy.

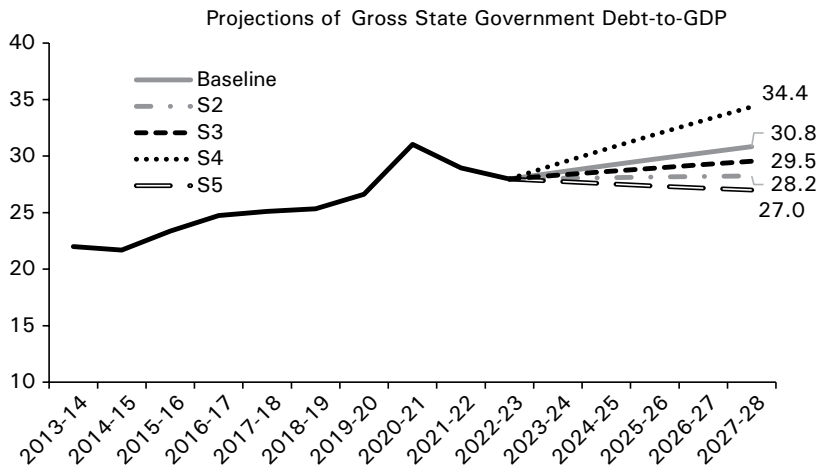
The contrast reflects higher interest rates. States pay about 0.5 percent higher interest than the Centre. As a result, *g-r* is less favorable. This is why the States' debt has accumulated faster than the Centre's despite lower primary deficits.

TABLE 7. Evolution of the State Government's Debt-to-GDP Ratios

Scenarios	*Scenario Description*	*Debt Level in 2022-23 (b_{t-1})*	*Primary Deficit (pd)*	*Real GDP Growth (g)*	*Real Interest Rate (r)*	*Change in Debt in First Year (Δb_t)*	*Cumulative Change in Debt in the Next Five Years*
Baseline (S1)	Baseline: Past 10-year averages	28.0	1.3	5.7	3.1	0.6	2.9
S2	Higher real GDP growth rate	28.0	1.3	7.9	3.1	0.1	0.3
S3	Lower primary deficit	28.0	1.0	5.7	3.1	0.3	1.6
S4	S1 plus contingent liabilities absorbed (0.5 percentage point of GDP) each year	28.0	1.3	5.7	3.1	1.3	6.4
S5	S1 with higher real GDP growth rate and lower primary deficit	28.0	1.0	7.9	3.1	-0.2	-1.0

Source: Primary deficit data has been compiled from State Finances Report RBI (multiple years), GDP has been taken from CEIC (compiled from Ministry of Statistics and Programme Implementation), interest rate has been taken from RBI's Database on Indian Economy, CAG (for Contingent Liabilities), and authors' calculations.

FIGURE 15. Evolution of the State Government's Debt-to-GDP Ratio



Source: State Finances Report, RBI (2013-14 up till 2022-23). State debt refers to Total Outstanding Liabilities of States including loans and advances from the Central Government. Projections are for 2023-24 onwards.

Some States such as Gujarat and Maharashtra have managed their public finances well.[18] Their debts have increased least since 2014-15, remaining below 25 percent of the State GDP (Table 8). At the other end of the spectrum are Punjab, Rajasthan, and Kerala, whose debts have increased, on average, by 12 percentage points of GDP since 2014-15 and exceeded 40 percent of State GDP at the end of 2020-21.

We compare some key variables across these two sets of States in Table 9. We define a dummy variable that equals 1 for States with an above-median increase in debt to GDP, and 0 for those below the median.[19] The results show that States with large increases in debt ratios had primary deficits and contingent liabilities more than twice those of States with small increases. Although they also had slightly slower GDP growth, this differential was not significant. Inflation and interest rates did not differ across the two classes of States. There is also a notable absence of interest rate differentials, as we noted in the introduction.[20]

TABLE 8. Levels and Changes in Debt Levels across the Indian States (Percent of Their Respective GDP)

States	*Debt-to- GDP in 2014-15 (1)*	*Debt-to-GDP in 2019-20 (2)*	*Debt-to-GDP in 2020-21 (3)*	*Change in Debt-to-GDP b/w 2019-20 and 2014-15 (4=2-1)*	*Change in Debt-to-GDP b/w 2020-21 and 2014-15 (5=3-1)*
Punjab	31.7	42.8	48.9	11.1	17.2
West Bengal	38.6	37.8	43	-0.8	4.4
Rajasthan	24.1	35.4	40.3	11.3	16.3
Kerala	28	32.9	40.3	4.9	12.3
Bihar	29	33.2	38.7	4.2	9.8
Andhra Pradesh	23.4	33.2	36.9	9.9	13.5
Uttar Pradesh	31	32.3	36.6	1.3	5.5
Jharkhand	20	30.5	36.3	10.4	16.3
Goa	29.5	30.2	35.2	0.7	5.7
Haryana	21.2	29.9	33.2	8.7	12
Tamil Nadu	17.3	26.5	31.5	9.2	14.2

18. In this section, we focus on the 18 largest Indian States. Erstwhile Special Category States and the Union Territories are not included.

19. Similar results are obtained if instead of comparing the States which are below and above the median, we compare the values of these variables for the top one-third of the States for the increase in debt-to-GDP ratio with the bottom one-third of the States.

20. Saggar et al. (2017) and Nath, Pawaskar and Shiraly (2019), similarly note the absence of any correlation across States between fiscal indicators, on the one hand, and interest rates, on the other.

States	*Debt-to- GDP in 2014-15 (1)*	*Debt-to-GDP in 2019-20 (2)*	*Debt-to-GDP in 2020-21 (3)*	*Change in Debt-to-GDP b/w 2019-20 and 2014-15 (4=2-1)*	*Change in Debt-to-GDP b/w 2020-21 and 2014-15 (5=3-1)*
Madhya Pradesh	22.7	22.8	30.2	0.1	7.6
Chhattisgarh	14.1	25	28.8	10.9	14.7
Telangana	14.4	23.7	28.8	9.4	14.4
Odisha	16.2	26.7	26.4	10.5	10.2
Karnataka	17.3	21	25.9	3.7	8.6
Gujarat	22	20.4	22.2	-1.6	0.2
Maharashtra	18.1	18.1	20.9	0	2.8

Source: State Finances Report, RBI.
Note: GDP refers to the GSDP figures of the respective States.

TABLE 9. Comparing States with a Large Increase in the Debt-to-GDP Ratios with Those with a Smaller Increase in the Debt-to-GDP Ratio

	(1) Real GDP Growth	*(2) Inflation*	*(3) Nominal Interest Rate*	*(4) Primary Deficit GDP*	*(5) Capital Expenditure to GDP*	*(6) Contingent Liabilities to GDP*	*(7) Debt to GDP*
Dummy = 1 for above median increase in debt	-0.73 (1.08)	0.01 (0.04)	0.05 (1.04)	1.23*** (5.13)	-0.34 (0.60)	2.57* (2.19)	1.53 (0.46)
Constant	6.01*** (12.67)	3.40*** (14.13)	7.67*** (225.9)	0.91*** (5.38)	4.17*** (10.27)	1.94* (2.34)	26.79*** (11.4)
No. of observations	18	18	18	18	18	18	18

Source: State Finances Report, RBI.
Note: Median change in the debt to GDP ratio in 2014-15 and 2020-21 is 11.1. The dummy takes a value 1 for States where the increase in the debt-to-GDP ratio between 2014-15 and 2020-21 exceeded 11.1, and a value 0 for the States with a below-median increase. Variables are averaged over the period. Inflation is the rate of growth of the State-specific GDP deflator. t statistics are in parentheses *, **, *** refer to significance at 10, 5, and 1 percent levels, respectively.

In Tables 10-12 and Figures 16-17, we present debt sustainability analyses for Punjab and Gujarat, States representative of those with high and low debt-to-GDP ratios. Debt is unlikely to stabilize and may even increase further in Punjab. In Gujarat, on the other hand, debt is projected to decline as a share of State GDP in all scenarios.

In sum, States in a less favorable position are likely to face graver problems of debt sustainability, owing to slower economic growth, larger contingent liabilities, and the higher interest rates faced by States overall. Given projections

of a stable debt-to-GDP ratio for the Central Government, the behavior of these problem States constitutes the main threat to debt sustainability.

A question is why these problem States have had so much room to run. One answer is that, as we have already noted, borrowing costs do not vary across States. Despite different debt levels (and different projected primary deficits and contingent liabilities), Gujarat and Punjab issue at equivalent interest rates. This reflects the RBI's efforts to equalize interest rates across States. De facto, this results in States in better fiscal health subsidizing those whose health is worse. It relaxes market discipline on errant States.

We have not found much scholarly literature on the question of why rates differ so little across States. Practitioners have pointed us to the following: (1) SDLs of different States are all eligible for the RBI's repo facility subject to the same haircut; (2) banks are allowed to mark to market different States' SDLs identically; (3) all SDLs held by banks carry zero risk weights; (4) the RBI provides States with short-term loans up to a specified percentage of its borrowing needs; (5) at the end of the day, SDLs are covered by a broader central bank and government guarantee. Verifying these hypotheses and identifying their relative importance is an important topic for future research. So too is the political economy (in particular, whether these policies have been adopted by the relevant authorities in an effort to develop a more liquid secondary market for government bonds, or for other reasons).

The horizontal devolution of taxes among States, awarded by the Finance Commission (FC) every five years, also does not provide incentives for fiscal rectitude.[21] FCs are mandated to allocate more resources to States with larger revenue deficits, which is an obvious source of moral hazard. The 15th FC included tax effort (the ratio of per capita own tax revenue to per capita State GDP in the previous three years) as one criterion in its larger devolution matrix, but this did not solve problems on the expenditure side. Some States keep significant expenses and liabilities off budget. FCs do not have data, mechanisms, or a clear mandate to estimate contingent liabilities. The 15th FC was asked to recommend performance incentives for States in areas like the power sector and solid waste management. But FCs have not been asked to consider overall fiscal prudence or contingent liabilities (except indirectly through reforms of the power sector) when recommending allocations.

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21. The Finance Commission (FC) is a constitutional body formed by the President of India every five years to recommend the devolution of revenue to the States and its horizontal distribution. The 16th FC is slated to be announced later in 2023-24. An earlier literature (von Hagen and Eichengreen 1996) suggests that vertical fiscal imbalances (where the Centre raises taxes but States are responsible for spending programs) provide States with incentives to run larger deficits, in the expectation of consequently receiving larger transfers from the Centre. To the extent that tax reforms have located more revenue-raising capacity at the Centre, this vertical fiscal imbalance and associated deficit bias may have grown more acute.

FCs are dissolved after they report to the President. There is no parallel institution or body to monitor States' finances and assess whether they have departed from the course projected by the FC. Thus, it would be desirable to establish a permanent Fiscal or Expenditure Council to monitor State finances, assess the quality of data and forecasts, and inform the public of the fiscal stance and debt sustainability of different States.[22]

TABLE 10. Average Values and Standard Deviations of the Key Parameters for Punjab

	Ten-year Average (2013-14 to 2022-23)		*Five-year Average (2018-19 to 2022-23)*	
	Mean	*Std dev*	*Mean*	*Std dev*
Nominal GDP growth (γ)	8.0	3.6	6.3	4.5
Deflator growth (π)	3.0	1.1	2.5	1.2
Real GDP growth (g)	4.8	3.0	3.7	4.0
Nominal interest rate (i)	7.8	0.7	7.4	0.6
Real interest rate (r)	4.8	0.9	4.9	1.1
Primary deficit (pd)	1.5	3.0	0.7	1.0
Growth-interest differential (g-r)	0.0	3.2	-1.2	4.0
Contingent Liabilities as % of GDP	8.9	7.0	3.6	2.4

Source: State Finances Report RBI, Economic and Political Weekly Research Foundation Database.

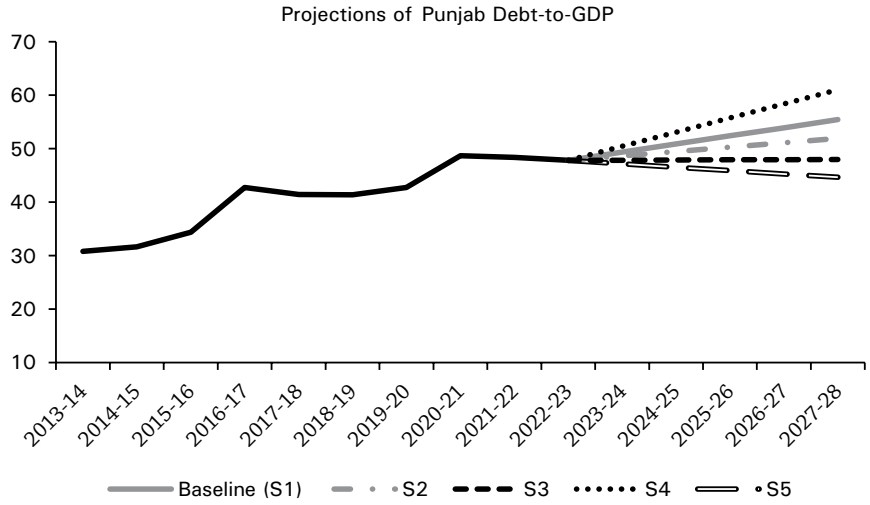
TABLE 11. Evolution of Debt-to-GDP Ratio for Punjab

Scenarios	*Scenario Description*	*Debt Level in 2022-23 (b_{t-1})*	*Primary Deficit (pd)*	*Real GDP Growth (g)*	*Real Interest Rate (r)*	*Change in Debt in the First Year (Δb_t)*	*Cumulative Change in Debt in the Next Five Years*
Baseline (S1)	Baseline: Past 10-year averages	47.8	1.5	4.8	4.8	1.5	7.6
S2	Higher real GDP growth rate	47.8	1.5	6.4	4.8	0.8	4.1
S3	Lower Primary Deficit	47.8	0.04	4.8	4.8	0.0	0.2
S4	Contingent liabilities absorbed (1.12 percentage point of GDP) each year	47.8	1.5	4.8	4.8	1.5	13.2
S5	Higher real GDP growth rate and Lower Primary Deficit	47.8	0.04	6.4	4.8	-0.6	-3.1

Source: State Finances Report RBI, *Economic and Political Weekly* Research Foundation Database, and authors' calculations.

22. See Rao (2018) on Fiscal Council and Debroy and Sinha (2023) on Expenditure Council.

FIGURE 16. Evolution of Debt-to-GDP Ratio for Punjab



Source: CEIC, EPWRF, and RBI State Finances Reports (multiple years). Projections are from 2023-24 onwards.

TABLE 12. Average Values and Standard Deviations of the Key Parameters for Gujarat

	Ten-year Average (2012-13 to 2021-22)		*Five-year Average (2017-18 to 2021-22)*	
	Mean	*Std dev*	*Mean*	*Std dev*
Nominal GDP growth (γ)	12.4	5.0	11.1	6.8
Deflator growth (π)	3.6	2.1	3.6	2.6
Real GDP growth (g)	8.5	3.7	7.2	5.0
Nominal interest rate (i)	7.9	0.9	7.3	0.7
Real interest rate (r)	4.3	2.3	3.7	2.9
Primary deficit (pd)	0.4	0.3	0.4	0.4
Growth-interest differential (g-r)	4.2	4.6	3.5	6.4
Contingent Liabilities as % of GDP	0.4	0.2	0.2	0.1
Contingent Liabilities as % of GDP (as of 2021-22)	0.2			

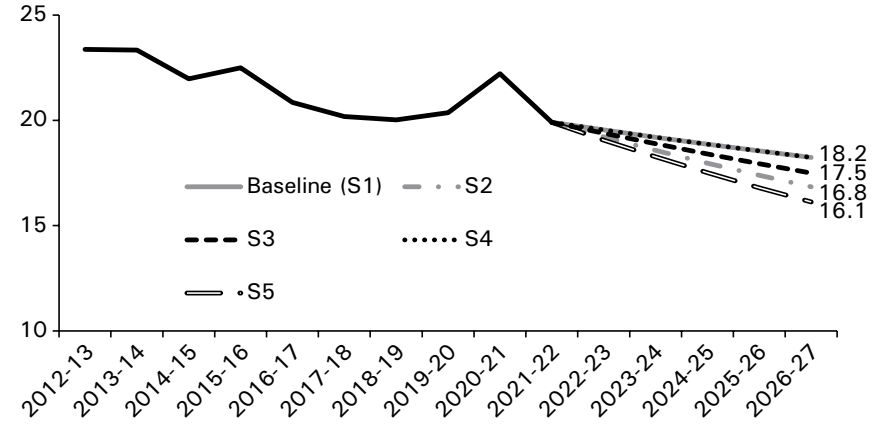
Source: State Finances Report RBI, Economic and Political Weekly Research Foundation Database.

TABLE 13. Evolution of Debt to GDP Ratio for Gujarat

Scenarios	*Scenario Description*	*Debt Level in 2021-22 (b_{t-1})*	*Primary Deficit (pd)*	*Real GDP Growth (g)*	*Real Interest Rate (r)*	*Change in Debt in the First Year (Δb_t)*	*Cumulative Change in Debt in the Next Five Years*
Baseline (S1)	Baseline: Past 10-year averages	19.9	0.4	8.5	4.3	-0.4	-1.7
S2	Higher real GDP growth rate	19.9	0.4	10.3	4.3	-0.7	-3.1
S3	Lower primary deficit	19.9	0.2	8.5	4.3	-0.5	-2.4
S4	Contingent liabilities absorbed (0.04 percentage point of GDP) each year	19.9	0.4	8.5	4.3	-0.4	-1.7
S5	Higher real GDP growth rate and lower primary deficit	19.9	0.2	10.3	4.3	-0.8	-3.8

Source: State Finances Report RBI, Economic and Political Weekly Research Foundation Database, and authors' calculations.

FIGURE 17. Evolution of Debt-to-GDP Ratio for Gujarat



Source: CEIC, EPWRF, and RBI State Finances Reports (multiple years). Projections are from 2022-23 onwards.

5. Past Episodes of Debt Consolidation

We focus now on past episodes of debt consolidation. We define consolidations as instances when the General Government debt ratio fell consistently for at least five consecutive years. Using data starting in 1990, this yields two consolidation episodes: 1991-92 to 1997-98; and 2004-05 to 2012-13. Debt reduction was 6.7 percent of GDP in the first episode, 16.9 percent in the second.[23]

The first episode followed a balance-of-payments crisis during which India signed up for an IMF program.[24] The IMF loan was conditioned on fiscal consolidation designed to reduce the Central Government's deficit from 8.5 percent of GDP in 1990-91 to 5 percent in 1992-93 (Chopra and Collyns 1995). This decline was premised on lower recurrent and capital expenditure. Inflation accelerated (the average annual rate of GDP inflation was about 10 percent), reflecting exchange rate depreciation in 1991-92.[25] Consolidation proceeded despite the fact that growth was slower than in control years, and despite the fact that tax revenues also grew more slowly.

The period 2004-05 to 2012-13, in contrast, was marked by faster growth, especially between 2004-05 and the Global Financial Crisis. Tax and administrative reforms yielded dividends in the form of higher revenues. In this second episode, unlike the first, the decline in the primary deficit was underpinned by higher tax revenue rather than by lower expenditure; capital expenditure, in particular, was protected.

Of the reduction of 17 percentage points in the debt-to-GDP ratio, nearly 10 points were accounted for by the States. These initiatives by State Governments were supported by a Debt Swap Scheme (DSS) in 2002-03/2004-05 and a Debt Consolidation and Relief Facility (DCRF) in 2005-06/2009-10. Under DSS, States could prepay expensive loans from the Central Government and instead raise cheaper loans from the market. Under DCRF, debt relief was provided to the States through debt reduction, rescheduling of debt and lower interest rates, conditional on enacting and implementing Fiscal Responsibility and Budget Management legislation. Debt relief was linked to the improvement in fiscal performance (assessed in terms of the reduction in revenue deficits). This experience is a reminder that debt consolidation at the State and Central Government levels is not independent; the Central Government can play an important role in providing incentives to the States.

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23. This is in contrast to Eichengreen and Esteves (2022), who also required the debt ratio to fall by at least 10 percentage points in order for it to qualify as a consolidation episode.

24. India signed the IMF program agreement in October 1991 and exited it in June 1993.

25. The exchange rate was first sharply devalued from its artificially appreciated levels, and was later floated (managed float).

TABLE 14. Episodes of Debt Consolidation

Consolidation	*Duration (Years)*	*Initial Debt*	*Terminal Debt*	*Change in Debt-to-GDP Ratio (Δb_t)*
1991-92 to 1997-98	7	74.2	67.5	-6.7
2004-05 to 2012-13	9	83.6	66.7	-16.9

Source: CEIC (Compiled from the Reserve Bank of India).

In Table 15, we regress a set of outcome indicators on dummy variables equaling 1 in years of debt consolidation, defined as above, and 0 otherwise. The results show that inflation is more than twice as high during consolidation episodes, while the primary deficit is about 1 percentage point lower. Higher inflation might be thought to make for a lower real interest rate, but in fact, the real interest rate is significantly lower than in the control-group years only in the second consolidation episode, when its low level was largely attributable to the low level of nominal rates post-Global Financial Crisis. On average, growth is not significantly different than in normal (non-consolidation) years.

TABLE 15. A Comparison of Key Variables during the Consolidation Episodes and Normal Years

	(1) Inflation	*(2) Growth*	*(3) Real Interest Rate*	*(4) Nominal Interest Rate*	*(5) Real Growth – Real Interest Rate*	*(6) Primary Deficit*
Dummy = 1 for 1991-92 to 1997-98	4.49***	-0.48	-0.20	4.29***	-0.28	-1.14*
	(4.44)	(0.37)	(0.18)	(6.17)	(0.18)	(1.63)
Dummy = 1 for 2004-05 to 2012-13	2.90***	1.08	-3.54***	-0.63	4.61***	-1.29**
	(3.12)	(0.91)	(3.46)	(0.99)	(3.30)	(2.02)
Constant	4.89***	5.78***	3.54***	8.43***	2.24***	3.19***
	(8.93)	(8.3)	(5.89)	(22.44)	(2.72)	(8.44)
No. of Observations	33	33	33	33	33	33

Source: Authors' calculations.

Note: Data are from 1990-1991 to 2022-2023. t statistics in parentheses. *, **, *** refer to significance at 10, 5, and 1 percent levels, respectively.

Table 16 compares total revenue, tax revenue, total expenditure, and capital expenditure across consolidation episodes and normal years. While the primary deficit was lower in both episodes compared with the control years, its reduction was achieved in different ways. In 1991-92/1997-98, a lower primary deficit

was attained by compressing expenditure, including capital expenditure. The consequences were not growth-friendly. In the second episode, in contrast, the decline in primary deficit was obtained mainly through higher revenue collection, including by raising tax revenue. The result was at least growth-neutral.

TABLE 16. A Comparison of Key Variables during the Consolidation Episodes and Normal Years

	(1) *Total Revenue*	*(2)* *Tax Revenue*	*(3)* *Total Expenditure*	*(4)* *Capital Expenditure*
Dummy = 1 for 1991-92 to 1997-98	-0.75	-1.13**	-1.64**	-0.74**
	(1.54)	(2.18)	(2.22)	(2.01)
Dummy = 1 for 2004-05 to 2012-13	1.08**	0.79*	-0.33	0.30
	(2.42)	(1.67)	(0.49)	(1.09)
Constant	18.91***	15.67***	26.95***	3.42***
	(71.98)	(56.24)	(67.57)	(20.83)
No. of Observations	33	33	33	29

Source: Authors' calculations.

Note: Data are from 1990-1991 to 2022-2023. Capital expenditure data is available from 1994-1995 onwards. t statistics are in parentheses. *, **, *** refer to significance at 10, 5, and 1 percent levels, respectively.

In sum, consolidation is easier when debt is reduced by both the Centre and the States. Contrary to prevailing conventional wisdom (Alesina, Favero and Giavazzi 2019), it is not obvious that consolidation achieved by cutting spending has worked better than consolidation achieved by raising revenues. The Alesina et al. result is obtained from data for advanced countries, where spending is arguably too high, so that consolidation achieved by reducing spending is more likely to work. As we showed above, international comparisons suggest that tax revenues are too low in India (not that spending is too high), suggesting that consolidation achieved through raising additional revenues can work in this setting. This is a reminder of the need to tailor advice to context.

In neither case was it possible, as it turned out, to maintain the lower levels of debt achieved in the consolidation episode. In both cases, more than half the reduction was reversed subsequently. After the 7-percentage point reduction in debt-to-GDP from 1991-92 to 1997-98, debt rose from 68 percent of GDP in 1998-99 to 85 percent in 2003-04, more than fully reversing its preceding fall. Debt rose despite an acceleration in GDP growth from 5.3 percent to 5.9 percent per annum. This rise was attributable to an increase in primary deficit from 2 percent to 3.3 percent and to some decline in inflation that translated into higher real interest rates.

The reduction of debt achieved from 2004-05 to 2012-13 was partially reversed in 2013-14/2019-20, when the debt ratio rose from 67 percent to 75 percent. The period was marked by the same primary deficit ratio as in the

preceding consolidation period, a slight deceleration in growth (from 6.9 percent to 6.7 percent), and once more a fall in inflation that translated into higher real rates.

These post-consolidation experiences speak of the limited role of inflation in debt consolidation. It is tempting to think that a country whose debt is at long tenors can inflate away a significant portion. Inflation was higher during both consolidation episodes than in other periods, consistent with this presumption. Inflation worked to reduce debt, especially in the second of the two episodes, by helping to depress the real interest rate. But once the burst of inflation passed and inflation came down, this effect was reversed. Arslanalp and Eichengreen (2023) analyze annual data on inflation and debt for a panel of countries stretching to 1800. They estimate the relationship using local projections and simulate the effect of an inflation shock. Consistent with what we find here for India, they show that the impact of an inflation shock on the debt ratio is temporary. That impact effect is reversed over time as interest rates, maturities and spending adjust. In India's case, we would expect the speed of this adjustment to accelerate, and the transitory benefits of inflation for debt reduction to grow even more transitory, with further financial liberalization and deregulation.

6. Costs and Risks

What are the costs and risks of India's high debt and deficits? In the introduction to our paper we identified six.

First, interest payments absorb resources, limiting their availability for other economic and social purposes. Interest payments exceed 25 percent of General Government revenues. This share is roughly twice the emerging market and developing-country average. At 5 percent of GDP, they are again twice the emerging market average (Figure 3). This difference reflects not high borrowing costs but rather high levels of debt. In contrast, government expenditure as a share of GDP is in line with other emerging markets. With interest payments absorbing a larger share of revenues, less is left for other needs. As noted, the government spends more on interest than on education and health combined. Its interest payments exceed its capital expenditure.

Second, and relatedly, available fiscal resources leave no room for meeting emerging priorities, notably climate change abatement and adaptation and the green transition. McKinsey (2022) estimates that, owing to its exposed geography, India will have to invest half as much again as advanced economies as a share of GDP to maintain its economic development in the face of climate change and in order to build low-carbon infrastructure. According to its Net Zero 2050 scenario, India will have to spend 11 percent of GDP between now and 2050 on decarbonization and low-carbon growth, compared to the global

average of 7.5 percent. This reflects elevated heat exposure of urban residents in particular, as well as the need for extensive spending on low-emissions assets and enabling infrastructure. Not all of this investment must be financed by government revenues and borrowings, of course. Global investment funds, oil and gas majors, foreign utilities, Indian conglomerates, government companies, and pension funds are all taking equity stakes in Indian renewable energy projects (Jaiswal and Gadre 2022). Wind and solar power companies issue debt to finance their investments, borrowing from domestic and international banks and development finance institutions. In 2019-21, some 50 percent of their debt financing was sourced overseas, a growing share in the form of green bonds. This said, regulatory risk (changes in tariffs and rates), planning risk (mis-estimation of power generation capacity) and extreme weather risk (including from climate change) make a significant public-finance contribution unavoidable.

Third, heavy debts limit room for responding to shocks, such as declining rates of domestic and global growth. India was not strongly constrained in responding to COVID-19; it reacted with a fiscal stimulus of 20 trillion rupees, or roughly 9 percent of GDP. About a third of this was above-the-line measures (spending on social protection and health care and foregone revenues); the remaining two-thirds of below-the-line measures involved various forms of business support (IMF 2022b). The combined response, while smaller than in the advanced economies (Hudson et al. 2022), was nonetheless substantial. Mishra and Patel (2022) argue that the resulting increase in debt has put upward pressure on interest rates, although our own analysis fails to find much evidence of this to date (see Appendix C). Be this as it may, at some point responding in this way to shocks will begin to show up in interest rates, especially as regulations encouraging investments in bonds by insurance companies, provident funds and banks are relaxed. At some point, this will begin to throw debt sustainability into doubt. Conversely, maintaining debt sustainability in the face of such shocks will leave the government countercyclically constrained, amplifying cycles.

Fourth, requiring banks and other institutional investors to hold large amounts of government debt leaves them fewer resources for lending to small and medium-sized enterprises and to otherwise help to relax financial constraints on economic development. This problem would be accentuated were India's relatively high level of household savings to decline (households' financial savings being held to a significant extent in the form of bank deposits, thereby making it easier for the banks to fund their investments).[26] Moreover, so long as public-sector banks are regarded as important captive investors in government

26. India's household savings rates are about 20 percent of GDP, of which about half are physical savings in property, etc., and the rest are financial savings. Gross financial savings of households was 12 percent of GDP in 2021-22, when spending opportunities were limited by COVID; whereas net household financial savings (after deducting household financial borrowings from gross financial savings) was 7.6 percent.

bonds, those banks are less likely to be privatized, making it correspondingly less likely that their lending will be guided by commercial motives.

Fifth, and again relatedly, high government debt creates the potential for financial stability risks. For the moment, such risks remain limited. Banks are required to hold government securities in order to satisfy their Statutory Liquidity Ratios (SLRs); they are required to hold liquid assets, including government bonds, of a specified minimum percentage of deposits.[27] Risks to their balance sheets can, therefore, develop with the repricing of these assets when interest rates rise. However, the RBI has also mandated that banks hold highly liquid assets as Investment Fluctuation Reserves (IFRs), intended as a buffer against fluctuations in their investment portfolios. As of December 2022, banks held more than the mandated level of reserves. Moreover, public sector banks are no longer more exposed to interest rate risk than private banks or foreign banks (Acharya 2020). Finally, there is the implicit guarantee enjoyed by State Government debts. All this has limited portfolio repricing risk and the associated risk of a Silicon Valley Bank-like depositor run in response to bad news about the bond portfolio.

In addition, SLR has been cut from 38 percent in the early 1990s to 18 percent in recent years (see Appendix D). As a result, banks now hold a smaller share of their assets in government securities. But this reduction in mandated bank holdings over the last three decades means, in turn, that governments have come to rely on a more diverse set of investors to hold their debts. The share of insurance companies, provident funds, and other non-bank investors in Central Government securities has increased from 20 percent in 1990-91 to 46.6 percent in 2021-22, as noted earlier.[28] For their part, insurance companies and provident funds are required by regulation to hold roughly 50 percent of their investable funds in government securities.

But if regulations compelling the insurance companies and provident funds to hold government bonds are further relaxed, SLR is further reduced, and/or domestic savings decline, Central and State governments will be forced to place additional debt, including short-term debt, with foreign investors, in the manner of other emerging markets. If externally-held debt is denominated in foreign currency, as in other countries, this will increase the sector's currency mismatch, creating debt-servicing and financial difficulties when exchange rates move. Even if India succeeds in placing rupee-denominated debt with foreign investors, this nevertheless raises the risk of a capital-flow reversal, an investor strike and a bond-price collapse, since the currency mismatch will now

27. Business Standard, August 16, 2022, notes some of the developments which have led to a decline in the interest rate risk for the Indian banks: https://www.business-standard.com/article/finance/banks-now-in-better-position-to-manage-rbi-s-interest-rate-risks-122081601071_1.html

28. The RBI also holds a larger fraction of public debt than in the past. The RBI's share has increased from 7.8 percent of the Central Government debt in 2007-08 to 16.6 percent in 2021-22. The corresponding numbers are smaller for the General Government.

be on foreign balance sheets, encouraging foreign investors to flee at the first sign of trouble (Carstens and Shin 2019).

For the moment, India may be able to place most of its debt with "patient" domestic investors. But if this becomes less true going forward, run risk—and volatility—will increase.

7. Conclusion

Our central conclusion is that India's General-Government-debt-to-GDP ratio, which is high by emerging market standards, is unlikely to decline significantly in the next five years. In the best-case scenario, it might fall from its current level of some 90 percent of GDP, which is half again as high as the emerging market average, to 80 percent of GDP, where it would be 30 percent again as high. But less rosy scenarios are also possible.

What might be achieved with more ambition? In purely mathematical terms, India could bring down its debt to 70 percent of GDP through a combination of lower primary deficits, higher inflation, and faster GDP growth. A percentage point increase each in growth and inflation and a percentage point reduction in the primary deficit would reduce public debt to 70 percent of GDP in five years. The requisite changes could be achieved through an amalgam of the following factors:

- Raising additional revenue through higher tax, non-tax, and privatization receipts. Along with better tax administration and digitalization, recent tax reforms (notably the introduction of a uniform Goods and Services Tax in 2017) have succeeded in modestly boosting revenue growth. Yet in a fast-growing economy, where nominal GDP has been growing on average at 11-12 percent, the rate of tax-revenue growth still has not exceeded that of GDP growth, in contrast to other fast-growing emerging markets. More could be done along these lines, through additional digitization and administrative streamlining, broadening the tax base, raising property tax, and adopting new taxes.[29]
- Continuing to re-orient spending toward capacity- and infrastructure-enhancing investment that promises to further boost GDP and revenues.
- Limiting contingent liabilities, which have been a chronic problem at the State level.

But imagining sharp changes along these lines borders on wishful thinking. Meanwhile, economic and social development will require additional spending on health and education. Government will have to contribute significantly to

29. On low revenues from property taxation see Rao (2013).

the country's decarbonization and climate-change-adaptation investments, which are large by international standards. Eventually, interest rates will adjust upward in response to inflation, eliminating any favorable debt-consolidation effects. As a result of these factors, India will almost certainly be living with high public debt for years to come.

All this said, the country faces no immediate crisis of debt sustainability. Our baseline scenario does not point to exploding debt ratios. For the moment, rollover risk is limited. Most public debt securities are held by banks, insurance companies and other patient domestic investors. It is denominated in rupees. Little is at short maturities or floating rates.

But the preceding does not mean that the country's relatively high public debt is without costs. Devoting a large share of financial resources to servicing debts leaves the Central Government and States with fewer resources for other investments. At some point, it will leave less room for responding to shocks. Banks and nonbank financial institutions mandated to hold government bonds are left with fewer resources for funding economic development. Even if volatility and financial-stability risk are limited now, this could change with financial liberalization and deregulation. The bottom line is that India's high public debt leaves no room for mis-steps.

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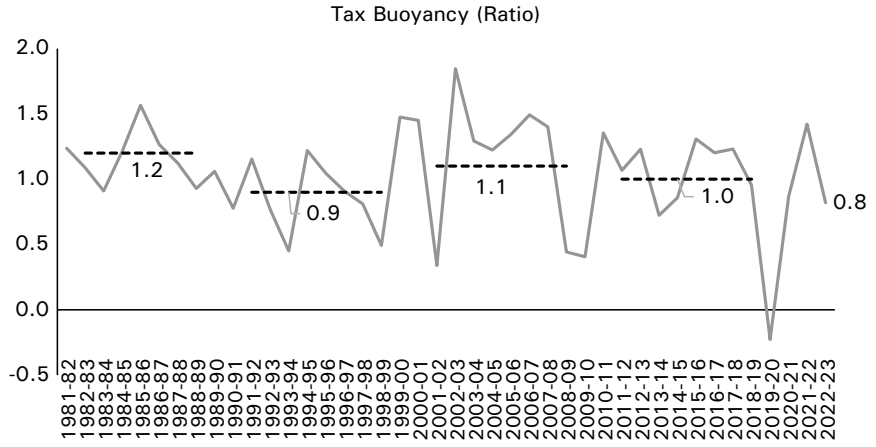
Appendix A: Data Table

TABLE A.1.

Indicator	*Source*
Total Liabilities of General Government	CEIC. Estimate for 2022-23 has been taken from Chapter 3 of the Economic Survey 2022-23. We have used the words debt and liabilities interchangeably in the paper.
General Government Primary Deficit	Calculated as the difference between Fiscal Deficit and Interest Payments
General Government Interest Payments, Total Revenue, Tax Revenue, Non-Tax Revenue, Total Expenditure, Revenue Expenditure, Fiscal Deficit	CEIC
Data for the Centre and the State governments	For key fiscal variables, we considered data from RBI (Handbook of Statistics on Indian Economy), State Finances Report, RBI, CEIC Database, Economic Survey, and India Series in the Economic and Political Weekly Research Foundation's (EPWRF) Database. While largely data for Centre and State Government match across these sources (with EPWRF's estimates slightly different than those provided by RBI and CEIC), the data for debt does not add up to General Government Data. We calculated Centre's debt as the difference between General Government Outstanding Liabilities and State's outstanding liabilities net of loans and advances from the Centre. For the other variables, we used the RBI's Database on Indian Economy and its State Finances Report.
General Government Debt for Global and Emerging Markets	Fiscal Monitor, IMF April 2023
General Government Fiscal Deficit for Global and Emerging Markets	Overall balance of General Government, Fiscal Monitor, IMF April 2023
Interest Payments on General Government Debt for Global and Emerging Markets	Calculated as the difference between fiscal deficit and primary deficit, compiled from the Fiscal Monitor, IMF April 2023
Contingent Liabilities	The data for contingent liabilities is available from 2008-09 till 2021-22 for the Central Government and has been compiled from various annual financial audits of the union government conducted by the CAG. The outstanding guarantees data for states is available from 1991-92 onwards and is published by the State Finances Report. The data for Centre's outstanding guarantees and States' outstanding guarantees are available for 2008-09 to 2021-22 to get the General Government contingent liabilities.

Appendix A: Tax Buoyancy

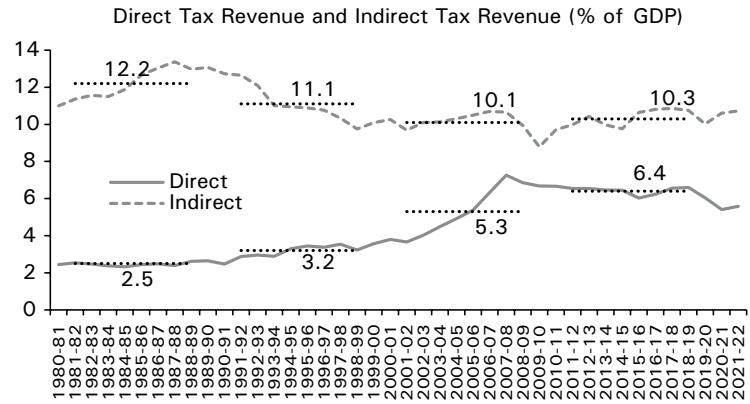
FIGURE A.1. Tax Buoyancy



Source: Authors' calculations.

Note: Tax buoyancy is measured as the ratio of tax revenue growth relative to nominal GDP growth for each of the years shown in the chart. If gross tax receipts increase more than proportionally to an increase in nominal growth (that is, the ratio is greater than 1), then we say that the tax system is buoyant. Horizontal dashed lines are for decadal averages from 1981-82 to 1989-90, 1990-91 to 1999-2000, 2000-01 to 2009-10, and 2011-12 to 2019-20.

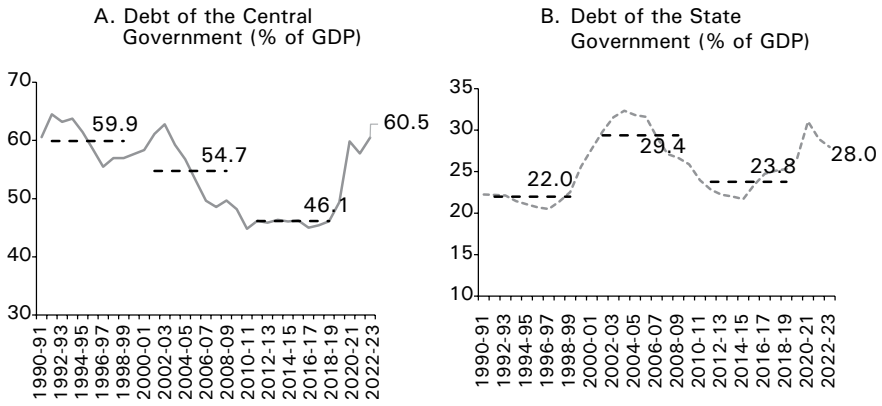
FIGURE A.2. Direct and Indirect Taxes



Source: RBI. Direct taxes refer to taxes levied on property or income such as income tax and personal property tax. Indirect taxes refer to. Indirect taxes are levied on goods and services such as GST and customs and excise duties. The data for 2020-21 is a Revised Estimate and for 2021-22 is a Budget Estimate. Horizontal dashed lines are for decadal averages from 1981-82 to 1989-90, 1990-91 to 1999-2000, 2000-01 to 2009-10, and 2011-12 to 2019-20.

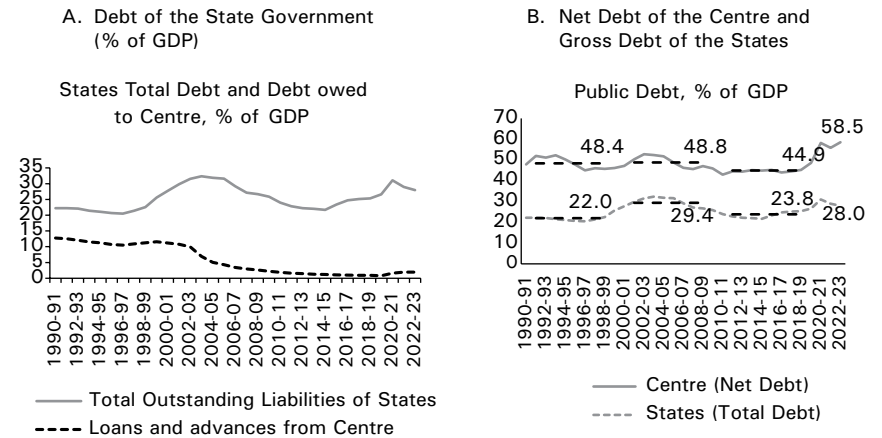
Appendix B: Debt and Deficit of the Centre and the States

FIGURE B.1. Public Debt of the Central and State Governments



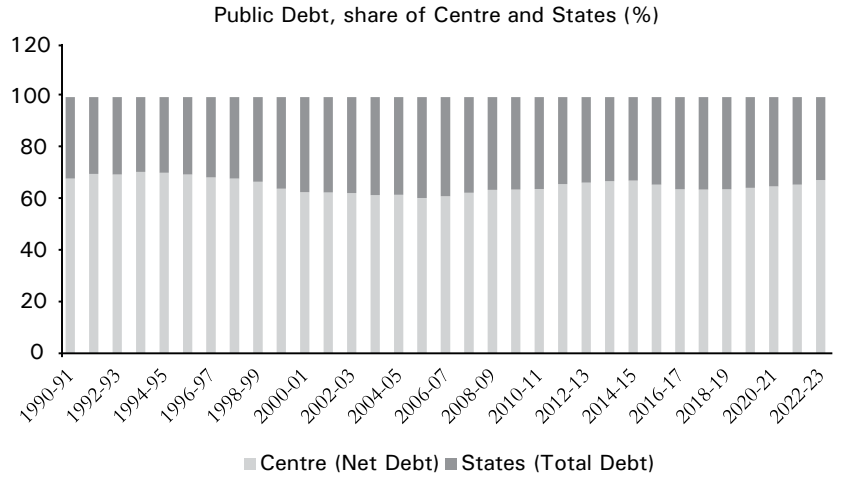
Source: State Finances Report, RBI (States). For 2021-22: Revised Estimates and for 2022-23 the Budget Estimates for State's Total Debt. The charts show the total outstanding liabilities of Central Government and State Government as % of GDP. States total liabilities include the debt it owes to the Centre. The Centre's Total Debt has been calculated as the difference between General Government total outstanding liabilities and State Government liabilities net of loans and advances from the Centre. Horizontal dashed lines are the respective decadal averages.

FIGURE B.2. Debt Owed to the Central Government by the States and Net Public Debt of the Central Government



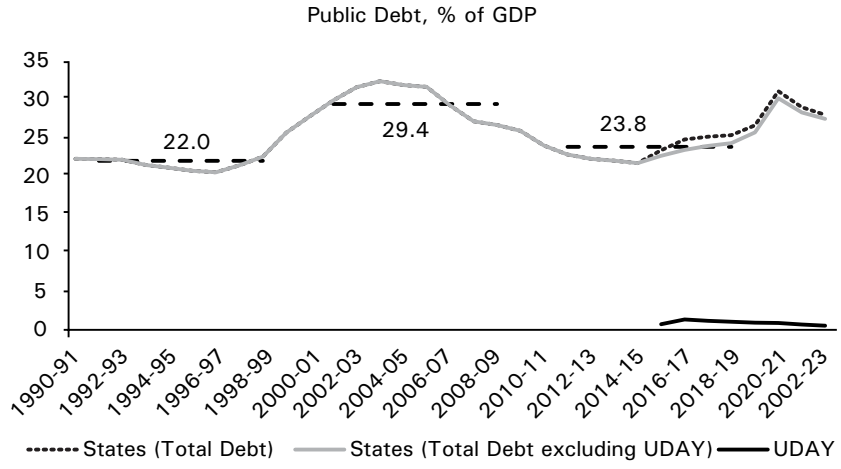
Source: State Finances Report, RBI (States). For 2021-22, we have used the Revised Estimates and for 2022-23 the Budget Estimates for State's Total Debt. The chart in the left panel shows the total outstanding liabilities of States as % of GDP as well as the component for loans and advances from Centre as % of GDP. The chart in the right panel shows the States' total debt and the Central Government net debt calculated as the difference between General Government total debt and States total debt. Horizontal dashed lines are the respective decadal averages.

FIGURE B.3. Share of Centre (Net Debt) and States (Total Debt) in Total Public Debt



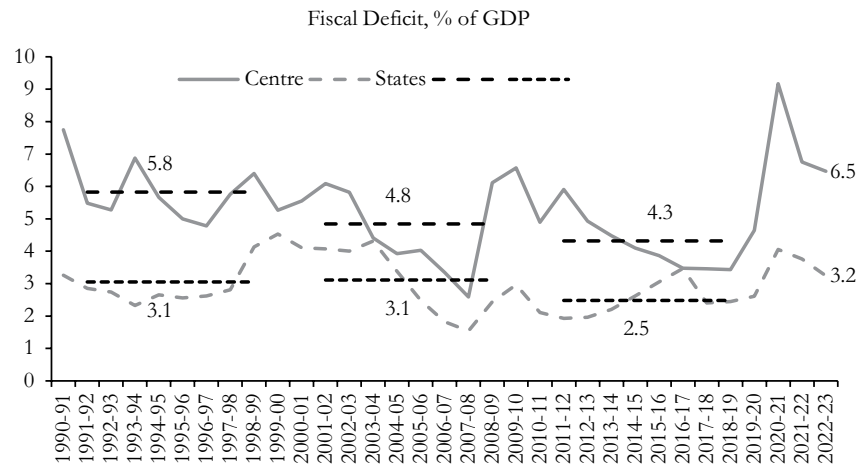
Source: State Finances Report, RBI (States). Net public debt for the Centre has been calculated as the difference between General Government total outstanding liabilities and State's total outstanding liabilities. For 2021-22, we have used the Revised Estimates and for 2022-23, the Budget Estimates for State's Total Debt. In this chart, we are showing the share of Centre's debt and States' debt in the total General Government debt (following the specification in Figure B.2).

FIGURE B.4. Total Debt of States and Total Debt Excluding Debt on Account of UDAY



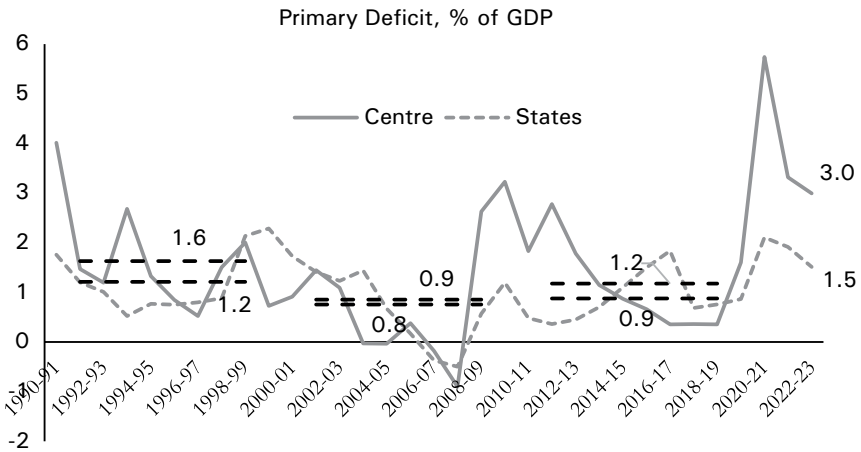
Source: State Finances Report, RBI (States) and CEIC (compiled from Clearing Corporation of India for Ujjwal DISCOM Assurance Yojana, UDAY). For 2021-22, we have used the Revised Estimates and for 2022-23, the Budget Estimates. The chart shows the total outstanding liabilities of State Government as % of GDP, total outstanding liabilities of States excluding UDAY as % of GDP, and debt incurred on account of UDAY as % of GDP. Under the UDAY scheme, State Governments assumed contingent liabilities on account of the loss-making electricity distribution companies (governments issued bonds in lieu of the debt owed by these companies to the banks).

FIGURE B.5. Deficit of Centre and States



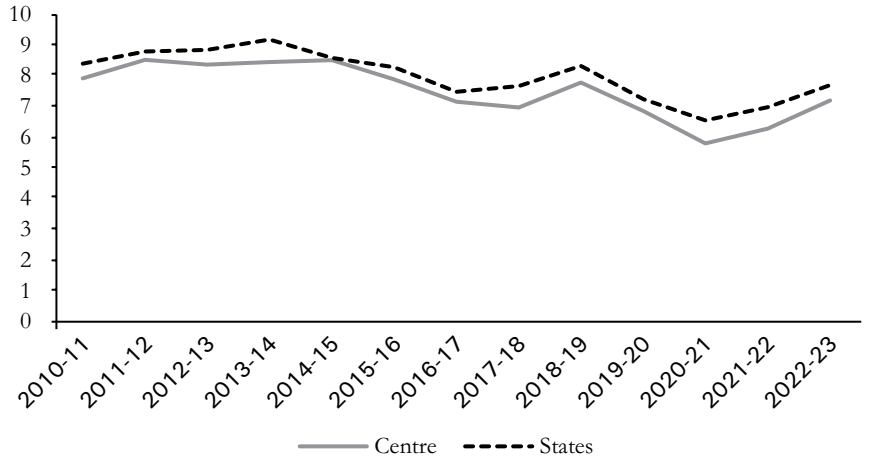
Source: Handbook of Statistics on Indian Economy, RBI (Centre) and State Finances Report, RBI (States). For the Centre, data for 2021-22 is Actual and 2022-23 is a Revised Estimate from CEIC. For States, data for 2021-22 is a Revised Estimate and for 2022-23 is a Budget Estimate. The chart shows the fiscal deficit as % of GDP for both the Centre and State governments. Horizontal dashed lines are the respective decadal averages.

FIGURE B.6. Primary Deficit of Centre and States



Source: Handbook of Statistics on Indian Economy, RBI (Centre) and State Finances Report, RBI (States). For Centre, data for 2021-22 is Actual and 2022-23 is a Revised Estimate from CEIC. For States, data for 2021-22 is a Revised Estimate and for 2022-23 is a Budget Estimate. The chart shows the primary deficit as % of GDP for both the Centre and State government. Horizontal dashed lines are the respective decadal averages.

FIGURE B.7. Interest Rate Paid by Centre and State Governments



Source: RBI (Centre and States), CEIC (individual State Governments). Yields refer to weighted average yields on new issues of securities during the year.

Appendix C: Debt-to-GDP Ratio and Interest Rates on Government Debt (General Government)

We regress nominal interest rates on debt-to-GDP ratio of the General Government, for the entire period 1990-91 to 2022-23, and different subperiods. Interest rates have been calculated as weighted average yields on Centre and State government securities using the shares of Centre and States debt in total debt as weights.

Results indicate that the interest rates do not react positively to the level of debt (Table C1). In other words, the government does not pay a premium to raise debt when its debt levels are already high. One would have expected this to be perhaps more true in the earlier years, when financial repression through high SLR and CRR, and even through the automatic monetization of deficit by the RBI was much higher. But it also remains the case for the period starting in 2010-11.

TABLE C.1. Results from Regressing Nominal Interest Rate on Debt- to-GDP Ratio of the General Government

	(1) *Nominal Interest Rate (Yields)*	*(2)* *Nominal Interest Rate (Yields)*	*(3)* *Nominal Interest Rate (Yields)*
Debt-to-GDP ratio	-0.18***	-0.08**	-0.08***
	(3.23)	(2.77)	(4.71)
Constant	22.42***	13.65***	13.72***
	(5.44)	(6.37)	(10.62)
No. of Observations	33	23	13
Years included	1990-91 to 2022-23	2000-01 to 2022-23	2010-11 to 2022-23

Source: Authors' calculations. Nominal interest rate for General Government has been calculated as the weighted average yield on Centre and State Government securities (using the shares of Centre and States' debt in total debt as weights).

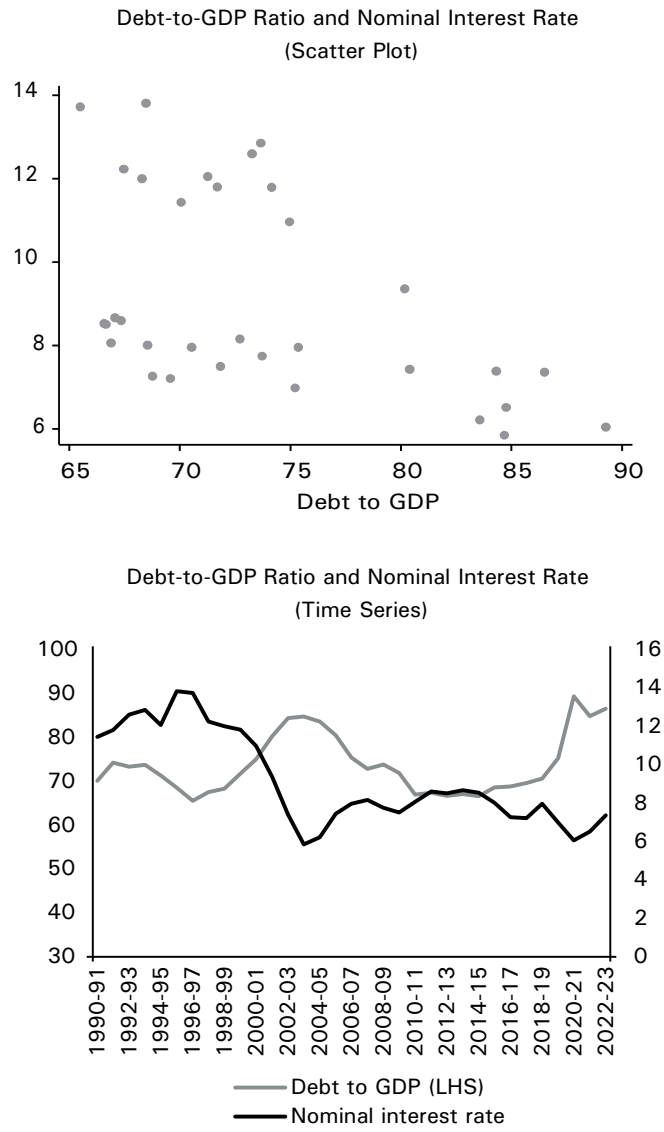
Note: t statistics in parentheses. *, **, *** refer to significance at 10, 5, and 1 percent levels, respectively. Nominal interest rate for general government has been calculated as the weighted average yield on Centre and State government securities (using the shares of Centre and States' debt in total debt as weights).

As we show in the next appendix, over time the financial repression (at least through commercial banks) has declined, and the investor base has become more diversified. Yet the non-relationship (or the reverse relationship) between interest rates and debt levels has persisted.[30] This could be attributed to three factors: (i) There are adequate savings and lack of alternative safe assets. (ii) Financial repression has continued but has just shifted from commercial banks to other investors, notably insurance companies and provident funds. (iii) The RBI, with a strong balance sheet (along with other large players in the market, such as the State Bank of India), ensures that yields remain low.

We repeat the exercise with real interest rates, and find that the real interest rates do not react positively to the level of debt (Table C2).

30. Lack of positive relationship prevails when we do a similar exercise separately for Central and State governments.

FIGURE C.1. Co-movement of Debt-to-GDP Ratio and Nominal Interest Rate



Source: CEIC (General Government debt-to-GDP ratio). Nominal interest rate for General Government has been calculated as the weighted average yield on Centre and State Government securities (using the shares of Centre and States debt in total debt as weights).

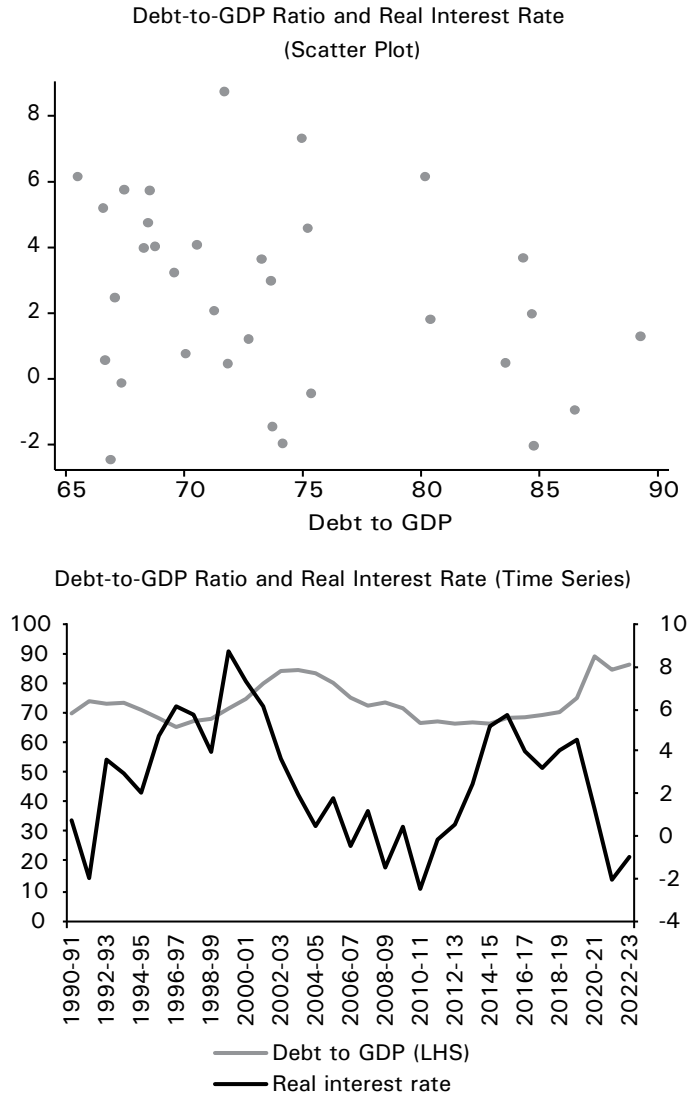
TABLE C.2. Results from Regressing Real Interest Rate on Debt-to-GDP Ratio of the General Government

	(1) *Real interest rate*	*(2)* *Real interest rate*	*(3)* *Real interest rate*
Debt-to-GDP ratio	-0.11	-0.06	-0.12
	(1.52)	(0.72)	(1.32)
Constant	10.80*	6.31	10.96
	(1.98)	(1.05)	(1.60)
No. of Observations	33	23	13
Years included	1990-91 to 2022-23	2000-01 to 2022-23	2010-11 to 2022-23

Source: Nominal interest rate for General Government has been calculated as the weighted average yield on Centre and State Government securities (using the shares of Centre and States debt in total debt as weights). Rate of growth of deflator (inflation rate) was then subtracted from nominal interest rate to get the real interest rate.

Note: Data are from 1990-1991 to 2022-2023. t statistics in parentheses. *, **, *** refer to significance at 10, 5, and 1 percent levels, respectively. Real interest rate has been calculated as the difference between nominal interest rate and growth rate of GDP deflator (inflation rate).

FIGURE C.2. Co-movement of Debt-to-GDP Ratio and Real Interest Rate



Source: CEIC (General Government debt to GDP ratio). Nominal interest rate for General Government has been calculated as the weighted average yield on Centre and State Government securities (using the shares of Centre and States debt in total debt as weights).

Appendix D: Bank-Sovereign Nexus

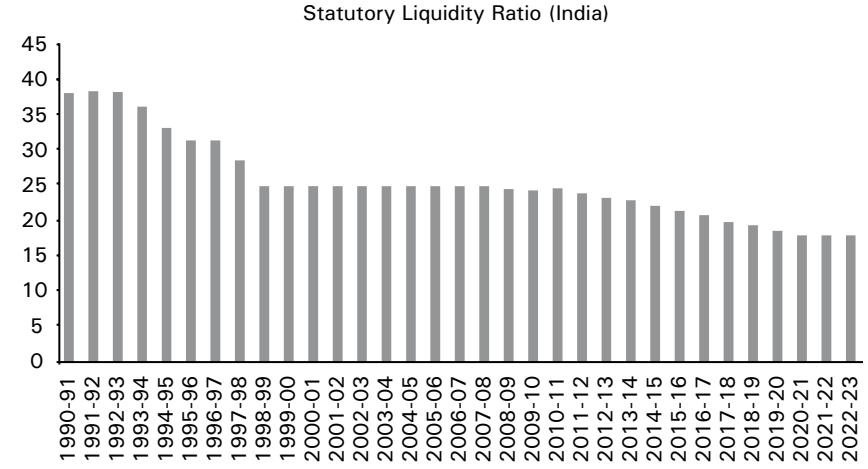
The following five kinds of investors hold government securities: banks, insurance companies, provident funds, the RBI, and a residual category, which includes retail investors, cooperative banks, and mutual funds, among others. Their relative shares have changed in the last decade, over which the share of banks has declined, whereas those of the other four investors have increased (Figure D2).

The government owns a large part of each segment. For instance, it owns 12 banks (21 banks are private) and 7 of the largest insurance companies (50 insurance companies are private). Government banks accounted for 60 percent of total bank assets, while government insurance companies accounted for about 80 percent of the industry's total assets (as of 2020-21).

Banks, insurance companies, and provident funds have statutory requirements to invest in government securities (for the banks, for example, see Figure D1). But public banks have traditionally held more than the mandated share of their assets in government securities (Gupta, Kochhar, and Panth 2011). Their SLR ratio has declined from about 40 percent in the early 1990s to 18 percent currently, while public sector banks have reduced their excessive shares in these securities. They now hold only a slightly larger share of their assets in government securities compared to private banks.

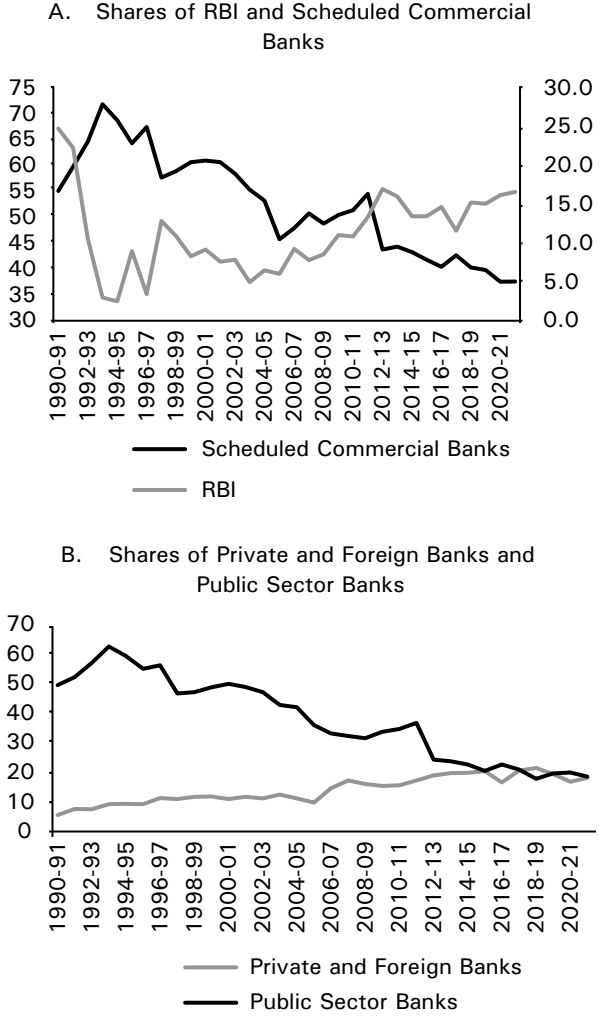
Both insurance companies and provident funds face statutory requirements to invest about 50 percent of their respective investable funds in government securities. In recent years, the provident fund has requested the government to allow it to increase the share of its investments in government securities, from 50 percent to 65 percent in 2016, and again to 75 percent in 2022. This request indicates a lack of options as far as other safe, long-term, and liquid assets are concerned (the corporate bond market is thin, and its secondary market has very little volume and liquidity).

FIGURE D.1. Statutory Liquidity Ratio



Source: CEIC (Compiled from Reserve Bank of India). Daily SLR has been averaged during the fiscal year to get annual average SLR for the respective fiscal years.

FIGURE D.2. Share of Public Sector Banks, Private Banks and the RBI in Central Government Securities



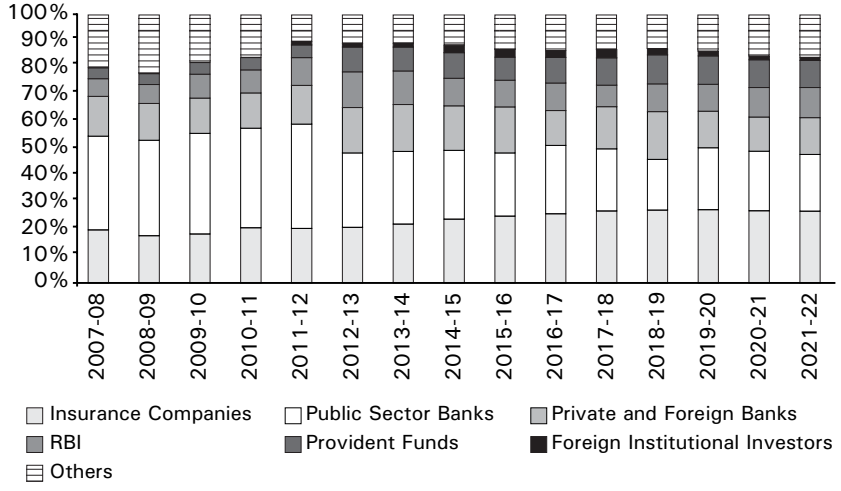
Source: Handbook of Statistics on Indian Economy, RBI.

TABLE D.1. Shares of Institutions in Holdings of Central Government Securities

	Insurance companies	*Public sector banks*	*Private and foreign banks*	*RBI*	*Provident funds*	*Foreign institutional investors*	*Others*
2007-08	19.2	32.3	17.3	7.8	2.9		20.4
2008-09	17.0	31.6	16.1	8.5	3.0		23.7
2009-10	17.4	33.7	15.4	11.0	3.4		19.0
2010-11	19.5	34.7	15.6	10.9	3.7		15.6
2011-12	18.7	36.8	17.3	13.3	3.8	1.6	8.4
2012-13	18.6	24.3	19.0	17.0	7.4	1.6	12.1
2013-14	19.5	23.8	19.8	16.1	7.2	1.7	12.0
2014-15	20.9	22.7	19.9	13.5	7.6	3.7	11.9
2015-16	22.2	20.5	20.5	13.5	6.0	3.6	13.7
2016-17	22.9	22.7	16.6	14.7	6.3	3.5	13.3
2017-18	23.5	20.9	20.7	11.6	5.9	4.4	13.0
2018-19	24.3	17.8	21.5	15.3	5.5	3.2	12.3
2019-20	25.1	19.6	19.4	15.1	4.7	2.4	13.6
2020-21	25.3	20.0	16.9	16.2	4.4	1.9	15.3
2021-22	25.9	18.6	18.2	16.6	4.6	1.6	14.5

Source: Handbook of Statistics on Indian Economy, RBI. Others include Mutual Funds, Co-operative Banks, Primary Dealers, Financial Institutions, Corporates, and State Governments. Besides RBI and Scheduled Commercial Banks, the data for other institutions is only available since 2007-08.

FIGURE D.3. Shares of Institutions in Ownership of General Government Securities



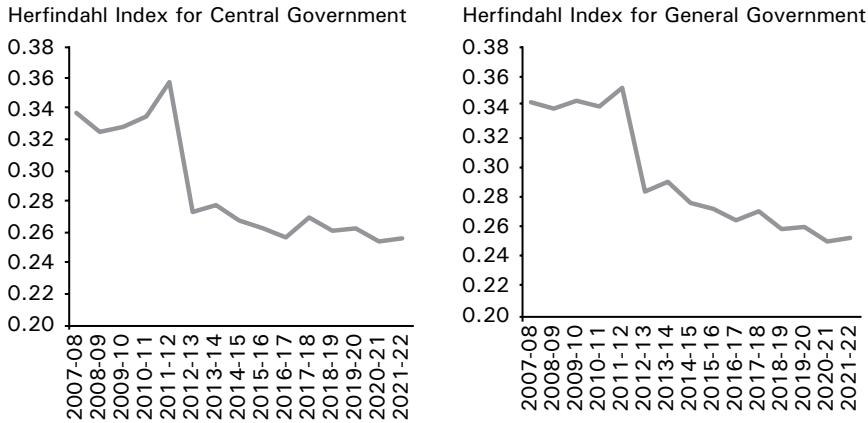
Source: Handbook of Statistics on Indian Economy, RBI. Others include Mutual Funds, Co-operative Banks, Primary Dealers, Financial Institutions, Corporates, and State Governments. Besides the RBI and Scheduled Commercial Banks, the data for other institutions is only available from 2007-08.

TABLE D.2. Shares of Institutions in Ownership of Total General Government Securities

	Insurance Companies	*Public Sector Banks*	*Private and Foreign Banks*	*RBI*	*Provident Funds*	*Foreign Institutional Investors*	*Others*
2007-08	19.7	35.0	14.8	6.6	4.0		19.9
2008-09	17.6	35.6	13.7	7.1	4.0		22.0
2009-10	18.3	37.5	13.1	8.9	4.3		17.9
2010-11	20.6	37.1	13.1	8.6	4.6		16.0
2011-12	20.3	38.9	14.4	10.4	4.8	1.3	10.0
2012-13	20.7	27.7	16.9	13.3	9.2	1.3	10.8
2013-14	22.0	27.0	17.5	12.5	8.9	1.3	10.7
2014-15	23.8	25.7	16.6	10.3	9.5	2.8	11.4
2015-16	24.9	23.6	17.1	9.9	8.6	2.8	13.1
2016-17	25.8	25.5	12.9	10.3	9.5	2.5	13.5
2017-18	26.8	23.2	15.7	8.0	10.2	3.1	13.1
2018-19	27.1	18.9	17.8	10.4	10.8	2.2	12.8
2019-20	27.3	23.1	13.7	10.0	10.6	1.6	13.7
2020-21	26.9	22.2	12.7	11.0	10.4	1.3	15.6
2021-22	26.8	21.1	13.7	11.2	10.1	1.0	16.0

Source: Handbook of Statistics on Indian Economy, RBI. Others include Mutual Funds, Co-operative Banks, Primary Dealers, Financial Institutions, Corporates, and State Governments. Besides the RBI and Scheduled Commercial Banks, the data for other institutions is only available from 2007-08.

FIGURE D.4. Concentration of Ownership in Central Government and General Government Securities



Source: Authors' calculations. The index is calculated by adding the squared shares of RBI, Scheduled Commercial Banks, Provident Funds, Insurance Companies, Foreign Portfolio Investors, and Others (which include Mutual Funds, Co-operative Banks, Primary Dealers, Financial Institutions, Corporates, and State Governments) in total Central Government or General Government securities.

Comments and Discussion*

Chair: N.K. Singh
15th Finance Commission

M. Govinda Rao
Takshashila Institution

This is an important paper with significant macroeconomic and fiscal implications. The paper is also timely as it brings out the urgency of fiscal consolidation to ensure sustainable public finances and debt reduction as the pandemic has pushed the public debt to a precarious level. I enjoyed reading the paper and entirely agree with the overall conclusions drawn and my comments will be only on some details.

Summary of the Paper

The paper begins with the observation that India's fiscal deficit and public debt are among the highest in the developing world and emerging economies. This was so even before the COVID-19 crisis, and the pandemic has pushed the public debt to a precarious level. However, the good news is that despite the increase, the debt is expected to remain broadly stable under reasonable assumptions. The authors make different projections based on alternative assumptions. The baseline scenario assumes the continuation of the average values of real GDP growth, real interest rates, and the primary deficit–GDP ratios for the period, 2013-14 to 2022-23 for the next five years. This shows an increase in the debt-to-GDP ratio by 2.2 percentage points. The second scenario assumes a higher GDP growth of 7.9 per cent (as against the average of 5.7 percent) and that results in a reduction in the ratio by 5.5 percentage points. In the third scenario, the primary deficit is assumed to be lower at 1.9 percent as against the average of 2.9 percent, and that reduces the ratio by 2.6 percentage points. The contingent liabilities are assumed at 5 percent of GDP. The exercise is repeated for the Centre and State governments separately, but the overall conclusion is that the debt is expected to remain sustainable in the

* To preserve the sense of the discussions at the India Policy Forum, these discussants' comments reflect the views expressed at the IPF and do not necessarily take into account revisions to the conference version of the paper in response to these and other comments in preparing the final, revised version published in this volume. The original conference version of the paper is available on NCAER's website at the links provided at the end of this section.

medium term though, the elevated debt entails significant costs to the economy. Among the States, the paper draws attention to the precarious situation in the States of Punjab, Rajasthan, and Kerala, which are likely to face serious strains in ensuring sustainability.

The bad news from these simulations is that even under favorable assumptions, the general government debt-GDP ratio is unlikely to decline below 80 percent in the medium term, let alone attainment of the target of reducing it to the pre-pandemic FRBM target of 60 percent of GDP unless politically difficult reforms are undertaken. In fact, the Fourteenth Finance Commission had set a target of 58.24 in 2019-20, the terminal year of its recommendation. This underlines the need to implement measures both to accelerate GDP growth and to substantially reduce the primary deficit. In particular, the increasing requirements of social services, physical infrastructure, and green transition would make larger demands on expenditures and raising the revenue-GDP ratio in the medium term is difficult.

The paper underlines several problems and costs to the economy associated with elevated debt levels. These include: (i) a large share of interest payments in government revenues crowding out resources for the much-needed social and economic services; (ii) the inability to meet the requirements of emerging priorities; (iii) difficulties in calibrating counter-cyclical fiscal policy and responding to shocks; (iv) financial stability risks due to the commercial banks holding a large proportion of government securities; and (v) increased pressure to market the debt to foreign investors as the domestic captive market for government securities gets saturated.

Comments

As mentioned earlier, this is an important and timely paper, and has significant fiscal and macroeconomic implications for the economy, calling for urgency in policy reforms. The paper underlines the need for the government to take proactive measures to reduce the primary deficit to minimize the economic costs and distortions arising from the accumulation of debt. Although this may necessitate taking politically difficult decisions, particularly in an election year, proactive measures to achieve fiscal consolidation are imperative. I am in full agreement with the broad conclusions of the paper. The comments below are mainly on some of the details.

On the analysis of trends, we have seen a regular cycle of 8-10 years of spikes in fiscal deficits and these are mainly associated with the implementation of pay scales, increases in international oil prices, electoral giveaways, and declines in the tax ratio. The 1981 and 1991 fiscal deficit escalation was triggered by large increases in expenditures in the preceding years and the oil price increases. The only time the government succeeded in containing fiscal deficit according to

targets was during the first four years after passage of the Fiscal Responsibility and Budget Management Act (FRBM) in 2003. That was mainly due to the implementation of the Tax Information Network (TIN) in 2003-04, resulting in a sharp increase in the tax-GDP ratio, and steady expansion in the base of service tax. However, the gains were frittered away in 2008-09, not so much due to the Global Financial Crisis, as stated in the paper, but owning to the decision in the election year to implement the farm loan waiver, Pay Commission recommendations, and expansion of national employment guarantee from 200 districts to the entire country announced in the Budget for 2008-09.

The debt-dynamics equation that is generally used to analyze debt sustainability is a little too mechanical. According to the equation, when the primary deficit is zero, debt will decline if the growth rate of GDP is higher than the average interest rate paid by the government. It is possible to keep the interest cost on government borrowing low either through regulating the interest rates on government borrowing or through financial repression, and when the GDP growth rate exceeds the interest rate, debt will decline. But that would create distortions in the financial market, and crowd out private investments by driving up the borrowing costs. In the Indian context, the Statutory Liquidity Ratio (SLR) prescribes that commercial banks are required to invest 18 percent of their demand and time liabilities in government securities, and 40 percent of their lending must be earmarked to the priority sector. This drives up the commercial sector's cost of borrowing with adverse impacts on its investments.

I have some reservations about the analysis of debt dynamics and simulations in the paper on both analytical and empirical grounds. Without taking away the seriousness of the problem, I think the results are a little too alarmist. On analytical grounds, making projections of debt under alternative assumptions does not consider the effect of inflation on debt and therefore, it is more appropriate to make the projections by taking nominal values of the variables rather than real values. This is because the numerator, the public debt at the beginning of the year, is the accumulation of net fiscal deficits over the years in historical prices, and the denominator, GDP, is in current prices. When there is high inflation, while the base year debt is in historical prices, the high value of GDP will reduce the ratio. On empirical grounds, it would be useful to estimate the average values excluding the year in which COVID-19 had a severe impact (2020-21) on the primary deficit and GDP growth. On contingent liabilities, the information itself is not very firm and there is a probability associated with contingent liabilities becoming real liabilities to the governments.

The paper underlines the carrying cost of the heavy debt burden on the economy. The interest cost claims almost 25 percent of the revenues. At 5 percent of GDP, it is much higher than the spending on education and healthcare taken together, and crowds out the much-needed resources for spending to strengthen the human and physical capital, and it weakens the ability of the government to calibrate counter-cyclical fiscal policy and to respond to shocks.

In addition to these, which are mentioned in the paper, the high debt ratio entails other costs as well. The international credit rating agencies keep the sovereign rating low when the deficits and debt are high, and this increases the cost of international commercial borrowing for Indian companies. Given the level of the household sector's savings, pre-emption of a large volume of these savings by the government reduces the borrowing space available to the private sector, resulting in financially crowding out productive commercial sectors. Besides all these, the debt today has to be serviced and repaid by levying taxes tomorrow and there are intergenerational equity questions. For all these reasons, it is necessary to take measures to control deficits and debt.

While the problem of costs and distortions arising from the accumulation of large debt is highlighted in the paper, it would add immense value to the paper if it addresses the issue of policy measures that the government should take to bring down the debt. Fortunately, the implementation of Goods and Services Tax (GST) has started yielding results. As the technology platform has stabilized, tax compliance has shown significant improvement. Besides, GST has helped the economy to become more formalized. The common numbering system with the Permanent Account Number (PAN) of income tax helps in comparing the GST returns with income tax returns and the compliances of both taxes are likely to increase in the medium term. This is likely to enhance the revenue productivity of the tax system to provide some cushion to reduce the primary deficit.

The last two budgets have seen greater transparency and a greater focus on containing revenue expenditures to release more resources to capital expenditures. The Union Finance Minister has promised that the Centre's fiscal deficit will be contained at 4.5 percent of GDP by 2025-26. Hopefully, despite the general elections to be held in 2024, there will be attempts to continue the fiscal consolidation process. One area where the past efforts of the government have not borne the expected success is in realizing the disinvestment targets and monetizing the assets of public sector enterprises. It is important to relook at the role of the government, which is to promote the private sector and not to compete with it, and what is required is to regulate the private sector to prevent predatory competition. It is important to accelerate the process of disinvestment and privatization, and use the proceeds to pay off the debt.

Macroeconomic stabilization is predominantly a Central function, and the States have no inherent incentive to contain their deficits and debt except to the extent that large interest payments crowd out other expenditures. Considering that this is a Central responsibility, it is necessary to avoid bailouts and enforce hard budget constraints. Article 293(3) of the Constitution requires the States to seek permission from the Centre to borrow so long as they are indebted to the Centre. All the States have enacted their FRBM Acts, and it is necessary to ensure that the States adhere to the targets set in their Acts and are not allowed to borrow more than what is set out. There should be strict supervision and

monitoring of off-budget borrowing and other fiscal risks. Although in the past, the States were incentivized to levy the property tax at the local level, not much progress is seen. The power sector continues to bleed the States. As far as the States are concerned, the time has come to question whether the large number of enterprises run by them serve any public purpose. Many States run commercial enterprises, including hotels, and it is time to divest them and monetize the large parcels of land and other assets to pay off the debt.

Overall, this is an important contribution and hopefully, the policymakers will take cognizance of the problem and initiate steps to reduce fiscal deficits and debt to ensure greater fiscal and macroeconomic stability.

Kenneth Kletzer
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The authors have presented an extremely interesting and helpful paper on the challenges that the rise in India's outstanding public debt during COVID pose for fiscal policy. I really enjoyed reading the paper. It provides a very clear and detailed story of the dynamics and sustainability of public debt and deficits. The diagnostic approach taken in the analysis is very well suited for examining debt sustainability and identifying the potential consequences of maintaining India's present levels of government debt and deficits. Indeed, the paper concludes the diagnosis with a general plan of treatment. There's a lot of information here, all of it relevant and important for understanding India's public debt. The authors have done such a thoughtful and detailed analysis that I am left with highlighting points and making some small observations.

As we have seen, General Government debt sharply increased with the public spending needed to maintain household welfare and support business enterprise viability through the pandemic lockdown. The government appropriately sought to smooth consumption under an adverse shock by borrowing against repayments from future output. One way to meet such increases in debt is to pay the interest due in perpetuity, maintaining the debt-to-output ratio. This might be appropriate if all fiscal policies are constrained first-best policies. The concern of this paper is that India's post-COVID level of public debt may be unsustainable or inefficiently high, and that fiscal policy changes are needed. The first results indicate that despite persistent primary deficits, the consolidated government debt-to-output ratio is likely to be sustainable, given the interest costs of the current debt portfolio and projecting recent GDP growth rates forward. As persuasively argued by the authors, this is not enough in a risky policy-making environment, nor for the anticipated future expenditures for adapting to climate change.

The presentation of the facts on debts and deficits of the Central and State governments is thorough and to the point. I particularly appreciate the detail of

the Appendix and the depiction of trends in government finances. The paper's analysis of debt sustainability considers both the government's capacity to maintain the present debt-to-GDP ratio and to avoid rollover risk managing its debt. The Government of India has long enjoyed the ability to borrow at long maturities, and the authors' conclusion that rollover risk is not a serious concern seems safe.

The paper evaluates debt sustainability by using estimated growth rates, interest rates, and projected primary deficits to simulate alternative paths for debt-to-GDP ratios for sensible scenarios. I think this approach is insightful and appropriate, though it contrasts with the econometric alternatives of presenting stationarity tests or estimates of fiscal rules. The problem with time series tests of debt sustainability is that these need to assume that the real interest rates and output growth are given. With stochastic interest rates, stationarity tests on the present value of net debt are unreliable. As the summary statistics shown in the paper reveal, the variation in real interest rates for India's public debt is large and the covariances of interest and growth rates with each other as well as with the primary deficit ratio are evident. Appendix C shows the covariation between interest rates (nominal and real) and the debt-to-GDP ratio in time series plots and regressions. These illustrate the point that the assumptions underlying conventional stationarity tests are not supported. The typical alternative is to estimate a fiscal rule that relates the primary deficit to the debt-to-output ratio. I am not sure if a regression should be added because the plots of primary deficits illustrate very clearly that the response of the consolidated and separate Centre and State primary surplus-to-debt ratios is weak at best. Overall, I think the authors have chosen a very informative way to look at India's debt sustainability.

As the authors argue, a sustainable debt-to-output ratio may not be a desirable level of public debt. The primary premise of the paper is that India's debt is excessive in terms of the opportunity cost of interest payments. These costs include foregone spending on social and economic priorities and insufficient capacity to accommodate the risk of negative shocks. Although the baseline positive differential between the growth rate and trend real interest rates implies a sustainable debt-to-output ratio, as the authors emphasized the risk posed by contingent liabilities, especially those of the States, is salient. The volatility of growth and interest rate poses another risk to sustainability, contributing to the argument for reducing public debt from its current level. The simulations provide some idea of how great these risks are, but they depend on selected scenarios. Perhaps, estimated moments for the growth rate and real interest rate could be used to quantify the risk in terms of fluctuations of the primary deficit that would be necessary to maintain the current debt-to-output ratio. However, contingent liability risk is more difficult to estimate.

The remaining two items on the list of the potential costs of high public debt are financial risks. Despite the reduction in the Statutory Liquidity Ratio (SLR), commercial banks, both private and State-owned banks, continue to

hold sizable shares of their assets in government bonds. The authors suggest an interesting potential risk to financial stability when banks hold large amounts of government bonds. The recent experience of Silicon Valley Bank underlines that banks need to attend to interest rate and inflation risk when they hold long maturity bonds, even of high quality, against deposits. The reforms leading to the development of the government bond market and relieving the banks of holding public debt at below market interest rates might have created this new risk. Rather than lend to the private sector, banks opted for government bonds paying market rates. It would be ironic if the ability of the government to borrow at long maturities and risk-averse bank management led to a bank crisis. I think the paper makes a good point worth regulatory attention.

The second financial risk noted in the paper is that further financial liberalization may reduce domestic financial institutional holdings of government debt, leading to a greater reliance on international markets for India's public debt. The fact that public debt is auctioned and traded at market rates does not mean that requirements to hold government bonds do not suppress interest rates. I have made this point here in the past. Further financial reforms and progress in banking could lead to an increase in government borrowing costs. It is interesting that the regression of interest rates on the debt-to-GDP ratio in the Appendices shows a negative relationship. Over the data horizon, financial liberalization and reform progressed so they may not actually have an adverse effect on borrowing costs.

Moving to the proposed policy responses, I think the authors make a convincing case that fiscal consolidation should depend on increasing public revenue rather than on expenditure reduction. They make an important contribution by comparing the consequences for growth of the public expenditure reductions to reduce government debt in 1991-92 with those of revenue increases in 2004-05 and 2012-13. The observation that the latter reforms did not last provides support for their strong conclusion that substantial fiscal reforms are necessary to reduce public debt.

In conclusion, this is an excellent paper on a pressing topic for fiscal policy in India. I think it makes its case for debt reduction and for new fiscal reforms to raise revenues, address contingent government liabilities, and mitigate moral hazard in fiscal devolution. I want to applaud how thoroughly the text and Appendices report the magnitudes and relationships in the data and how well the analysis is done and presented.

General Discussion

Martin Wolf commenced the discussion by highlighting how he is not worried about India when it comes to fiscal problems and rising debt levels, particularly when India's debt levels are compared to those of advanced economies like

the United States. He added that for India, what is crucial is the relationship between the real rate of growth and the real rate of interest. Further, he suggested that inflation adjustment is essential, and nominal figures can be really quite misleading. He asked: What are the obstacles to raising the revenue ratio by 3 or 4 percentage points? What can any government do about it?

The Chair of the session, N.K. Singh answered Martin Wolf's question by elaborating on the overall revenue structure for India and sharing his own experiences. He said that one inescapable conclusion he derived during his visits to the States in India was that after the enactment of the Goods and Services Tax (GST), the extent of autonomy that the States have on a wide range of taxes in their hands has been circumscribed greatly. The issue thus is how a State can levy indirect taxes. He added that even the idea of whether the States should be given latitude on direct taxes and leeway to have their own income tax in some form or another, which exists in many parts of the world, has met with huge opposition from the revenue department. He further explained that except for alcohol and a couple of other items, an area whose potential has not been fully realized in this country and offers States a huge scope to generate revenue, is property tax. He stated that second-generation reforms must now be introduced, while broadening the base and rationalizing the tax rates. He took forward the discussion on States and their lack of interest in the issue of property tax for the purposes of running the local bodies. He explained that Finance Commissions are not obliged to allocate financial resources to the local bodies; all that the Constitution says is that just as the President appoints the Central Finance Commission, the Governors of each State shall appoint a State Finance Commission at the end of exactly five years to help them improve the Consolidated Fund of the State, enabling them to fund the local bodies. In practice, what has happened is that successive Finance Commissions have continued to allocate large resources for the working of local bodies. This has absolved the State governments of the pressure to find mechanisms for raising finances.

M. Govinda Rao mentioned that an important issue in many developing countries, and particularly so in India, is the prevalence of a large number of tax preferences in the income tax system. In the last couple of years, the Finance Minister has tried to introduce an alternative tax system, with lower tax preferences and reduced rates. Another major issue is agricultural income tax, as despite the increasing commercialization of agriculture, revenue generation in this sector remains low. He also asked: Is it possible or fair to commit future generations to fiscal baptism?

Barry Eichengreen answered the above question by explaining about the political economy of fiscal policy. The growing deficit bias in the U.S.A. and in a variety of other advanced economies leads to a situation where taxes are cut in order to hamstring future governments with a different set of policy priorities that have become more attractive. So, spending now by a government on its

favorite public programs before giving office to another government with very different preferences has become more prevalent. He added that the authors have tried to strike a balance between being fiscally sanguine and being fiscally alarmist. The favorable growth rate and interest rate differentials that India has enjoyed are not guaranteed into the indefinite future, and they have described some reasons for that claim. The evolution of the debt ratio depends not only on the overall growth rate and interest rate differentials, but also on the primary budget deficit and India's overall budget deficit approaching 10 percent of GDP. Finally, he highlighted that accounting for inflation shows up as a contributing factor to debt consolidation in the authors' analysis, especially in the two debt reduction episodes that they look at in the paper, the first starting in 1991 for about six years, and the second starting in 2004 for about six years.

Poonam Gupta elaborated on the many challenges that were being discussed regarding the current level of debt, and the question of whether it was the right time to be an alarmist or a fiscal fundamentalist. She said that the question remains: Should we still be balanced in our approach and use some other measures? One such measure is already in the paper, which is climate transition and other priorities. Debt levels have not been a problem so far because of a very high household financial savings rate. The savings within the country are enough to be able to finance the deficit efficiently through financial repression, and consequently, the stress will not be seen in the market. Household net financial savings have started coming down because households have also started borrowing for their durable needs, and the equation may change in time, but we have no way to project when it will happen. Other challenges include the current level of public debt impacting the policy choices of the government. She also suggested that whenever a Finance Commission is set up, through horizontal devolution of taxes, richer States subsidize the poorer States. Another subsidization that happens is that of more prudent states subsidizing the profligate ones, which is true in the interest rate evening out. For instance, Gujarat can certainly borrow at a rate lower than Punjab, but these interest rates are being kept uniform.

Ratna Sahay referred to an IMF study, which found that financial crises are related not to debt levels but to rollover risks and the ability to service debt, which is what markets care about. This relates to the question that was raised earlier about how to convince policymakers because they are not concerned about fiscal deficits; what they do care about is actually growth and inflation.

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