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Measurement of Fiscal and Debt Sustainability of Kerala – An Alternative Approach

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ABSTRACT

The ability of a Government to sustain expenditure with its own resources without threatening solvency is of prime importance. The fiscal management in sub-national Government in India has seen periodic fluctuations with period of high fiscal distress during the later period of 1980's to 2003-04. It was followed by a period of fiscal reforms, and again distress due to macroeconomic slowdown. This study attempts to analyse the structural fiscal problems and fiscal management of the state governments based on the long-term behaviour of major fiscal variables during the last 36 years. The sustainability of the sub-national government over this time period has been studied based on existing models and through an alternative model. In addition, the impact of fiscal targets on state's development expenditure in a developing country like India has been analysed.

Key words: Debt sustainability, Fiscal sustainability, Alternative approach

INTRODUCTION

Traditionally, fiscal sustainability has been assessed in terms of select indicators. Domar was the first to develop a debt sustainability model in 1944 which states that a necessary condition for debt sustainability is that the real growth rate of income must exceed the real interest rate. Subsequently, Buiter (1985) suggested a sustainable policy as one, which is capable of maintaining the current level of net worth of the public sector to output ratio. Blanchard (1990) laid out two sustainability conditions. The ratio of debt to Gross National Product (GNP)should eventually converge back to its initial level, and the present discounted value of the ratio of future primary surplus to GNP should be equal to the current level of debt to GNP.

The debt position of Indian states has transformed over three relatively distinct phases: from a comfortable period before 1997-98 to a period of acute deterioration and fiscal stress between 1997-98 and 2003-04 and eventually to a phase of considerable improvement since 2004-05. Since, the early 1990s, in India the committed expenditure of the states which includes interest payments, pensions and subsidies and salaries was significantly high which led to increased deficit and borrowings. The ratios of fiscal deficit and revenue deficit to Gross State Domestic Product (GSDP) of states (as an aggregate) increased from 2.4 per cent and 0.4 per cent in 1994 to 4.7 per cent and 2.7 per cent respectively in 2000, which called for urgent action. Faced with the growing debt, the centre first introduced the Fiscal Responsibility and Budget Management (FRBM) Act in 2000 and later majority of Indian states enacted similar acts with Karnataka introducing the first FRBM Act in 2003. These fiscal correction and consolidation processes have led to improved state finances over the years. Eventually, although most states today are in a significantly stronger fiscal position than before, Public Financial Management (PFM) is seen as the one in need of permanent surveillance and improvement. The 13th Finance Commission (FC) had set debt targets for the states for the period 2010- 2014 which many states adhered to. However, some states breached the 13th FC debt targets and

continued to have unsustainable debt positions. Visible fiscal pressures have re-emerged for several states on the expenditure side, particularly on account of pay revision, increase in interest payments due to taking over the debt liabilities of state power distribution companies under Ujjwal DISCOM Assurance Yojana (UDAY) for their financial and operational restructuring and other state-specific schemes like farm loan waivers. Also, there has been a shortfall of revenue receipts during recent years mainly due to declining own revenue of the states (RBI, 2019). Sluggish macroeconomy in the last few years with GDP hovering around 5-6 per cent coupled with catastrophic impact on the economy due to pandemic COVID-19 has further worsened the debt situation of both the centre and the states. The reliance on additional borrowings to meet drastic shortfall in revenues and enhanced expenditure for meeting additional commitments will worsen the debt situation in the coming fiscal years. Thus, it has become necessary to study the entire issue of debt and fiscal sustainability of Indian states and explore an alternative approach to re-examine the issue of measurement of fiscal sustainability of Indian states.

MOTIVATION OF THE STUDY

The motivation for the current study is to examine the fiscal sustainability of Indian states adopting an alternative approach in addition to the widely used debt and fiscal sustainability approaches. Fiscal sustainability of states has been analysed here considering the own revenues, expenditures and outstanding liabilities of states deviating from the earlier papers which examined the relation between total revenue, total expenditure and outstanding liabilities of states. Also, the study builds on the seldom used unit root and cointegration approach between the states own revenues and total expenditure, as opposed to the total revenues of the state which include volatile central transfers. This tests the sustainability of the fiscal policy of the state by controlling its own revenues and total expenditure

This study aims at analyze various interpretations of debt/fiscal sustainability and examine critically different approaches to assess debt and fiscal sustainability of the sub-national governments while reviewing the existing literature

THE FEDERAL FISCAL SYSTEM IN INDIA

Pre-independent India had centralized the entire administration, limiting the autonomy, rights and privileges of individual states. In this context, to achieve full-fledged autonomy, rights and freedom, states started demanding the reorganization of state boundaries in all parts of the country.

Fiscal federalism in modern India started with the Government of India Acts of 1919 and 1935. The system of diarchy started with the 1919 Act and a broad shape of federal system was given in the 1935 Act. The report of Sir Otto Niemeyer, officially titled as The Indian Financial Enquiry Report, and popularly called the Niemeyer Award (April, 1936), made 69 specific recommendations in regard to the vertical (centre to states) and horizontal (across states) sharing of the sharable taxes and duties as well as for grants-in-aid of the revenue of the provinces that it determined to be in need of assistance owing to their financial weakness. Post-independence, the structure of Indian Constitution that came into effect was widely known as federal in nature but having unitary features.

EVOLUTION OF INDIAN FEDERALISM

In India, functions and sources of finance between union, state and local governments are demarcated in the constitution. The two-tiered federal structure existed in India with the powers and functions distributed between the centre and states. Since independence, a certain level of decentralization at the local bodies existed informally.

Under this federation, matters of national importance were placed in the Union list, while matters of regional importance were placed in the State list. The remaining matters requiring cooperation of the states and the centre were placed in the Concurrent list. However, a strong bias towards the centre can be seen because the residuary powers were assigned to the central government. The placement of "Economic and Social Planning" in the Concurrent list led to the concentration of significant economic powers with the central government (Rao 2000).

Decentralization of Sub-national Government In rural areas, historically, Panchayati Raj Institutions (PRIs) in villages existed and provided basic community services and dispensed justice along with other urban local bodies. It was much before in 1957 that the Government of India appointed the Balwant Rai Mehta Committee to review the functioning of these local government agencies.

DEBT SUSTAINABILITY OF KERALA USING ALTERNATIVE APPROACH

INTRODUCTION

13th Finance Commission had identified Kerala as a severely debt stressed state. Since 2011, the Government has undertaken a myriad of measures to augment revenue, restrict committed expenditure, increase capital expenditure and also ensure fiscal sustainability. The low revenue raising capacity of the state due to deindustrialization and predominant share of agriculture in state's GSDP and high presence of the informal sector has been a major impediment for revival of the fiscal health of Kerala. Thus, a sustainability analysis for Kerala has been undertaken based on alternative approach to understand the fiscal health of the state.

METHODOLOGY

Analysis of Kerala has been undertaken to study the fiscal sustainability of the state across time, considering structural changes over the time period considered. As most of the time series economic relationships present spurious relations among the variables, testing for the presence of unit root in the variables is a must. In stage one, all the variables are tested for the presence of unit root using Augmented Dickey Fuller (ADF) test as it is one of the widely used methods of testing unit roots in variables. In the second stage, to include the effects of a structural break the co-integration method suggested by Gregory and Hansen (1996) has been employed. This method allows a structural break in the estimation of a co-integration model. It shows that the ADF test tends to under-reject the null hypothesis of no co-integration in the presence of a structural break. Considering the importance of the effects of a potential structural break, the Gregory and Hansen (1996) co-integration procedure that allows for an endogenously determined structural break has been applied

The problem of estimating co-integration relationships in the presence of potential structural break is addressed by Gregory and Hansen by introducing a residual based technique. The technique is to test the null hypothesis of no co-integration against the alternative of co-integration with a structural break. Here, the break point is unknown and is determined by finding the minimum values for the ADF t-statistic. The Gregory and Hansen procedure takes into

account the existence of a potential unknown and an endogenously determined single break, allowing for structural shifts in either the intercept alone, in both trend and level shift and a full break. That is, Gregory and Hansen present three models for testing co-integration where they allow for the existence of structural break in the co-integrating vector. The single structural break is estimated using the procedure called residual based method. The method involves testing the null hypothesis of no integration against the alternative of co-integration with a structural break. The break point is usually unknown and is determined by finding the minimum values for the ADF t-statistic.

DATA SOURCE

The study tests for co-integration between States Own Revenue and Total Expenditure for Kerala during 1980-2016. Data for the state has been taken from RBI, State Finances across years.

RESULTS

Unit Root Test

First the presence of unit roots in the variables considered, i.e. States Own Revenue and Total Expenditure, has been tested. The Augmented Dickey Fuller test (ADF) (1979, 1981) is used for testing for the stationarity of the variables. The computed test statistics for the levels and first differences of the variables are given in Table.1

Table.1: ADF Test for Unit Root

Variable name	At level	At first difference
State own revenue	0.123269	-.4920726*
Total expenditure	0.133871	.3813586**

As seen above, the null hypothesis of unit root cannot be rejected in both variables in their levels but can be rejected in their first differences. However, the null hypothesis of existence of unit root is rejected at 1 per cent significance for States Own Revenue and 5 per cent significance for Total Expenditure. Hence, it can be said that the variables examined are stationary in their first differences. Since both variables are stationary at same level, i.e. at the first difference, they can be considered for further tests.

CO-INTEGRATION TESTS

As a first step to test for co-integration, the Engle-Granger test has been applied. This is the standard approach for co-integration, without considering the existence of structural breaks in the time series. For the Engle-Granger test, regressions considering States Own Revenue and Total Expenditure, each as dependent variable is undertaken. The results indicate the existence of a relationship between both variables under both regressions. Thereafter, the co-integration between the error correction terms in the regression is considered. The result has been presented in Table 2.

Table 2: Engle Granger Test Result

Variable name	Coefficient
Residual	-.5984925*

Results indicate that considered variables are co-integrated as null hypothesis that there is a unit root and the residuals are non-stationary is rejected at 1per cent significance. While the Engle-Granger test suggests that the variables are co-integrated, it does not consider the presence of structural breaks in the variables. However, such an assumption would be incorrect as it is more likely that both variables have a structural break during the time period considered. Testing for presence of structural break reveals the following: Table 3

Table 3 Presence of Structural Breaks

Variable name	**Year of break**
States own revenue	2011**
Total expenditure	2000*

Results in Table 3 indicate the existence of a structural break over the time period considered at 2011 for States Own Revenue and 2000 for Total Expenditure. Around 1999- 00, the new Pay Commission was implemented in Kerala, leading to a significant hike in salary expenses. Since 2010-11, the state government has undertaken a slew of initiatives to increase the own revenue generated in the state. Considering the presence of structural break in both variables, a co-integration test taking into account such breaks is required to be tested. Thus, the Gregory-Hansen co-integration test has been used. The Gregory Hansen test considers level, trend and regime shifts for structural breaks to test for co-integration. The results of all three tests have been presented in Table 4:

Table 4 The Gregory Hansen test

Test	**Test statistics**	**critical value(1%)**
Gregory-Hansen (Level)		
ADF	-5.22	-5.13
Zt	-5.29	-5.13
Za	-31.81	-50.07
Gregory-Hansen (Trend)		
ADF	-4.98	-5.45

Zt	-5.05	-5.45
Za	-30.33	-57.28
Gregory-Hansen (Regime)		
ADF	5.62	-5.47
Zt	-5.7	-5.47
Za	-34.84	-57.17

Results indicate that state's own revenue and total expenditure are co-integrated as the null hypothesis can be rejected at 5% level of significance as both ADF and Z statistics are greater than critical values under the level and regime shift tests. Thus, there is existence of co-integration.

CONCLUSION

Fiscal federalism has been the building block for India. Under fiscal federalism the revenue assignments and expenditure responsibilities of the centre and the states are clearly demarcated. The widening asymmetry between revenue collection and spending responsibilities of states has led to a greater need for borrowings, thus, ascertaining the need to study the borrowings of a sub-national government, and measuring the sustainability of the same. An overall analysis of the borrowings of the states has been conducted which shows that states which have gone through periods of fiscal distress and high committed expenditure have also achieved comfortable fiscal position on account of various fiscal consolidation measures undertaken by them coupled with debt relief provided by the central government in early 2000. It is observed that over a period of time, while fiscal consolidation measures through imposition of fiscal targets is instrumental in enhancing fiscal discipline, stringent targets lead states with distressed finances to compromise on discretionary expenditure which is extremely essential for development. The core concern of the study which is to assess the sustainability of debt and fiscal policy of sub-national government and analyse various existing methods to measure fiscal sustainability has led to proposing an alternative approach to measure fiscal sustainability. A study of the various approaches to measure fiscal sustainability shows that the cointegration of revenue receipts and expenditure is tested to examine fiscal sustainability. However, it is observed that there is a significant fluctuation in the component of transfers from the centre which results in equivalent fluctuation in revenue receipts of the states. This leads to studying an alternative approach to measure fiscal sustainability of subnational government. The present study deviates from previous studies in two ways. Firstly, this study has considered two fiscal variables i.e. state's own revenue and total expenditure deviating from the earlier papers which examined the relation between total revenue and total expenditure of states. Secondly, the study has considered the impact of cross-sectional dependence and structural break in panel data, which has not been considered in the study of fiscal sustainability in Indian scenario prior to this. The second-generation panel tests which have been considered in this study is imperative for robust results. However, it is also observed that the own tax revenues of the Government of Kerala has not grown in tandem with the economic growth of the state. This is seen to be the reason for a slowing down in the recovery of fiscal health. This has been primarily on account of the presence of large informal sector, asset holding pattern, consumption pattern and structure of the economy. In spite of such fiscal hardships, it is seen that in the long run, during 1991 to 2018, Kerala has been fiscally sustainable. However, the state has not shown any significant stabilizing adjustments in the long run.

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