Kerala's Debt Dynamics and KIIFB

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By

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KERALA STATE PLANNING BOARD
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DECLARATION

I hereby declare that this research report entitled "**Kerala's Debt Dynamics and KIIFB**" is an authentic record of the research work carried out by me under the guidance of Dr. K N Harilal, Member, Kerala State Planning Board, for the Internship Programme 2017-18. No part of it has previously formed the basis for the award of any degree, diploma, associate ship, fellowship or any other similar title or recognition of any other University or Institution.

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Vandana T R

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ABSTRACT

The paper aims to briefly describe the dynamics of state finances of Kerala over the last decade and the fiscal constraints faced by the government to maintain the welfare and development spending for the Kerala model. It briefly describes the alternative development path sought in the era of fiscal conservatism and the possible consequences on Kerala's debt sustainability. The paper concludes with the limitations to the study and suggests possible alternative measures for the same.

INTRODUCTION

The deterioration in the fiscal performance of the states since the mid-1980s is reflected in all major indicators, viz, fiscal deficit, revenue deficit and debt-GDP. The debt ratio of states rose persistently to reach a high level of 28.1 per cent in 2002-03 and thereafter to 23.2 per cent in 2016. In absolute terms, the outstanding debt of states increased almost fivefold to Rs 6,94,289 crore in 2002-03, up from a level of Rs 1,10,289 crore in 1990-91 and thereafter to 31,74,070 crore in 2016. The high level of debt is more worrisome when in conjunction with the level of contingent liabilities, and the rising incidence of delays/ defaults on guarantees issued by states. The debt-GDP ratio is also important at the sub-national level as it has a spill-over impact on sovereign ratings by credit rating agencies.

Studies (Prasad et.al, 2004) have shown that attaining sustainability would necessitate either of the following:

(i) Spread between interest rate and GDP growth rate is increased further to accommodate the prevailing primary deficit. This would essentially require debt-structuring measures such as debt-swaps and lowering of interest cost on fresh borrowings.

(ii) Alternatively, the level of the primary deficit itself has to be reduced to the level equivalent to the spread between the interest rate and GDP growth rate. This indicates the need for fiscal restructuring.

Three scenarios are generally prescribed with a view to bring states' debt on the sustainable path which are discussed below (Prasad et.al, 2004):

(1) Entire State Government Debt is swapped with fresh market borrowings.
(2) (1) plus reduction in interest rate on non-market borrowings.
(3) (2) plus progressive reduction in primary deficit.

Non-Market Borrowings from the centre and state can go through a system of reducing interest costs from both. The interest cost on central loans viz., centrally sponsored schemes (CSS) and externally aided projects (EAP) to be reduced to reduce the burden on states as it accrues to a sizeable proportion of fresh loans and advances from the government. States are advised to align the interest rates offered by them on their own public account borrowings to market rates. This was because the differential between the rates of interest faced by the centre and the states widened significantly in the 1990s, which continued into the 2000s [Chandrasekhar and Ghosh 2005].

Market Borrowings can incentivized by enhancing the risk-return equation. The states can also achieve debt sustainability by incentivizing market willingness which would require a reduction in risk perception through measures like

i) setting up of consolidated sinking fund
ii) fixing a ceiling on guarantees, introduction of guarantee fees and the constitution of a contingency fund,
iii) transparency at the sub-national level, with regard to budgeting, accounting and auditing practices, especially those regarding contingent liabilities which would enable investors to make informed judgments about the repaying capacity of the government,
iv) fiscal responsibility and political consensus through implementing a mix of legislations relating to balanced budgets, caps on deficit/ debt, restrictions on borrowings, etc.,
v) **Infrastructure financing through fresh borrowings, repayments for which could be escrowed from the revenue stream generated by such projects**. **This method would work as credit enhancement and would reduce the cost of funds for the states. States are also advised to explore the possibilities of getting financing through public-private partnerships.**
vi) Securitisation of past dues in order to clean the balance sheets of state governments
vii) Statutory limit on size of state's debt/borrowings as suggested by Finance Commissions.

However, states are allocated borrowing limits under the market borrowing programme in consultation with the Niti Ayog; loans from the centre are also pre-determined as part of plan assistance and from the latest budget, as a part of scheme. In addition to other concerns, a hard budget constraint operates at the state level. Moreover, the spillover in the revenue deficit of state governments which goes beyond the budgeted figure is accommodated mostly by reduction in capital expenditure.

A means to tackle this problem through innovative financing is through the route of extension of contingent liabilities and guarantees, through Special Purpose Vehicles and Public Private Partnerships.

KIIFB prescribes to this route of infrastructure financing through a mode of PPPs and a combination of market borrowings. More about KIIFB will be discussed in detail further in the paper.

KERALA'S FISCAL DYNAMICS

The Kerala Fiscal Responsibility Act was first enacted in 2003 as "An Act to provide for the responsibility of the Government to ensure prudence in fiscal management and fiscal stability by progressive elimination of revenue deficit and sustainable debt management consistent with fiscal stability, greater transparency in fiscal operations of the Government and conduct of fiscal policy in a medium term fiscal frame work and for matters connected therewith or incidental thereto" "Preamble –Whereas it is expedient to provide for the responsibility of the Government to ensure prudence in fiscal management and fiscal stability by progressive elimination of revenue deficit and sustainable debt management consistent with fiscal stability, greater transparency in fiscal operations of the Government and conduct of fiscal policy in a medium term fiscal frame work and for matters connected therewith or incidental thereto."

Moreover, the FRBM act and the Finance Commissions following it have constrained the state governments further. (Kannan and Mohan, 2004) argues that according to the Kerala government, the central devolution to Kerala decreased after the implementation of the 11th Finance Commission's recommendations, the reason for this being the change in formula for devolution of funds by the 11th FC as mentioned in the Economic Review, 2002 of the government of Kerala. The implementation of the Gadgil formula for provision of loan and grant (70:30) adopted by the Planning Commission had also been unfavorable to states esp Kerala. Kerala which has undergone a demographic transition was also affected by the formula as it also gave a large explicit and implicit weightage to population.

In addition to the burden arising from declining grants, unfavorable devolution criteria and the high cost of debt, (Kannan and Mohan, 2004) also attribute i) the resistance to the levy of tax and non-tax revenue by demand and interest groups and ii) decentralisation of funds without full transfer of functions and staff for the fiscal crisis of Kerala.

With regards to the expenditure side, the Kerala government, the increased salary payment as a result of the Pay Equalisation Committee recommendations in the 1990s and the fiscal crisis that ensued persisted till the mid 2000s. According to (Isaac and Ramakumar,2006),

the expenditure compression, closure of sick PSUs and all-round increases in user charges which were the conditionalities in the semi-structural adjustment loan from the ADB in 2000 exacerbated the fiscal crisis. Moreover, these prescriptions were further reinforced by the Fiscal Responsibility Act 2003, which had set the goal to wipe out the revenue deficit and reduce the fiscal deficit to 2 per cent of the GSDP by 2006-07. However, these short term measures were “bound to show up as expenditure in the following years" [GoK 2003: 14]. The following years were faced with an even greater difficulty in adhering to the Medium-Term Fiscal Restructuring Programme (MTFRP) that had been drawn up following the recommendations of the EFC. During 2005-06, there was a temporary relief due to the increase in central transfers due to VAT compensation and the postponement of payments of certain liabilities. (Isaac and Ramakumar, 2006). The UGC scales and arrears of pay disbursement in 2011-2012 further added to the fiscal burden by adding to the revenue expenditure. Moreover, due to the complementarities between developmental and non-developmental expenditure in Kerala, the non-development expenditure arising from the past development expenditure (e.g. pensions for past salaries) is quite high in Kerala. Additionally, development expenditure in terms of health and education as well as wages and salaries are high and are reasons for revenue deficit.

The revenue side of the balance sheet in Kerala is also afflicted by i) remittances not being part of the tax base ii) inadequate tapping of tax potential evidenced by growing consumer expenditure (Isaac and Mohan, 2016) and iii) Services sector being outside the tax net of the state (till the GST implementation).

The initial bend towards expenditure led fiscal correction didn’t meet with success and lasted only a year (2001-02). It was the revenue led fiscal correction that was met with success, however limited in 2006 along with higher capital outlay. The attempts for the same are proposed for the coming years in (Isaac and Mohan, 2016) that lays out the plan for fiscal consolidation involving the following steps i) tapping intensively the potential of own tax revenue ii)spending more on social sector and iii) having a substantially higher capital outlay.
As the current rates suggest, only one-third of the entire fiscal deficit is attributed to capital outlay. A reversal of this trend would entail a major change in revenue led fiscal consolidation.

The trends in capital outlay therefore examined yields that it stands at 1.01 % below the national average of 2.40 % (Isaac and Mohan, 2016) in the period average between 2005-06 and 2013-14. This however, rose from 2006-07 and a sustaining of the same would be necessary to maintain the increase in capital outlay by adhering to FFC norms at the same time. This means of fiscal consolidation is suggested through the use of SPVs here KIIFB

that aims at providing "a higher capital outlay on infrastructure which would be growth inducing and which would in turn provide a higher base for revenue mobilization and provide more room for development expenditure". This comes at a juncture when expenditure cuts are neither reasonable nor feasible for the Kerala model that emphasizes social sector spending.

Moreover, attributing the reasons for interventions that would have an impact after the Fourteenth Finance Commission, (Chakraborty, et.al, 2017) argue that the introduction of Ujwal Discom Assurance Yojana (UDAY) scheme and an increase in the borrowing powers of states to a maximum of 0.5% of the gross state domestic product (GSDP) are examples of such ex ante policy interventions that would adversely affect the debt-deficit of states.

Pertaining to Kerala, the revenue deficit is one of the highest among the states at -1.88. The deficit stands at -3.33 only slightly above the FRBM threshold. Interest Payments to Total Revenue Receipts stand at 0.149 and is one of the highest as well. However, as the FRBM Act mandates that sub-national governments in India should maintain a zero revenue deficit or revenue surplus and a fiscal deficit threshold of 3% of GSDP, Kerala still has to manage its finances to reach the prescribed criteria.

In addition to the 3% fiscal deficit limit, the FFC sets additional criteria for eligibility to borrow for the state governments.

i) The states will be eligible for flexibility of 0.25% over and above this for any given year, for which the borrowing limits are to be fixed if their debt–GSDP ratio is less than or equal to 25% in the preceding year.

(ii) States will be further eligible for an additional borrowing limit of 0.25% of GSDP in a given year for which the borrowing limits are to be fixed if the interest payments are less than or equal to 10% of the revenue receipts in the preceding year.

(iii) The two options under these flexibility provisions can be availed of by a state either separately, if any of the above criteria is fulfilled, or simultaneously if both the above stated criteria are fulfilled. Thus, a state can have a maximum fiscal deficit–GSDP limit of 3.5% in any given year.

(iv) The flexibility in availing the additional limit under either of the two options or both will be available to a state only if there is no revenue deficit in the year in which borrowing limits are to be fixed and the immediately preceding year (Finance Commission of India 2015).

However only five states have qualified for this criteria and Kerala isn't one of them either.

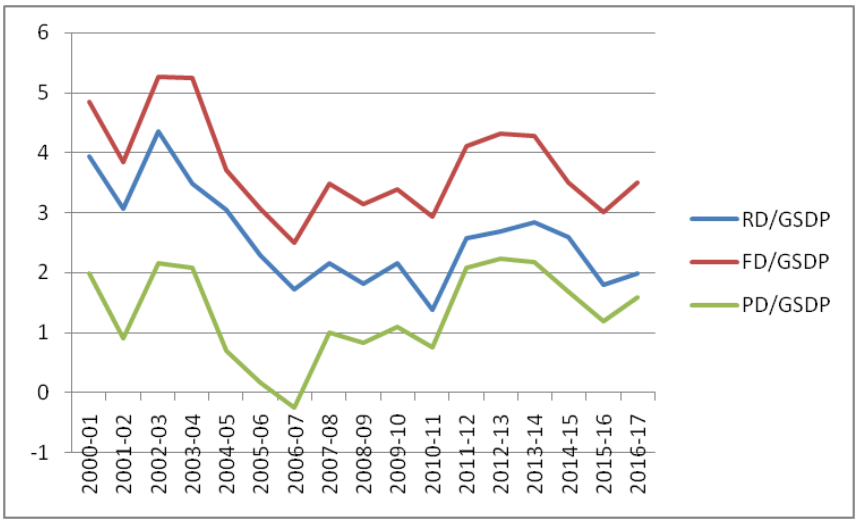
Moreover, (Chakraborty,2017) also argue that while in nominal terms the aggregate transfers to states and union territories have increased, transfers as a percentage of GDP have declined marginally to 6.41% in 2017–18 (BE) from 6.53% in 2016–17 (BE). This reflects the decline devolution of tax shares, FC grants and other central transfers.

In addition, the abolition of plan related grants and the restructuring of scheme-related grants and other transfers from the centre has placed a larger burden on the latter to finance these schemes, thus reducing the untied fiscal space to the states due to the higher tax devolution recommended by the FFC. Moreover, scheme related grants reflect the central government priorities and those that pertain to the state government priorities, in this case of Kerala's priorities also go ill addressed and its resources would also get tied to the central programmes. KIIFB would be a step in addressing this concern as well.

Kerala Deficit Ratios

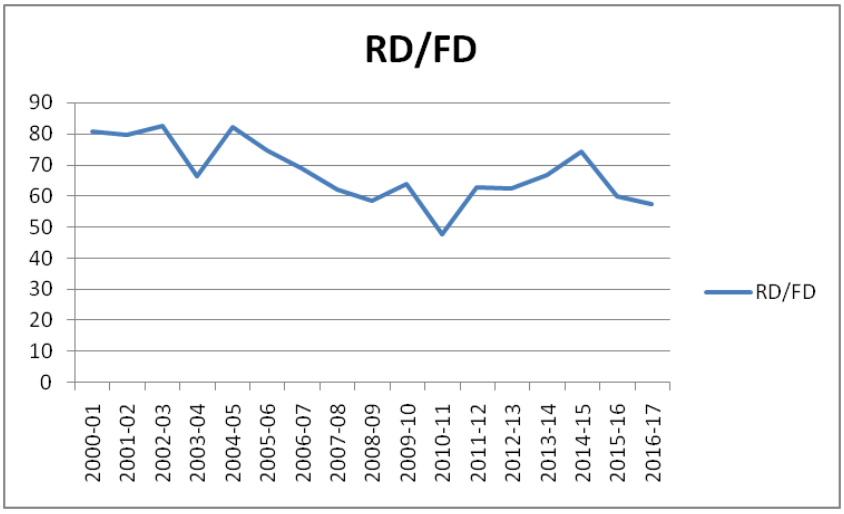
YEAR	RD/GSDP	FD/GSDP	PD/GSDP	RD/FD
2000-01	3.93	4.85	2	80.97
2001-02	3.07	3.85	0.92	79.7
2002-03	4.35	5.27	2.16	82.61
2003-04	3.49	5.25	2.09	66.4
2004-05	3.05	3.71	0.7	82.41
2005-06	2.29	3.06	0.18	74.82
2006-07	1.72	2.49	-0.24	69.02
2007-08	2.16	3.48	1.01	62.04
2008-09	1.83	3.13	0.83	58.49
2009-10	2.16	3.39	1.11	63.81
2010-11	1.39	2.93	0.77	47.52
2011-12	2.57	4.1	2.09	62.7
2012-13	2.69	4.31	2.24	62.33
2013-14	2.85	4.28	2.19	66.74
2014-15	2.6	3.5	1.7	74.28571
2015-16	1.8	3	1.2	60
2016-17	2	3.5	1.6	57.14286

Source: Isaac and Mohan, 2016 & RBI State Finances – A study of state budgets



Kerala's Fiscal Deficit, Revenue Deficit and Primary Deficit as a percentage of its GSDP

Source: Isaac and Mohan, 2016 & RBI State Finances – A study of state budgets



Ratio of Kerala's Revenue Deficit to Fiscal Deficit

Source: Isaac and Mohan, 2016 & RBI State Finances – A study of state budgets

KIIFB ; AN OVERVIEW

The Kerala Infrastructure Investment Fund Act, 1999, "An Act *to provide for the constitution of a fund for investments in the infrastructure projects in the State and for matters connected therewith or incidental thereto."* The contribution to this fund, however was meant to be made through the Government after due appropriation by law of the State Legislature in the form of grants, advances and loans on such terms and conditions as the Government may determine. The Board was also sanctioned with the power to borrow through bonds, debentures, banks and lend to PSUs.

The act was amended in 2002 as the Kerala Infrastructure Investment Fund (Amendment) Act, 2002 where the fund amount was raised to two thousand crore rupees from one thousand crores. The rules and limits for resource mobilization and borrowing set by regulators like SEBI and RBI having changed over the course of time, the extant KIIF Act was insufficient and the latest amendment of Kerala Infrastructure Investment Finance Fund (Amendment) Act, 2016 was a solution for the same.

The 2016 act differs primarily with the introduction of Public Private Partnerships (PPPs) whereas it previously consisted only of the Government. Moreover, the 2016 act also differs as the infrastructure projects include both physical and social contrary to the 1992 act which included only the former. The projects will be carried out through the Special Purpose Vehicles (SPVs) that are formed for executing any work financed by the Board. The PPPs are supported by the state through (i) subsidy or capital grant not exceeding such proportion of the cost of the project, as may be specified in the scheme, (ii) equity,(iii) loans, (iv) guarantee by the Government(v) opening and operation of escrow account, (vi) conferment of right to develop any land, (vii) incentives in the form of exemption from the payment of, or deferred payment of, any tax or fees levied under any law or such other incentives. (KIIFB Act,2016)

A Funds Trustee and Advisory Commission (FTAC) was also created as an efficient oversight mechanism to ensure credibility of the borrowing plans and assure the investor of prompt returns and repayment whose primary role is to ensure that all investments of the Fund are as per the approved scheme and that there is no diversion of funds of KIIFB.

The government makes timely provisions in the budget for the payment of annuity or other repayment obligations and to meet operational and administrative costs incurred by the Board. It also sets aside a share of the Motor Vehicle Taxes as contribution to the fund, it being ten percent in the first year and increased by ten percent each year up to fifty percent of the Motor Vehicle Tax in the fifth year. Petroleum cess is also to be contributed in its entirety to the Fund by the Government. The government is also to make loans, grants and advances as the terms and conditions may determine. The first four years, government borrowings for KIIFB would amount to 5000 cr, 10000 cr, 20000cr and 15000cr.

A minimum of 100 cr for each project taken up is maintained.
Borrowing from the market is made through the forms of General Obligation Bonds, Revenue Obligation Bonds, Land Bonds, or from Banks, Multilateral Funding Agencies or Institutions approved by the Government in that behalf. Other infrastructure investment structures include Alternate Investment Fund (AIF), Infrastructure Investment Trust (InvIT), Mutual Funds and Infrastructure Debt Fund (IDF). Tailor-made investment

packages through existing government financial agencies like Kerala State Financial Enterprises Ltd. (KSFE)

Moreover, the payment and interest of any fund raised by the Board is guaranteed by the Government.

Type of instrument	**PROGRESS**
General Obligation Bond	2000 crore, 15000 cr Green Shoe Option
NIDA loan from NABARD (4000 cr)	630 cr (9:1) ratio between NABARD & KIIFB, 9.30% interest
AIF, IDF, InVIT	An Asset Management Company being considered along the likes of Tamil Nadu Infrastructure Fund Management Company.
NRI Chitty in association with KSFE	Chitty with insurance and pension cover to be launched, Funds to be made available through a flexible online chitty bond
Land Bonds	8000 cr worth bonds envisaged

FRAMEWORK FOR DEBT SUSTAINABILITY

There are several ways to measure sustainability of debt; however the most conventional approach is the one which uses the lifetime budget constraint of the respective government where the concept of sustainability is the ability of the government to remain solvent in the long term.

Since the ability of sub-national governments to borrow from abroad is curtailed, exchange rate may not directly affect them. However, currency risks can indirectly affect governments through interest rate fluctuations as in the case of emerging market currency crisis in Russia, Brazil in the 1990s.

The government's expenditure in year *t* consists of two components, non-interest spending, denoted *Gt*, and interest payments on the debt, *itDt-1*. Government expenditure must be financed by raising tax and nontax revenues net of transfers to the private sector, denoted *Rt*, through money issuance, *Mt–Mt-1* (=Δ*Mt*), and by issuing interest-bearing securities, *Dt–Dt-1*.

Since sub-national governments do not have the power to issue its own currency, seignorage revenue accrues to the central government. The Constitution limits the states

from generating their own revenue by setting their own tax policies, however, transfers from the central government are an important source of revenue. Tax devolution to the states after the Fourteenth Finance Commission plays a major role. In India, interest rates on government bonds are set by the Reserve Bank of India (RBI) and are the same for all states independent of their creditworthiness.

Gt + itDt-1 = Rt + (Dt-Dt-1) (1)

The primary budget balance, PBt, is the difference between revenue and noninterest

expenditure, Rt - Gt.

Therefore, the intertemporal budget constraint is

D_t = (1+it)Dt-1 -PBt (2)

The subnational budget constraint is divided by the nominal GDP to derive the *debt law of motion.*

$$\frac{D_t}{P_t Y_t} = \frac{(1+i_t) D_{t-1}}{P_t Y_t} - \frac{PB_t}{P_t Y_t}$$

$$= \frac{(1+i_t)}{(1+g_t)(1+\pi_t)} \frac{D_{t-1}}{P_{t-1} Y_{t-1}} - \frac{PB_t}{P_t Y_t}$$

Since,

$$\pi_t = \frac{P_t}{P_{t-1}} - 1 \quad \text{and} \quad g_t = \frac{Y_t}{Y_{t-1}} - 1$$

Where,

Πt denote the rate of increase in prices between years *t-1* and *t*

and *gt* denotes the real growth rate of output

$d_t \equiv D_t / P_t Y_t, \; d_{t-1} \equiv D_{t-1} / P_{t-1} Y_{t-1}, \; pb_t \equiv PB_t / P_t Y_t.$

Using the Fischer equation,

$1 + r_t \equiv (1+i_t)/(1+\pi_t)$

Therefore, the parameter multiplying d_{t-1}, denoted by

$\phi_t \equiv (1+i_t)/[(1+g_t)(1+\pi_t)] = (1+r_t)/(1+g_t)$

Therefore,

$$d_t = \phi_t d_{t-1} - pb_t \quad (3)$$

Whether the public debt-to-GDP ratio is explosive or not depends on the value of the parameter

ϕ . $\phi < 1$ = debt is non-explosive.

$\phi > 1$ = debt is explosive

Substract d_{t-1} on both sides of equation to obtain an expression for the change

in the debt ratio to understand the explosive nature of debt.

$$\Delta d_t = (\phi_t - 1) d_{t-1} - pb_t$$

$$pb_t = \left(\frac{r_t - g_t}{1 + g_t}\right) \cdot d_{t-1} \quad (4)$$

is the debt stabilizing primary balance (equating Δdt to zero)

If the real interest rate on government debt exceeds real GDP growth, debt becomes explosive,

The larger is the (real) interest-growth differential, (rt-gt), the larger the required

debt-stabilising surplus. Note that if the interest-growth differential is zero, rt = gt,

then it follows that Δdt = -pbt. In this context, a balanced primary balance keeps the debt-to-GDP ratio constant.

DATA

The data for growth rate (g), interest rate (r), debt to GSDP ratio (dt) and primary deficit to GSDP(pb) ratio are derived from the Medium Term Fiscal Policy (MTFP) 2017, Government of Kerala. (See Appendix)

The data for taxes; Motor Vehicle Tax and Petroleum Cess are obtained from the Annual Financial Statement, Government of Kerala, 2017.

METHODOLOGY

Three scenarios are calculated:

i. Baseline scenario ; assuming the current rates prevail.
ii. Optimistic scenario ; growth rate equals 14, ceteris paribus
iii. Pessimistic scenario ; growth rate equals 10, ceteris paribus

The values for *g* are taken from the Forward Estimates (FE) from 2017-18 to 2019-2020 for all scenarios. The values for *g* from 2020-2021 to 2022-2023 are assumed to be '14' and '10' in the optimistic and pessimistic scenarios respectively.

Two cases are considered:

a. Without KIIFB
b. With KIIFB

In case (a), debt to GSDP ratios are calculated from 2017-18 with dt-1 being debt to GSDP ratio for 2016-17.

In case (b), Primary balance is calculated after deducting the allocations for KIIFB which includes

a. Motor Vehicle Tax (10 % in the first year ie 2017-18 till 50% in the fifth year and the years proceeding)
b. Petroleum Cess (100% from year one ie 2017-18)

and debt to GSDP ratio is ascertained after taking the modified Primary balance, for the years 2017-18 to 2022-2023 with dt-1 being 2016-17.

Assumptions :

i. Motor Vehicle Tax and Petroleum Cess are assumed to be constant as in 2016-17 for the succeeding years.
ii. Primary balance estimates are used till 2019-2020 and thereafter, it's assumed to be constant.
iii. Yearly borrrowings for KIIF by the Govt for the years 2017-18 to 2020-21 are ignored in this analysis.

VARIABLES							
	2016-17	2017-18*	2018-19*	2019-20*	2020-21*	2021-22*	2022-2023*
r (in%)	7.32	7.03	7.6	7.6	7.6	7.6	7.6
g (in%)*	12.75	12.75	13	13	13(i), 14(ii), 10(iii)		
Pb (a)	-0.01669	-0.01621	-0.01292	-0.01112	-0.011115905	-0.011115905	-0.011115905
Pb (b)*	-	-0.01666	-0.01372	-0.01217	-0.011079303	-0.010079516	-0.008919926

(*) indicates own analysis.

RESULTS AND INFERENCES

Case a. Without KIIFB

WITHOUT KIIFB							
	2016-17	2017-2018*	2018-2019*	2019-2020*	2020-2021*	2021-2022*	2022-2023*
Baseline Scenario	27.27	25.902757	24.677848	23.509668	22.39731338	21.33811519	20.32953356
Optimistic Scenario	27.27	25.902757	24.677848	23.509668	22.20094322	20.96569038	19.79978508
Pessimistic Scenario	27.27	25.902757	24.677848	23.509668	23.00784603	22.51697257	22.03680907

(*) indicates own analysis results.

Case b. With KIIFB

WITH KIIFB							
	2016-17	2017-2018*	2018-2019*	2019-2020*	2020-2021*	2021-2022*	2022-2023*
Baseline Scenario	27.27	25.903205	24.679068	23.511883	22.39938526	21.33905167	20.3282293
Optimistic Scenario	27.27	25.903205	24.679068	23.511883	22.20299661	20.9665921	19.79844019
Pessimistic Scenario	27.27	25.903205	24.679068	23.511883	23.00997542	22.51801911	22.0356368

(*) indicates own analysis results.

As the tables suggest, the debt to GSDP ratios before and after taking funding for KIIFB are almost similar, differing by only several decimal points in all three scenarios. This means that debt sustainability according to the conventional framework isn't affected by the introduction of KIIFB. The declining ratios are due to the simplistic assumptions used in the framework. However, the focus is on the relative difference on debt to GSDP ratios with and without KIIFB and the results show that the differences are minimal.

LIABILITY ANALYSIS

Taking the yearly allocations to KIIFB made by the Govt through borrowings for the period of four years from 2017-18 to 2020-21(since borrowings schedule is laid out only for these

years), the debt-GDP ratios are considered (ceteris paribus). Here too the results show that there is no significant difference in the ratios with and without KIIFB.

Two cases are considered here; without KIIFB being case (i) and with KIIFB being case (ii)

	2016-17	2017-18*	2018-19*	2019-20*	2020-2021*
Debt Stock (i)	180921.2	207026.8	232382.2	261033.7	261033.7
GSDP	663357.8	747945.3	845178.2	955051.3	955051.32
Govt allocations for KIIFB		5000	10000	20000	15000
Debt Stock (ii)	663357.8	212026.8	242382.2	281033.7	276033.7
Debt Stock/GSDP(%) (i)	27.27	27.68	27.5	27.33	27.33190296
Debt Stock/GSDP(%) (ii)		**28.34791**	**28.67823**	**29.42603**	**28.90249919**

(*) indicates own analysis results.

CONCLUSIONS

The debt-sustainability framework and liability analysis both yield that debt to GSDP ratios are similar with and without KIIFB. This shows that the effects of KIIFB on the Government of Kerala's balance sheet with the allocations considered so far (loans, Motor Vehicle Tax share, Petroleum Cess) do not affect the debt- sustainability of the state as both analysis yield non-explosive debt-to-GSDP ratios. The values however differ due to the assumptions considered in both. The focus of both the analysis is on the relative differences in debt-GSDP ratios with and without KIIFB and not on the absolute values.

LIMITATIONS

The main limitation is due to the fact, the borrowings for KIIFB are susceptible to turn into contingent liabilities as the infrastructure projects require a gestation period to yield returns and moreover, profitability of the same would also depend on market behavior. Moreover, as stated in the KIIF Act, 2016, the government provides guarantee over all the funds raised by KIIFB. These guarantees also form part of the contingent liability in case the borrower (eg of GO bonds etc) defaults. These funds therefore are explicit contingent liabilities to the state government. Therefore, the total contingent liabilities to GSDP should be ascertained to understand the risks faced by the government as a trigger to the ratio would detrimentally affect both interest rates and growth rates. A high ratio i.e 50% of the debt are significant (IMF DSA,2003)

Measures to assess the risk of a contingent liability according to the IMF Debt Sustainability Framework for national governments are

a. Private sector credit to GDP ratio (above 15 %)
b. Loan to deposit ratio (above 1.5)

The same for sub-national governments, here Kerala would imply assessing the total private sector credit to GSDP ratio and loan to deposit ratio as well. These triggers can lead to a possible banking crisis which can affect the contingent liabilities in the case of KIIFB due to its market oriented borrowing schemes.

Other triggers that can affect the KIIFB borrowing schemes include

a. Negative shock to growth (leading to less investments)
b. The resulting deterioration of the primary balance (increasing debt-GSDP ratio)
c. Increase in interest rates (leading to less investments in market instruments and more savings)
d. Decrease in inflation (leading to more consumption and therefore less investments)

The Kerala Ceiling on Government Guarantees Act, 2003 was laid down according to which the Government guarantees as on the 1st day of April of any year shall not exceed ` 14,000 crore. However, a government reserve fund has not been set up.

With the implementation of GST, the revenue patterns of the sub-national governments are bound to change and increase vis-à-vis prior to the same. This analysis has not taken the issue into consideration. Moreover, the picture of the centre-state relationship is incomplete as several dynamics aren't taken into consideration.

Conventional debt sustainability analysis also falls short of understanding the riskiness of the issue as the forward looking approach ignores uncertainty and therefore, the process would entail more sophisticated frameworks. A second approach involving empirical evaluation or tests of government solvency (Hamilton and Flavin 1986) could be applied. Additional approaches involve adapting the IMF Contingent Liability framework. The Value at Risk Approach (Barnhill and Kopits, 2003) measures the net worth of a government by comparing the value of the government's outstanding debt to the present value of the net flows with which that debt will be serviced and is suitable to the analysis.

Moreover, since policies designed largely by the central government can affect the economic growth and the fiscal health of the sub-national economy and expected bailouts by the central government can also affect the debt dynamics.

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APPENDIX

Medium Term Fiscal Plan 2017

Item	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Accounts	Accounts	Accounts	RE	BE	FE	FE
Revenue Receipts(A)	49176.94	57950.47	69032.66	80620.1	93584.74	112181.31	134474.32
State's Own Tax Revenue	31995.02	35232.5	38995.15	44547.63	53411.49	64093.79	76912.55
Non Tax Revenue	5575.03	7283.69	8425.49	10057.31	12037.79	14324.97	17046.71
Resources from Centre	11606.89	15434.28	21612.02	26015.16	28135.46	33762.55	40515.06
Revenue Expenditure(B)	60485.5	71746.43	78689.47	94555.63	109627.88	127949.44	149333
Interest	8265.38	9769.59	11110.62	12386.74	13631.83	16697.54	18749.8
Salaries	19279.78	21343.66	23450.1	27332.2	31789.85	34938.72	37177.4
Pensions	9971.27	11252.67	13062.86	15403.58	18174.29	19607.99	19367.11
Non SPI Revenue Expenditure	22969.07	29380.51	31065.89	39433.11	42966.2	56705.19	74038.69
Subsidies	1252	1247.52	1343.09	1552.78	1488.15	1791.8	2157.4
Devolution to LSGs	5926	7454	5029	8671	9776	12615.41	16279.51
Other Revenue Expenditure	15791.07	20678.99	24693.8	29209.33	31702.05	42297.99	55601.78
Revenue Surplus/Deficit(A-B)	-11308.56	-13795.96	-9656.81	-13935.53	-16043.14	-15768.13	-14858.67
Capital Expenditure©	5758.5	4997.68	8342.29	9741.37	9974.06	12145.18	14839.7
Capital Outlay	4294.33	4254.59	7500.04	8748.48	9057.48	11234.7	13935.28
Loan Disbursements	1464.17	743.09	842.25	992.89	916.58	910.48	904.42
Non Debt Capital Receipts(D)	122.94	151.92	180.71	216.27	260.88	294.44	332.31
Fiscal Deficit/Surplus(A-B)-(C+D)	-16944.12	-18641.73	-17818.39	-23460.63	-25756.32	-27618.88	-29366.06
Primary Fiscal Deficit/Surplus	-8678.74	-8872.14	-6707.77	-11073.89	-12124.49	-10921.34	-10616.26
End of the period Debt	111285	127224.62	146405.29	169145.79	193974.03	219704.49	246707.93
Debt Service	8265.38	9770	11110.62	12386.74	14297.39	16697.54	18749.8
Salary+Pension+Interest(SIP)	37516.43	42365.92	47623.58	55122.52	63595.97	71244.25	75294.31
Debt Stock	119009	135440.24	157370.33	180921.24	207026.82	232382.16	261033.7
Government Guarantees	9763.36	11126.87	12438.52				
Interest/Revenue Receipts(%)	16.81	16.86	16.09	15.36	14.57	14.88	13.94
Debt/Revenue (%)	242	233.72	227.97	224.41	221.22	207.15	194.11
(SIP)/Revenue(%)	76.29	73.11	68.99	68.37	67.96	63.51	55.99
(SIP)/GSDP (%)	8.07	8.05	8.09	8.31	8.5	8.43	7.88
(Salary+Pension)/GSDP(%)	6.29	6.2	6.21	6.44	6.68	6.45	5.9
Rev Deficit/Rev Receipt (%)	23	23.81	13.99	17.29	17.14	14.06	11.05
RD/GSDP(%)	2.43	2.62	1.64	2.1	2.14	1.87	1.56
FD/GSDP(%)	3.64	3.54	3.02	3.54	3.44	3.27	3.07
Debt Stock/GSDP(%)	25.59	25.75	26.75	27.27	27.68	27.5	27.33
IP/RR(%)	16.81	16.86	16.09	15.36	14.57	14.88	13.94
GSDP	465041.21	526002.3	588336.59	663357.8	747945.27	845178.16	955051.32
Nominal GSDP Growth Rate (%)	12.79	13.11	11.85	12.75	12.75	13	13
Average Interest Rate (%)	7.43	7.68	7.59	7.32	7.03	7.6	7.6
Domar Gap (g-i)	5.36	5.43	4.26	5.43	5.72	5.4	5.4