KERALA ECONOMY
2024, VOL. 5, NO.1. pp 04-21.

ISSN : 2583-4436

GULATI INSTITUTE OF FINANCE AND TAXATION

Fiscal sustainability in Kerala: The trend in the recent decades

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Abstract

The present study examines public debt management at the sub-national level, assessing its challenges and implications. It also analyses the use of public debt for revenue rather than capital expenditure and explores fiscal sustainability as the primary objective. It analyses six indicators of state government fiscal sustainability, analyzing the growth of public debt in relation to nominal State GDP, real interest rates, primary surplus, and revenue accounts. Utilizing data from RBI Statistics on Indian States and State Finances spanning 1990-91 to 2021-22, it provides a comprehensive overview of fiscal trends in the region. The study highlights both favorable and unfavorable trends in fiscal sustainability indicators, emphasizing the need for effective spending in critical sectors like health and education. It underscores the importance of mitigating potential fiscal crises associated with public debt through prudent fiscal management strategies.

Public debt management at sub-national level is a walk over a thread bridge. Questions are raised whether public debt can be used for meeting revenue expenditure rather than capital expenditure. The straight answer may be negative which raises a counter question that all revenue expenses are non-developmental. Anyway, public debt management is skill that should be able to meet the objective of fiscal sustainability which is the main motto of this article.

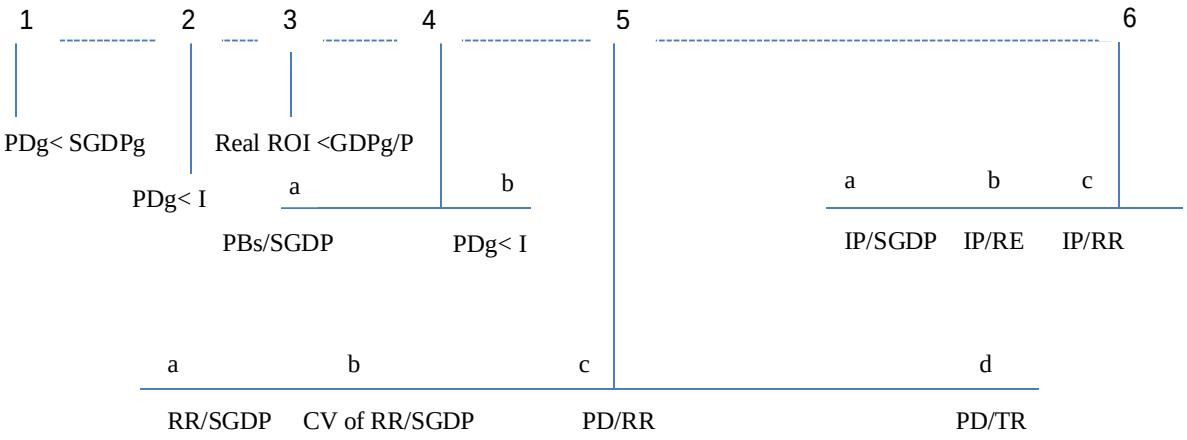
This study is organised in four sections. The theoretical frame and method of the study is outlined in the first part while the contextual theoretical development is briefed in the

subsequent part. The data presentation based on the theoretical frame is attempted in the third section with conclusion in the final part.

I. The theoretical framework and method of the study

There are six indicators of state government's fiscal sustainability (Kaur and Mukherji, 2023). One relates to the growth of PD and nominal State GDP. For fiscal sustainability, the rate of growth of PD should be less than that of the growth rate of the SGDP i.e., the difference between the rates of growth of PD and SGDP must be negative. The second indicator demands that the rate of growth of PD must be less than the effective rate of interest (PD – I < 0). The third indicator refers to the real rate of interest (RROI) and real SGDP. The latter is expected to be higher than the former (i.e., RROI < RSGDP). Primary surplus (PR) and nature of revenue accounts are the sub indicators of the fourth indicator. The first sub indicator (4.a) of the fourth indicator demands that the ratio of primary surplus to SGDP should be positive while the ratio between primary balance in surplus and interest payments (IP) must be greater than 100 (4.b). It implies that PRB surplus are expected to meet the liability of IP.

Chart 1: Indicators of fiscal sustainability at state level



Source: Balbir kaur and mukherjee, 2023.

The next main criterion (5th) deals with RR and public debt (PD). The first sub sector (5.a) shows the revenue receipts (RR) as a percentage of state GDP which is expected to rise continuously over time (RR/SGDP*100). Its variability (5.b) needs to be slipped down

regularly as the passage of time (CV of RR/SGDP). The ratio between PD and RR should also come down overtime which is the third sub criterion (5.c). The fourth sub indicator (5.d) pertains to PD and tax revenue (PD/TR). Their ratio must decline continuously with respect to time. The last main indicator is primarily based on interest payments (IP) which has three sub indicators. They are interest burden, IP as a percentage of revenue expenditure (IP/RE) and IP/RR. The interest burden (6a) is defined as IP as a percentage of GDP which needs to slip down overtime. 6.b and 6.c are also designed to move down along time scale for fiscal sustainability. The above discussed indicators are presented schematically in chart 1. The required data are taken from RBI Statistics in Indian States and State Finances. The coverage of the study is from 1990-91 to 2021-22.

II. Theoretical context

The issue of public debt has been a hot content of discussion since the days of Classical Economics. Budget deficit (BD) instead of current consumption culminates in rise in aggregate demand (Barro, 1989). Then private saving increases at a level less than the fall in tax, that leads to a reduction in desired national saving. In income-expenditure framework, it connotes that,

$S + (T-G) = I + Nx$ (Gordon, 1990), where S, T, G, I and Nx stand for saving, tax, govt. expenditure, investment, and net exports respectively.

Then, BD pulls down saving as argued by Barro. Based on the standard model, Barro (1989) explains the impact of public debt (PD) in the place of current taxation in a closed or open economy. In a closed economy, BD leads to an increase in the real rate of interest (ROI) to restore equilibrium. This evolves into a small size of productive capital. In an open economy, BD takes the trajectory of external borrowing in place of a rise in the real rate of interest but ends in a current account deficit. Any expected rise in real ROI occurs in the home market if it is a large economy. However, there is a weaker tendency to crowd out its internal investment in the short period and its stock of capital in the long period. Barro also argues that the CAD can reduce national wealth in a long period.

The serious debate on the burden of public debt kicks started during the Classical period. David Ricardo, one of the pillars of Classical tradition, postulates that a BD-financed cut in current taxes emerges in increased future taxes which is the same as the present value (PV) as

the initial reduction given the path of government expenditure (Barro, 1989). If the source of such finance is public debt, then such debts can expand forever at the existing rate of interest or higher, the PV of revenues cannot alter unless the government alters the PV of its expenditure. Provided the trajectory of government expenditure and non-tax revenues, a reduction in current-period taxes should be equalized by an equivalent rise in the PV of tomorrow's taxes.

Here comes the question of how households will settle their net wealth (Barro, 1989). Each one considers the difference between the PV of its income and the expected PV of taxes. In this context, fiscal policy can modify aggregate consumer demand, if only policy alterations influence the expected PV of taxes.

The above argument has important implications. BD and taxation have equivalent impacts on the economy. Thus, the name emerged as the Ricardian Equivalence Theorem (Barro, 1989). That is, a fall in government saving (T – G) is followed by a corresponding increase in desired private savings so that there is no change in desired national savings. Subsequently, there is no change in real ROI, no effect on investment, and no burden of the public debt or social security in the sense of Modigliani (1961) and Feldstein (1974).

Criticisms to Ricardian Equivalence Theorem

The future burden of current period public debt linked to cut in current taxes is doubtful in the sense that private decisions are influenced by limited horizon (Gordon, 1993). Moreover, parents leave much of their net worth of houses to their children without a conscious decision to save for the future generation. He also argues that households borrow at a higher rate than the rate of the govt. securities. It indicates that households attach a higher 'discount rate' to future govt. taxes than the official interest rate on public bonds.

Keynesian approach

Public debt funding can have an enhanced multiplier effect on income and employment (Das, 2016). Yet, it fails to distinguish between govt. consumption and or investment expenditure. Its failure is also seen in showing different sources of financing such as monetization, external borrowing, or internal borrowing. Keynes argued later that full employment could be assured via raising capital expenditure with the condition that revenue expenditure was under

control and capital expenditure was incurred efficiently. If the capital expenditure brings in a positive return, the deficit will remain in the controllable limit.

Keynesian approach was formally developed by Domar in 1944 and he argued that if the GDP would grow at an increasing rate, the rate of growth of debt would converge to the growth of GDP. Then, the Debt-GDP ratio would tend to a stationary state. It implied that a higher growth of GDP would bring down the Debt-GDP ratio. This could again facilitate enhanced economic growth provided a sizable quantity of the borrowed funds were invested in health, education, and R&D (Das, 2016; Domar, 1944).

Post-Keynesian view on public debt.

Increased future taxes to service PD will have not only a 'burden' but also an 'excess burden' (Phelps, 2022). The latter points to less work and saving which itself would result in increased taxes and reduced NI and saving. Another aspect that touches our mind is that enhanced interest income from government bonds pulls the income earners on higher marginal tax rates.

According to the Neo-classical view, PD creates a wedge between wealth and capital (Phelps, 2022). That is, PD raises wealth but may or may not reduce capital. This would augment consumption but slide down capital accumulation and productivity growth. US experience after World War I, the Spanish Flu pandemic, and World War II showed that PD accumulated, consumption zoomed but investment – output ratio shrank (Modigliani, 1961). Phelps and others (2022) held studies on the relationship between PD and employment between 1970 and 2019 in the context of G7 countries. The finding is that PD pushes down real ROI followed by a fall in wages, employment, and future consumption. There is another dimension to the Barro-Ricardo Equivalence theorem (Gordon, 1993). When the USA followed the tax cut in the early 1980s, it was expected that the saving rate would increase after the tax cut which did not take place then. In this context, Phelps (2022) concludes that the views of both post-Keynesian and neo-classical economists have their own relevance while considering the macroeconomic issues in general.

III. Recent fiscal indicators in Kerala

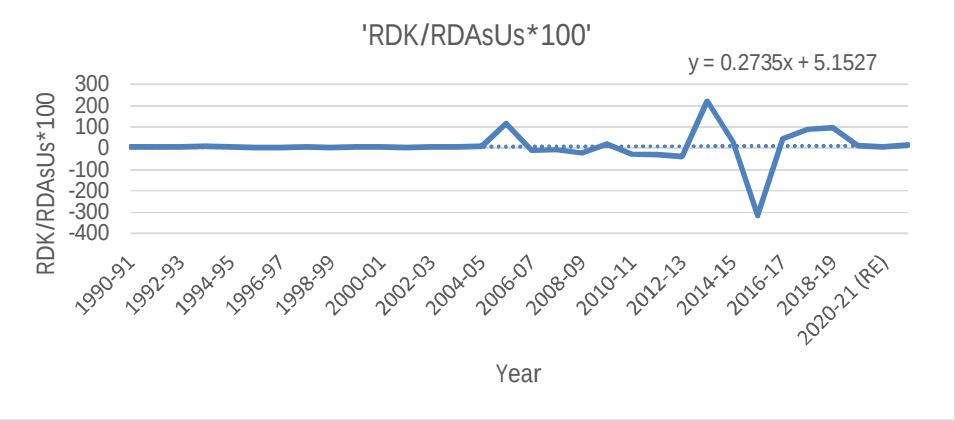
The conceptual frame outlined in Chart I is elaborated in this section based on the data provided by RBI Statistics on Indian States and State Finances. The discussion is made in the sequence of the variables presented in the mentioned chart. The trend in the various fiscal variables in Kerala is discussed for a period since 1990-91.

As per the theoretical discussion in section I, the need for public debt arises in the context of budget-related deficits. In the Indian scenario, three types of deficits are referred to, such as revenue deficit, fiscal deficit, and primary deficit. A revenue deficit is the excess of revenue expenditure over revenue receipts. Fiscal deficit connotes the difference between total budget expenditure and total receipts except the borrowing. When the interest payment is deducted from the fiscal deficit, the primary deficit is obtained. The trend in these three deficits is discussed below.

Revenue deficit in Kerala

Revenue Deficit in Kerala as a percentage of all states and UTs in India moved with the trend till the mid-2000s. It deviated from the trend since then till 2018-19. During 2005-06 and 2018-19 when deviation took place, the ratio registered negative values for 7 years as there was revenue surplus for all states and UTs. Kerala did not register any surplus during that period (Figure 1).

Figure 1: Revenue deficit in Kerala (RDK) as a percentage of revenue deficit of all states and union territories (ASUTs) in India during 1990-91 and 2021-22

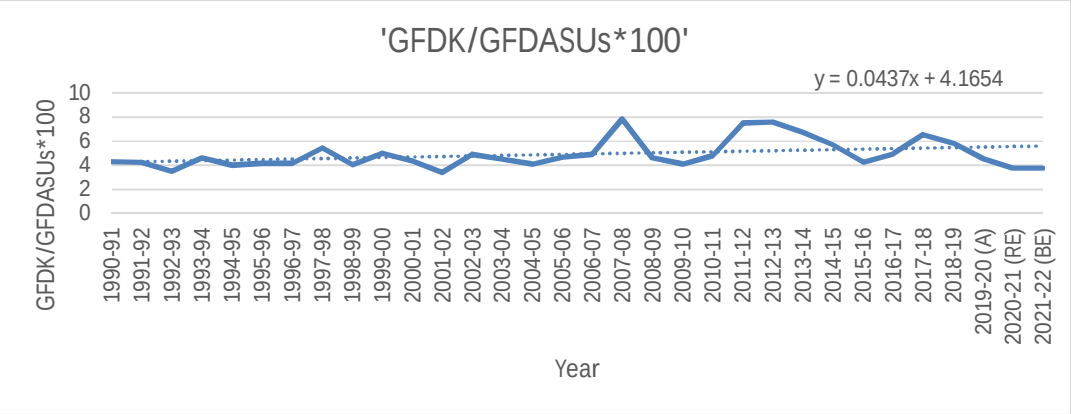


Source: Based on RBI Data.

Trend in gross fiscal deficit in Kerala

The gross fiscal deficit in Kerala as a percentage of GFD of all states and UTs has been oscillating throughout the three decades under consideration (1990-91 to 2021-22). Oscillations were higher after 2007-08. The share ranged from 3.40 in 2001-02 to 7.57 in 2012-13. (Figure 2). It implied that Kerala's share in gross fiscal deficit (GFD) out of GFD of all states and Union Territories in India was rising and fluctuating in the previous decade.

Figure 2: Gross fiscal deficit in Kerala as a percentage of gross fiscal deficit of all states and UTs in India during 1990-91 and 2021-22

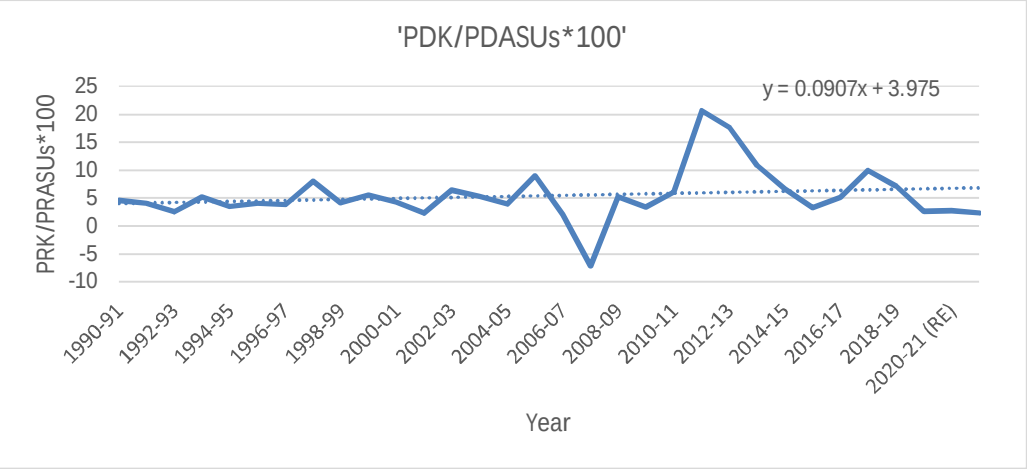


Source: Based on RBI Data.

Primary deficit in Kerala.

The primary deficit as a percentage of the primary deficit of all states and UTs in India showed oscillations after 1990-91. It has been higher after 2006-07, especially between 2006-07 and 2015-16. The share started to decline after 2017-18 (Figure 3). The share of Kerala in PRD ranged from 2.32 in 2000-01 to 20.63 in 2010-11. It may be noted that wider oscillations were noted in the GFD case too in the previous decade.

Figure 3: Primary deficit in Kerala as a percentage of the primary deficit of all States and UTs in India during 1990-91 and 2021-22



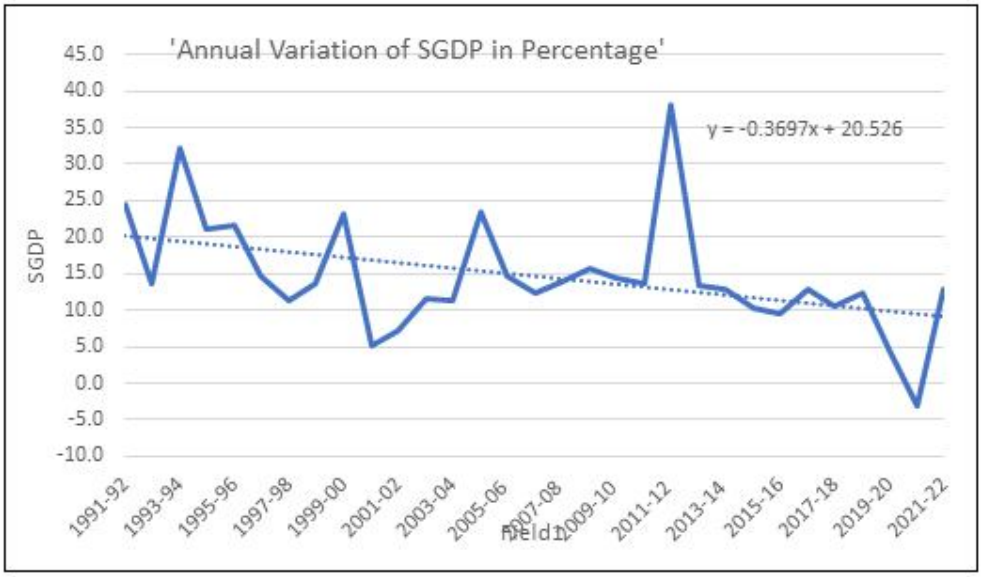
Source: Based on RBI Data.

Fiscal sustainability indicators in Kerala

It is time to analyse the public debt in Kerala in the light of the conceptual frame as outlined in chart 1. It is presented in the order of the six sustainable indicators mentioned in that chart. Initially, the case of the relationship between growth in PD and State Domestic Product (SGDP) is contemplated.

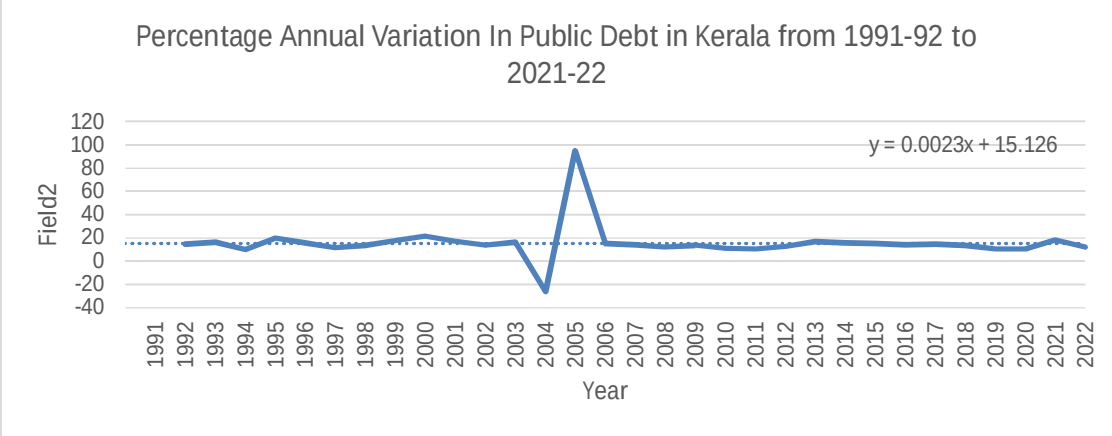
The trend of annual percentage variation of PD was very low and positive compared to the negative trend of annual percentage variation in Kerala's SGDP since 1990-91. There is only a weak but positive correlation (0.198) between the percent annual variation of SGDP and PD in Kerala during 1990-91 and 2021-22. Moreover, fluctuations in percentage annual variation in SDGP were more than that of PD in Kerala. As per the first fiscal sustainability indicator, the growth rate of PD should be less than the growth rate of SGDP, but the former was greater than the annual growth of the SGDP of Kerala during the reference period (Figures 4 & 5).

Figure 4: Annual variation of SGDP in percentage



Source: Based on RBI Data.

Figure 5: Percent annual variation in public debt in Kerala from 1991-92 to 2021-22



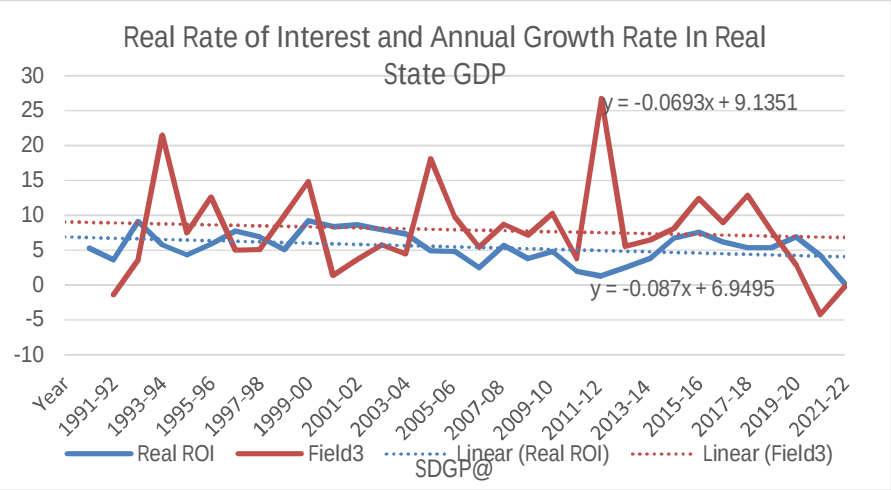
Source: Based on RBI Data.

Growth in real rate of interest (RROI) and real SGDP

The second indicator is not elaborated here as reliable data is not available at present. The third indicator of fiscal sustainability shows the relation between RROI and real SGDP. The annual growth rate of real GDP was greater than the RROI in 20 years between 1991-92 and 2021-22 (Figure 6). The annual growth rate of the former was moderately higher in 1993-94,

95-96, 2004-05, and 2011-12, 2015- 16 and 2017-18. The sustainability indicator demands that the growth rate of real SGDP must be greater than the RROI which generally pointed towards fiscal sustainability since 1990-91.

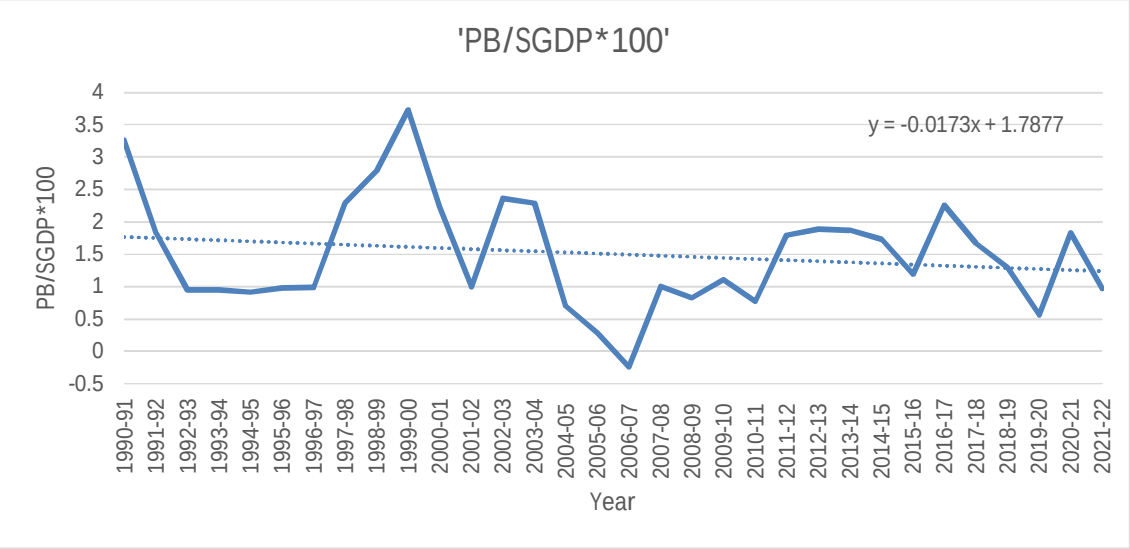
Figure 6: Real rate of interest and annual growth rate in real state GDP



Source: Based on RBI Data.

Fourth Criterion: Primary surplus and primary revenue deficit

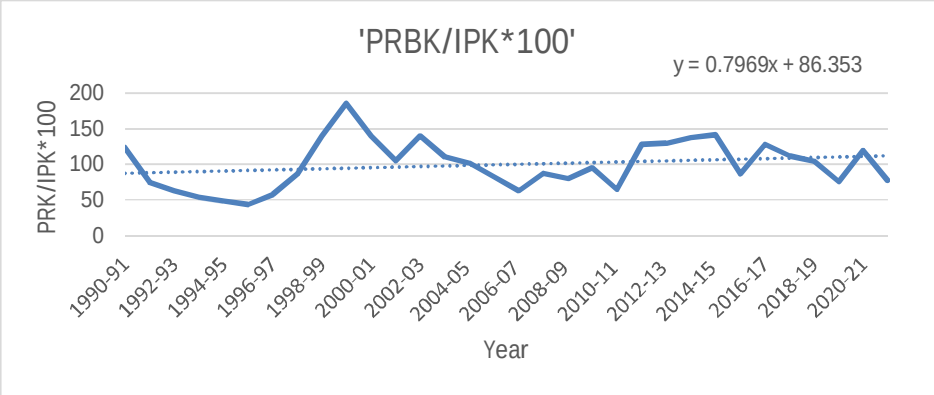
Figure 7: Primary surplus (deficit)/ SGDP in Kerala in percentage from 1990-91 to 2021-22



Source: Based on RBI Data.

The fourth indicator is related to primary balance and primary revenue balance, which have two sub-indicators. One deals with primary balance surplus (deficit) and SGDP (4a) which must be greater than zero. As the original data is deficit form except in 2006-07, their ratio may be treated as negative and is against the fiscal sustainability indication. The primary deficit in Kerala was the highest in 1990-92 and 1999-00 (Figure 7). This ratio (deficit) has generally declined during the last three decades.

Figure 8: Primary revenue balance (deficit)/ IP in Kerala in percentage from 1990-91 to 2021-22



Source: Based on RBI Data.

The second sub-indicator (4b) in the fourth indicator of fiscal sustainability wants the primary revenue balance as a percentage of interest payments (IP) to be more than 100. Considering the primary revenue deficit in Kerala throughout the study, the number of years with less than 100 may be taken as a step towards fiscal sustainability. There were only 10 such years between 1990-91 and 2021-22 (Figure 8). Thus, this sub-indicator was not favorable to Kerala.

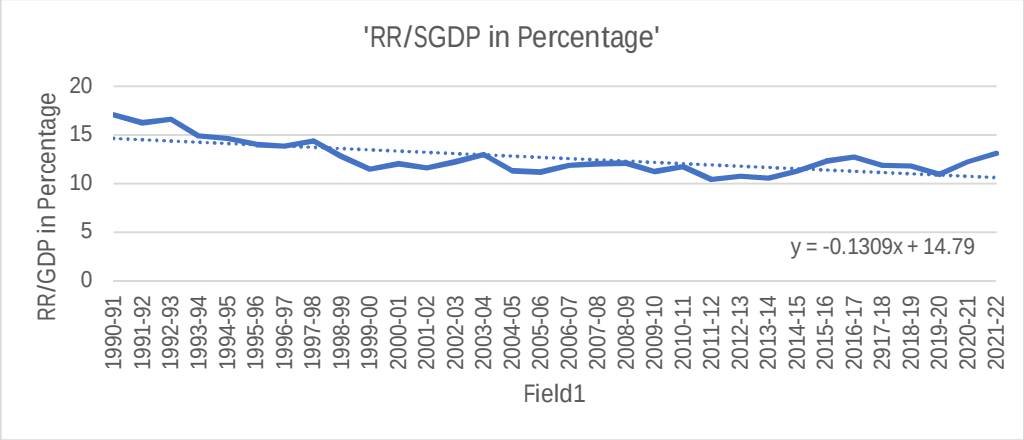
The fifth indicator: RR and PD.

The fifth indicator is mainly based on revenue receipts (RR) and public debt (PD). It has four sub-indicators viz. RR/SGDP, coefficient of variation (CV) of RR/SGDP, PD/RR, and PD/TR, where TR stands for tax revenue.

The percentage of RR/SGDP (5.a) of Kerala ranged between 10.44 and 13.07 with a mean value of 11.723 during 1990-91 and 2021-22). The mean value remained at comparable levels even if the period is divided as before and after 2010-11. The mean values are 11.72,

11.82, and 11.81 for the whole period, 1990-91 to 2010-11 and 2011-12 to 2021-22 respectively. The general trend line in the RR as a percentage of SGDP (5a) had been declining since 1990-91 in Kerala. The declining trend reversed after 2014-15. It implies that the state's effort to raise more revenue started getting positive results during the recent years. In the case of the second sub-indicator (5b), the CV of RR/SGDP need to come down in the long run. Its CV was 4.28 for the whole period of analysis but it was 2.17 and 6.88 respectively before and after 2010-11. It connoted that the CV of RR/SGDP increased after 2010-11 which indicated against fiscal sustainability. However, the revenue efforts were better than the trend after 2014-15. The general trend showed sluggish progress in recent years where this criterion demanded a continuous increase (Figure 9). It implies that more efforts in revenue receipts are required.

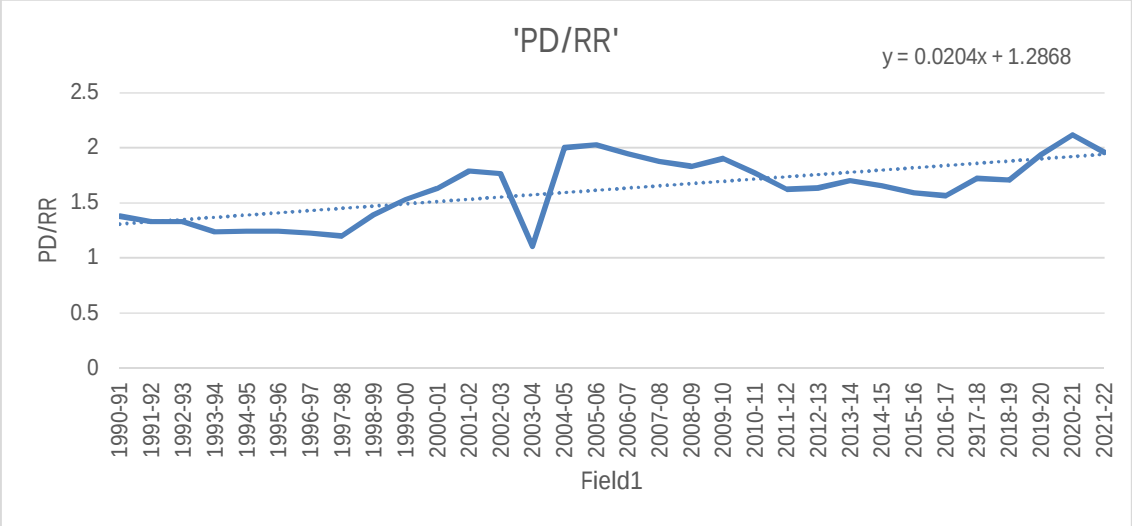
Figure 9: Trend in RR/SGDP in Kerala in percentage from 1990-91 to 2021-22



Source: Based on RBI Data.

The third sub-indicator (5c) deals with the ratio between PD and RR. To achieve fiscal sustainability, this ratio needs to fall continuously but it did not take place in Kerala during the reference period (Figure 10). It increased during 2004-5 and 2006-07 but declined later up to the pre-covid year (2019-20). PD/RR ratio was above the trend line between 1990-00 and 2010-11 except in 2003-04. This again increased after 2019-20. This ratio had a general upward trend with a small slope.

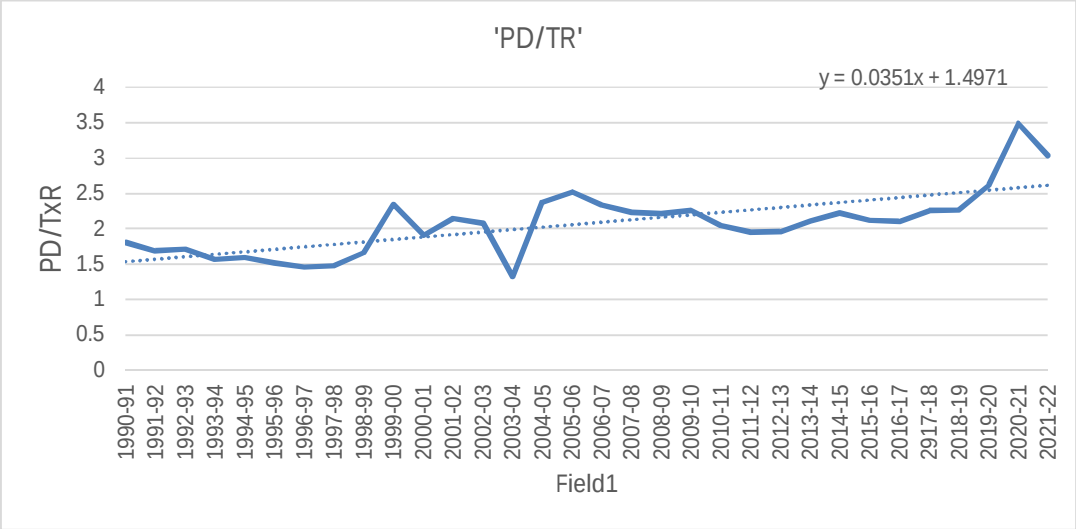
Figure 10: Trend in PD/RR in Kerala in percentage from 1990-91 to 2021-22



Source: Based on RBI Data.

The PD/TR (5d) is also expected to decline over time to achieve fiscal sustainability. The general trend was rising with a slope of 0.035 between 1990-91 and 2021-22. The actual path of PD/TR had a higher level of movement in the early 1990s, and in the decade of 2000s except in 2003-04 and since 2019-20. It implied that this ratio declined below the trend line in the late 1990s and the previous decade (Figure 11).

Figure 11: Trend in PD/TR in Kerala in percentage from 1990-91 to 2021-22



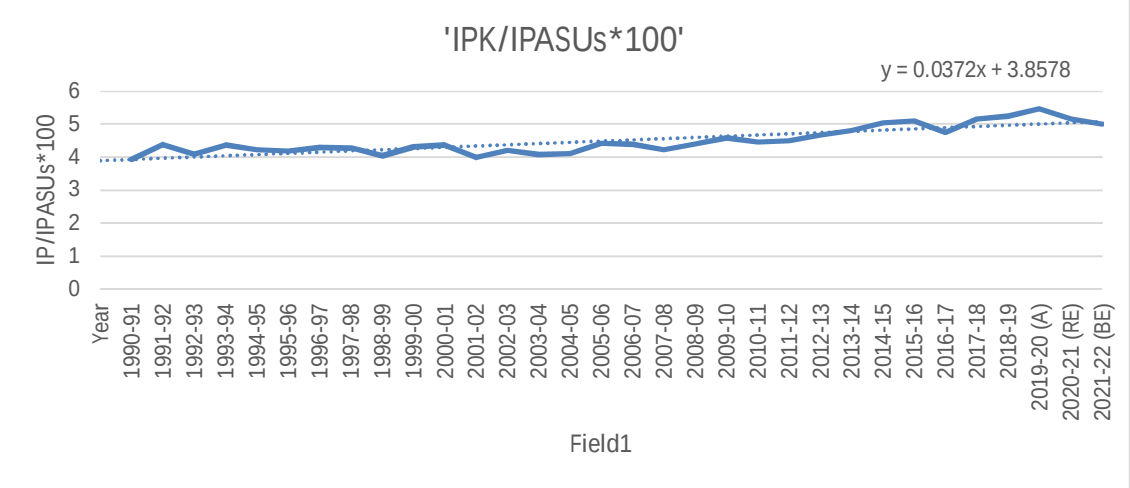
Source: Based on RBI Data.

Based on RBI data.

Interest payments in Kerala

The sixth indicator is prominently linked to the interest payments. The percent of interest payments (IP) of Kerala to the IP of all states and UTs in India was 3.9 in 1990-91 which gradually moved to 5 percentage by 2014-15. It hovered around it until date. It implies that the IP of the state has been rising generally not only in absolute but also in relative terms. The ratio of IP in Kerala to IP of all states and UTs in India was above the trend line till 1997-98 and after 2014-15 except in 2016-17 (Figure 12).

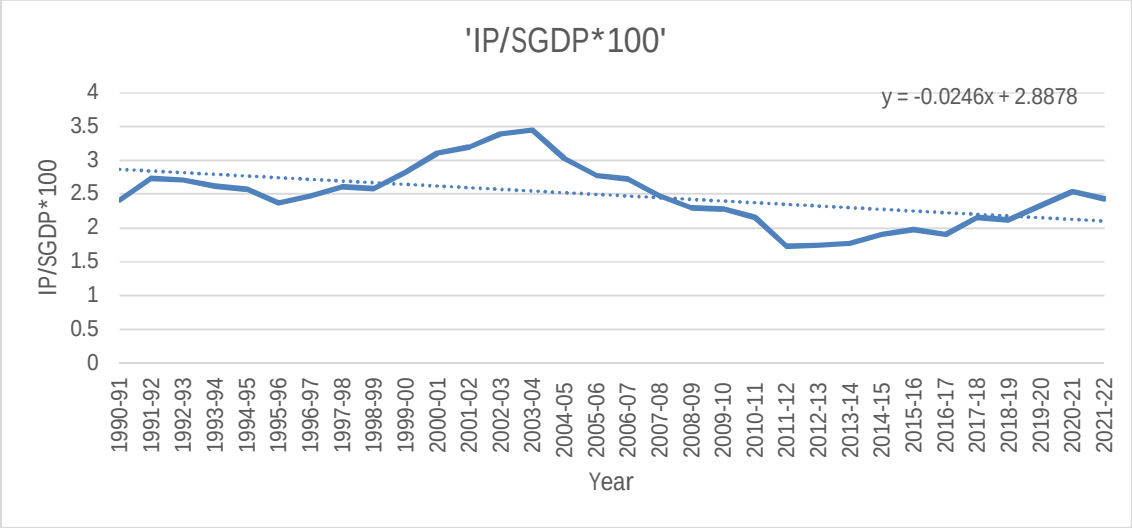
Figure 12: IP in Kerala as a percentage of IP of all States and UTs during 1990-91 and 2021-22.



Source: Based on RBI Data.

As per the conceptual framework of the study, IP/SGDP (6a) must move down over time. It started to decline in 2003-04 which continued till 2011-12 but turned to rise since then (Figure 13). The general trend since 1990-91 had been slipping down but the trend between 2000-01 and 2005-06, and since 2017-18 was that the ratio was above the trend line. The increase in this ratio since 2017-18 is a serious issue to be tracked (Figure 13).

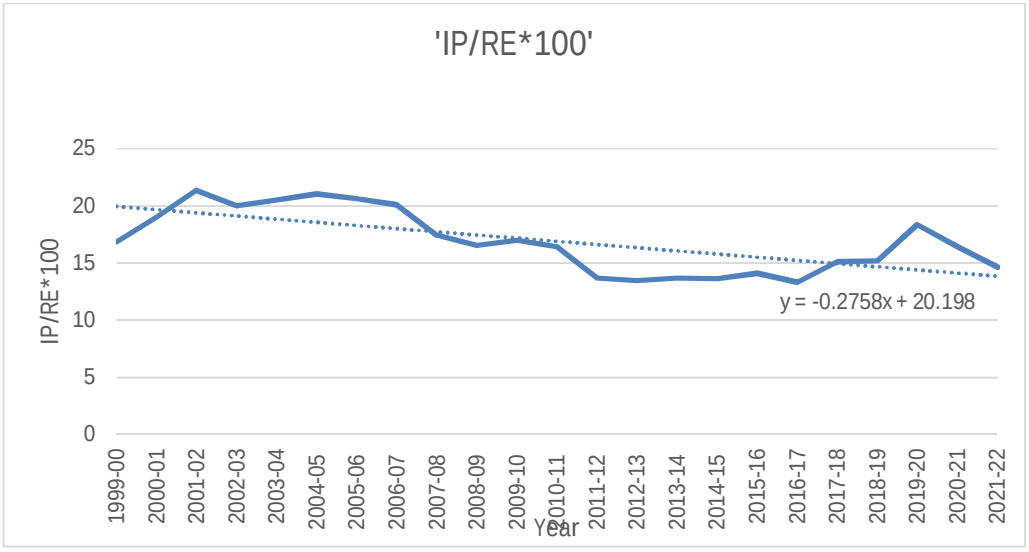
Figure 13: Trend in interest payments/ SGDP in Kerala between 1990-91 to 2021-22



Source: Based on RBI Data.

The IP as a percentage of revenue expenditure (6b) showed a trend in the expected line. It had a negative slope during the last 22 years, especially during the previous decade. The fiscal sustainability indicator demands a continuous decline over time as far as this ratio is concerned. Thus, this ratio is favourable to Kerala.

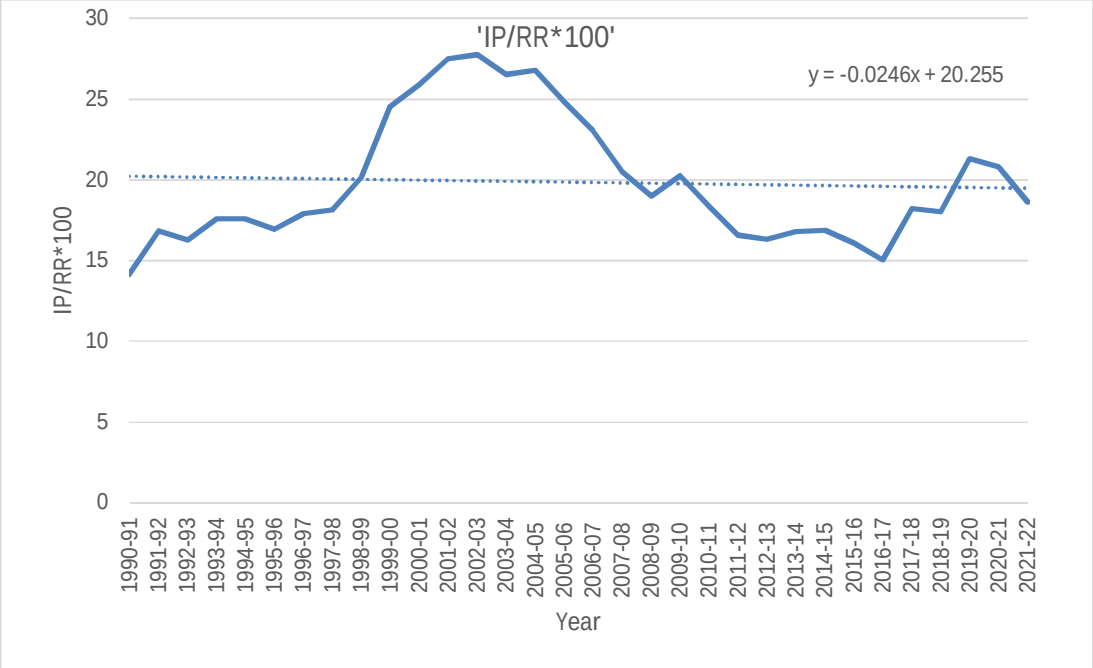
Figure 14: Trend in interest payments/ revenue expenditure in Kerala between 1990-91 to 2021-22



Source: Based on RBI Data.

The third sub-criterion (6c) had a sluggish declining trend as per the expected lines. The interest payments about RR were the above trend during the early part of the 2000s, and the downward march continued till 2016-17 (Figure 15). After that, the ratio had an oscillated upward trend which must be corrected. A look from 1990-91 showed that this ratio increased up to 2002-03 though it was below the trend line till 1998-99. As per the argument by Kaur and Mukherjee (2023), if the mean of interest payments exceeds one-fourth of revenue receipts, it is treated as above the tolerable level. It was so between 2000-01 and 2004-05 but was not so after that.

Figure 15: Trend in interest payments/ revenue receipts in Kerala between 1990-91 and 2021-22



Based on RBI Data.

The emerging ideas are summarised in the following section.

IV. Conclusion

This study considered five main indicators and their sub-indicators to fix the fiscal sustainability in Kerala for 1990-91 and 2021-22. In the case of the first indicator, the percentage annual growth of public debt was greater than the percentage annual growth of SGDP which is opposite to the set principle. Fluctuations in the growth of SGDP were more than the slow rise in the growth of PD during 1990-91 and 2021-22. The third indicator

requires that the real rate of interest (RROI) must be less than the real growth of SGDP. It is observed that the latter was greater than the former for 20 years out of the three decades of analysis. In this sense, the third indicator pointed towards fiscal sustainability in the state. The fourth indicator is composed of two sub-indicators such as primary balance in surplus by SGDP (4a) and primary revenue balance and IP (4b). The 4a is expected to be positive but it has been negative throughout the reference period except in 2006-07. This is against the fiscal sustainability indicator, though it has a general declining tendency. The second sub-indicator (4b) should have been more than 100 continuously (less than 100 if the deficit persists). There were only 10 such years since 1990-91 and hence was not favourable to fiscal sustainability in Kerala. Though the first and third indicators represent the sufficient condition of fiscal sustainability, the necessary condition is represented by the fourth indicator which is not favourable to Kerala. Four sub indicators composed the fifth indicator. The ratio of RR and PD is the first sub-indicator (5a) of the four sub-indicators in the 5th main indicator. Its general trend has been declining against a rising requirement, but the trend reversed after 2014-15. This is a favourable change. The coefficient of variation of the second sub-indicator (5b) should have come down over time, instead, it increased. So, this sub-indicator did not satisfy fiscal sustainability. The third sub-indicator (5c) has a general sluggish upward trend which should have been declining. Thus, this indicator also did not warrant fiscal sustainability in the state. The ratio between PD and tax revenue (TR) is expected to fall regularly but increased instead in Kerala (but had only a small slope). The sixth indicator is mainly based on IP which has two sub-indicators (6a&b). The 6a deals with IP/SGDP which ought to have come down in general, and it was so in general. However, the trend started to reverse after 2016-17. The second sub-indicator (6b) refers to the declining IP as a percentage of revenue expenditure. This was on the expected line as per the fiscal sustainability indicator. The third sub-indicator (6c) of the 6th indicator has a sluggish declining trend as per the expected lines.

In short, out of the eleven indicators and sub-indicators, three indicators are favorable to the state (3 and 6b &c), while six indicators are unfavorable (1, 4a, 4b, 5b, 5c, and 5d) and two indicators had a mixed trend (5a, 6a). Thus, fiscal sustainability in Kerala has been showing a mixed trend since 1990-91 though the state must consider the necessary condition of fiscal sustainability. As long as the state spends on health and education effectively (Domar condition), public debt need not create a fiscal crisis in Kerala.

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