ON DEVELOPING MACRO-DIAGNOSTICS FOR EVALUATING THE FISCAL HEALTH OF THE INDIAN STATES: THE CASE OF MADHYA PRADESH

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WORKING PAPER NO. 4

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ABSTRACT

The context of this paper is given by the parametric environment defined by the political reality on one hand and the process of decentralisation which has gained impetus post 73rd and 74th Constitutional Amendment Acts, on the other. Keeping in view the process of globalisation and privatisation in the Indian economy it suggests a conceptual framework for developing Macro-Diagnostics for evaluating the fiscal health of the Indian states. Specifically this paper looks at the state of Madhya Pradesh. It provides an overview of key fiscal variables and their dynamics in recent times. It also tries to operationalise the conceptual framework by way of constructing various indices. It thus provides an entrée – by way of providing macro benchmarks – into the rather stiff problem of development of Madhya Pradesh's economy.

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ON DEVELOPING MACRO-DIAGNOSTICS FOR EVALUATING THE FISCAL HEALTH OF THE INDIAN STATES: THE CASE OF MADHYA PRADESH

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1. Introduction

Indian Economy has been passing through a tumultuous phase in the last dozen years or so. Unfolding of that eventful saga is common knowledge to all concerned, as a part of folklore of the contemporary history of Indian Economy. It continues to provide a point of departure for any meaningful discussion of the Indian Economy. Globalisation and privatisation apart, the happenings in the political sphere (especially in the realm of partisan politics) have added a new parametric dimension to relevant reality. We are of course referring to the strengthening of regional parties and emergence of coalition politics at all levels of government. The states have now donned a new *avatar* and have become key (sometimes, competing) players in the process of development. The recent macroeconomic management regimen has meant that whereas on one hand they are expected to increasingly assume newer responsibilities, on the other they have to look after themselves when it comes to raising resources. This last point has become an important central focus after the passage of 73rd and 74th Constitutional Amendments. Decentralisation that was always talked about but 'never really invited in' has now finally, taken the centre stage. Consequently, the political and economic aspects of governance and functional management have come into sharp focus. No serious social scientist can afford to ignore this backdrop whilst conducting a meaningful and fruitful discussion regarding fostering an economically viable civil society in India.

Civil society as an item on economic and political agenda of social thinkers has staged a dramatic return in the late twentieth century. It has been used by social scientists in the west as well as the east and across the wide political spectrum. It has not always meant the same thing to all of them. After all, civil society is not a new concept. It is much older to Hegel, and entered the

English language usage through the Latin translation *Societas Civilis*, of Aristotle's *Koinonia Politike.*(Kaviraj and Khilnani, 2001). In its original sense there was no distinction between the state and the society. Hegel was perhaps the first to create such a bifurcation. From the point of view of developing economy like India, we think that it is better to interpret civil society to refer to the state and non-state initiatives for reorganisation of social life around a modern sovereign state. The idea has to encompass all levels of governments in the vein of political decentralisation and has to be comprehensively participative in its connotation to encompass the NGOs and other such formal and non-formal private sector institutions.

With the conceptual background mentioned, let us turn to the specific concerns of our paper. The paper substantially deals with only the economic aspects of the fiscal operations of Madhya Pradesh's economy from a macro view point. This is an exploratory study, trying to develop diagnostics for evaluating a state's fiscal health. This paper is divided into four sections including the introduction. In the next section, we present the conceptual framework that we will try to operationalise for attempting to develop a diagnostic for evaluating the fiscal health of a state's economy. In the third section we provide a backdrop about the state of Madhya Pradesh and then report our computational results. In the fourth and last section we conclude.

2. The Conceptual Framework

There are several macro fiscal variables available that could be looked at. It is, however, essential to use the principle of parsimony and identify a few crucial ones. These need to be such that the relevant data are easily available. They must be consistently and uniformly tractable. They should thus satisfy the theoretical tenets and not be too difficult to handle empirically. In order to evaluate the fiscal health or performance, we need to first identify the principles that would form the conceptual framework. Here we suggest a conceptual framework (partly inspired by Karnik, Pethe, and Karmarkar, 2002) that is characterised by **EASE.** The acronym stands for the following:

E for equity

A for adequacy

S for simplicity &

E for efficiency.

We will now elaborate on each of the above

Equity is a crucially important *need based* component. An authority that assumes a paternal role, vis-à-vis its citizens, can ill afford to neglect this aspect. Distributional considerations are paramount. Non-homothetic growth may be a natural phenomenon in some cases, but has weighty objections lined against it in the context of political economy. If the power has to go to the people and their aspirations are to find articulation through the functioning of governments, they have to be empowered. The need for equity is not just based on moral-ethico-political precepts. Post Keynes and given the inter-dependant nature of a maturing economy, *it is dictated by sturdy economic sense. Unless a basic level of development and dynamism is achieved in the rural sector, the urban sector will find it successively more difficult to grow and develop (suffocated as it will be by effective demand)***.** This of course, will impact on overall economic development of India as a whole. The huge market potential for both consumption and producer goods (which is so very essential for a vibrant economy) will remain a distant chimera. From the specific point of view of this paper, equity can be broadly looked at in two ways. One, in the tax revenue that is collected, the component that is raised by way of indirect taxes is considered iniquitous. Two, we know that consideration of only the tax side without considering the budget in totality is incorrect. Thus, we consider the impact on poverty due to fiscal operations as a whole. Using these we try to operationalise ‘equity’.

Adequacy: Scarcity is omnipresent; indeed it is the *raison d’être* for economics and economists. The resource gap between what is available and what is ‘needed’ will be with us in the foreseeable future. This reflects what is ‘needed’ by the relevant state government. There is normally a tendency to overestimate ones own needs (both because one really believes it and also as a bargaining strategy, especially where hand-outs are involved). However one needs to have some sense of the *absorptive* capacity of the state. Sudden increase in funds will lead to inefficiencies in terms of consumption as well as production use.

One way out of the difficulty is to increase the Central pool of funds to be disbursed to a substantial extent. Given the context of the current fiscal compression at the Central government level, one cannot realistically expect too much via this route. The states must learn to stand up for, and help themselves. This solution has its own limits and is beset with problems; however, there is no readily available alternative. Efforts for closing this gap by states must be lauded and rewarded. There are many issues that are involved here. For instance there is the question of the extent to which *sub-national governments may be allowed to set their own taxes*. It is feared that excessive latitude in this regard can create unacceptable level of complexity and administrative burden, as well as spatial inequities and distortions in allocation of resources. Within limits, these problems need to be tolerated in the interest of gaining the benefits of decentralized government. There is the other issue of changing regulatory practices in order to allow a *greater access to the credit markets* for the State governments. Which of these is the better option is a moot question answerable only in terms of actual empirical evidence. *Indeed, rather than a clear option, this involves a selection of a proper mix of these and similar such possibilities*. The need to try out innovative experiments however is beyond doubt. One of the important lessons that can be learnt from evidence elsewhere is that it is better if commercial principles are followed and the state governments have to compete for capital with other borrowing agencies in the interest of efficient utilization of resources. In this paper, we look at the different resource gaps for the state of Madhya Pradesh and construct an index thereof.

Simplicity: This characteristic is very important as it serves – at least partially –the twin purposes of transparency and accountability. *Checking and replicating the diagnostics/ indices as given by our formulation should be easily possible in the public domain. Ad-hocism in setting the diagnostics has the great defect that it makes even discussion and criticism difficult.* Also, there is a loss of credibility and all kinds of suspicions about motivation begins to surface, which is counter productive. The word "simple" used above is being used as an antonym of complex. Of course, given the multitude of factors (e.g.,data availability) that need to be considered, complications are bound to arise. Computational transparency also lends itself to constructive discussion, in that, it is possible to undertake the exercise of scenario building and simulation (not done in this paper), and present it to the ultimate policy maker.

Efficiency: This is really a corner stone of our conceptual framework. In the present context of the Indian economy, whence we are in the process of making changes in the way we conduct our macro-management affairs, there can be no doubt about the importance of having *incentive compatible systems* in place. As economists, we would push very hard for this component to be the most important one in the scheme of things. However, political feasibility as well as adequacy requirements restrain us from going too far. Incentive compatible system implies that every effort reflected in performance gets a reward and every slide on efficiency front is penalised. Also, there is a static and a dynamic component to this criterion. For example, if a state is well off in its current performance terms, this will be a plus. Further, if its performance involves a switch in regime (i.e., from being relatively better, a state becomes absolutely better off; illustratively, this will happen when its small deficit changes into surplus), once again a few bonus points may be given to the State. Alternatively, a state may be badly off but if it shows improvement (a return of the prodigal to the fold!) it would be entitled to a bonus. Logically, efficiency as a criterion can conflict with some of the other components in our conceptual frame. This is a standard problem of a multi-objective decision function. Thus, it is conceptually necessary to set up the decision function in an add-on fashion rather than in a single simple formula. Of course, ultimately the whole exercise can be consolidated and hence a single Index is implied, even by this approach (not attempted in this paper). We have tried to operationalise this criterion by using several proxies as will be apparent in the next section, where we focus on Madhya Pradesh.

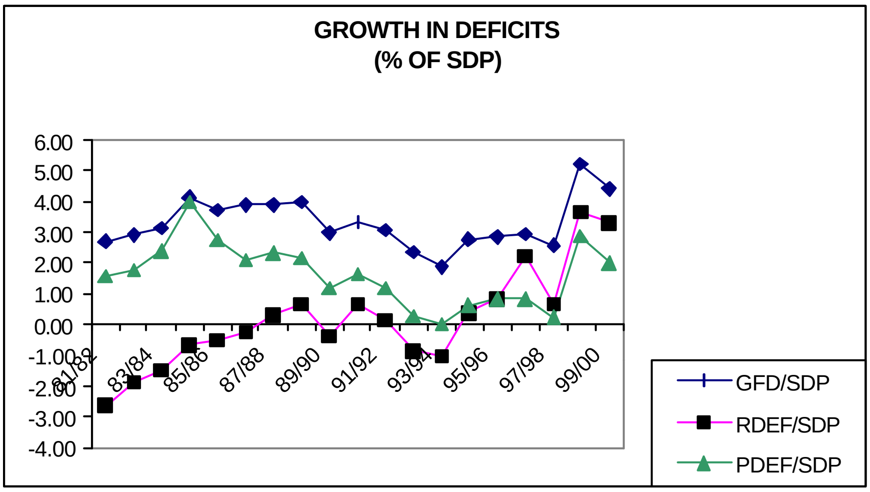
3. Madhya Pradesh

The state of Madhya Pradesh (M.P) is the second largest state in India covering a geographical area of 308 thousand sq. kms. It has an administrative setup comprising 9 divisions, 45 districts, 370 towns/cities and 55841 villages. The 2001 census provisionally puts the population of M.P. at 603.85 lakhs and a population density of 196 persons per sq. km., which is way below the all India figure of 324. The literacy rate of M.P. as registered in the 2001 census is 64.11%. This is a significant improvement from 52.2% recorded in the 1991 census. The net state domestic product of M.P in real terms (at 93/94 prices) stood at Rs. 45744.12 crores in 1999/2000 as compared to Rs. 34357.69 crores in 1994/95. The per capita income in real terms has risen from Rs. 6569 in 1993/94 to Rs. 7846 in 1999/2000. An overview of the progress of Madhya Pradesh on the fiscal front has been examined in this section of the paper by examining the broad trends in key fiscal variables in the period 1981/82 to 1999/2000.

3.1 The Fiscal Scenario: An Overview

The *Gross Fiscal Deficit* (GFD) of Madhya Pradesh was at 2.72% of Net State Domestic Product (SDP) in 1981/82. The ratio showed a steadily increasing trend and peaked at 4.14% in 1984/85. Since then a declining trend is noticed till it reached a low of 2.97% in 1989/90. In 1990/91 this ratio again rose to 3.33%. The next three years witnessed a declining trend till an all time low of 2.11% was reached in 1993/94. A rising trend was noticed over the next three years and it reached 2.93% in 1996/97. After a marginal dip to 2.59% in 1997/98 it shot up to 5.23% in 1998/99. In 1999/2000 GFD stood at 4.42% of SDP. The *Primary Deficit* (PD), which is GFD net of interest payments, is an important indicator to monitor as it nets out interest burden which is a legacy of the past and thus suggests the extent of fiscal imbalance which is being currently incurred. Primary deficit for M.P. as a proportion of State Domestic Product stood at 1.55% in 198/82. It showed an increasing trend and reached a high of 3.98% in 1984/85. A declining trend is noticed after that till 1993/94 when it reached an all time low of 0.01%. It rose gradually for the next three years and stood at 0.84% in 1996/97. In 1997/98 it once again declined to 0.23%. In the very next year 1998/99 it shot up to 2.90%. In 1999/2000 it has once declined by 0.90 percentage points and stood at 2%. *Revenue Deficit* (RD) is the third and most crucial deficit indicator to consider as it is a measure of the fiscal profligacy being indulged in by the state government. The state of Madhya Pradesh experienced a revenue surplus from 1981/82 to 1986/87. Revenue deficits emerged for the first time in 1987/88 when it was to the tune of 0.37% of SDP. The years 1989/90, 1992/93 and 1993/94 also experienced revenue surpluses. Since then deficits have been continuously incurred. A maximum of 3.64% was registered in 1998/99. It declined to 3.31% in 1999/2000. Figure 1 below graphs the growth in deficits. (Details of data are provided in the tables in the appendix). In interpreting these graphs as well as relative performances some care needs to be taken. For instance one may have a very low primary or revenue deficit (which normally is a good thing) but this could be due to the fact that the state's operations are at such a low level that it is in fact not performing its essential functions.

FIGURE 1



Having examined the broad trend in resource gaps as defined in three different measures of deficits, we now turn to examining the trends observed in the two policy instruments available to the government viz., expenditures and receipts. Expenditures are incurred by the government under two broad heads i.e. revenue expenditures and capital expenditures. Expenditures on revenue account are incurred on goods and services for current consumption, primarily on wages and salaries and do not result in creation of assets while expenditures on capital account, which result in creation of durable assets. Revenue expenditures are, however, politically sensitive and difficult to prune. This has resulted in the capital expenditures being slashed under a fiscal crunch situation. This is the general pattern for all states of India and Madhya Pradesh is no exception. In 1981/82 Revenue expenditures constituted 66.49% of total expenditures and capital expenditures 33.51%. The ratio has worsened significantly with 89.98% of total expenditures being incurred on revenue account and a mere 10.14% going towards capital assets. Figures 2 and 3 below paint a gloomy picture.

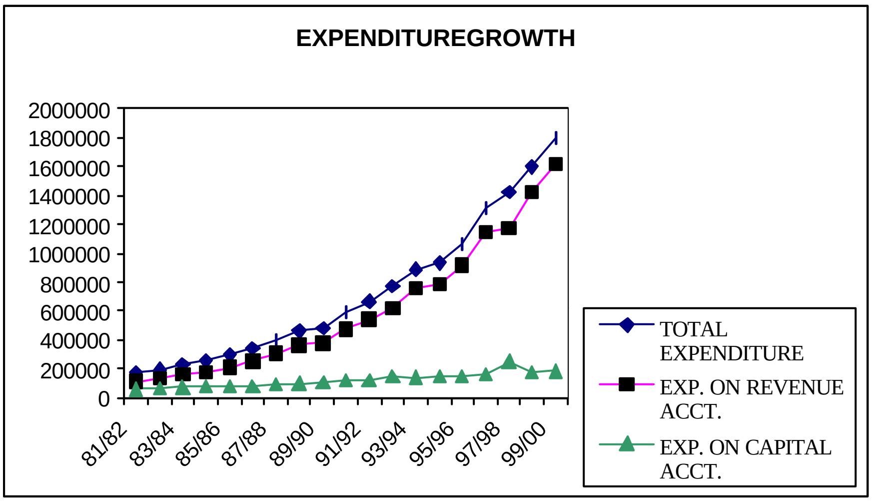
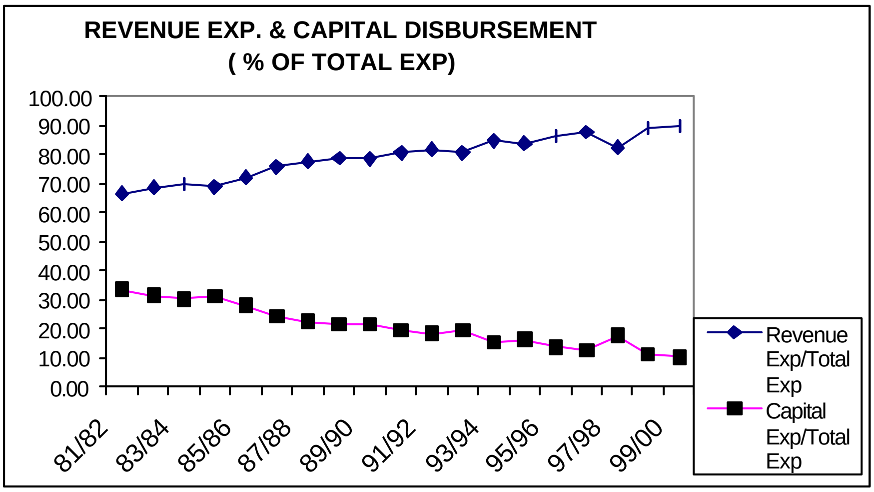


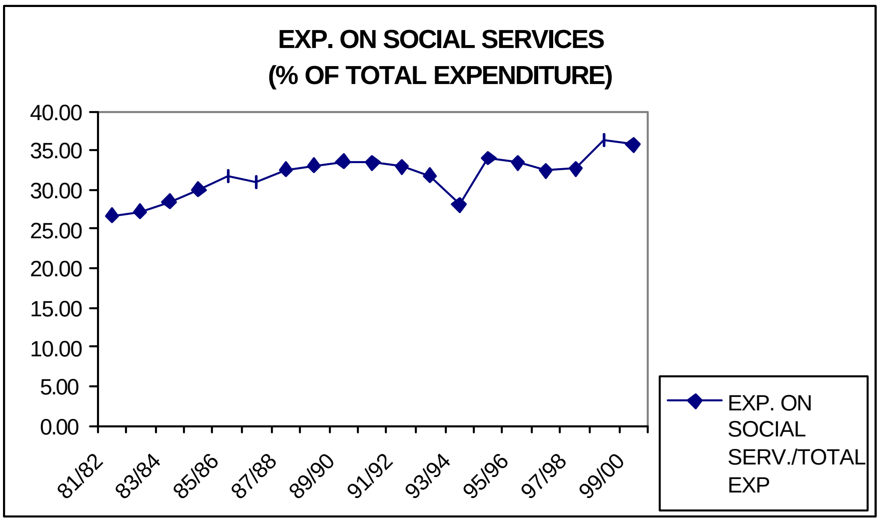
FIGURE 2

FIGURE 3



A closer look at some of the components of expenditures does, however, provide some respite. We took a close look at expenditures on social services as a proportion of total expenditures and at expenditures on administration as a proportion of total expenditures. While expenditure on social services may be considered as desirable, that on administration should be minimised. A large share of total resources if spent on administration would leave that much less for provision of public goods. We observe that the state of M.P. spent 26.76% of its total expenditure on social services in 1981/82. A generally increasing trend is noticed till 1990/91 when it reached 33.47% in 1990/91. It took a downward path for the next few years till it reached 28.03% in 1993/94. In 1994/95 it once again rose to 34.04%. Once again it started declining till 1996/97. It reached an all time high of 36.28% in 1998/99. In 1999/2000, however, it has been cut by 0.59 percentage points and stands at 35.67%. Figure 4 below graphs the trend in expenditure on social services.

FIGURE 4



Expenditures on administration siphoned off 6.58% of total expenditures in 1981/82. This rose to a maximum of 8.04% in 1983/84. In all other years the share of administrative expenditures has hovered around 7%. 1988/89 and 1996/97 are the two exceptional years when the share of administration expenditure fell to below the 7% mark. The graph below gives the broad picture.

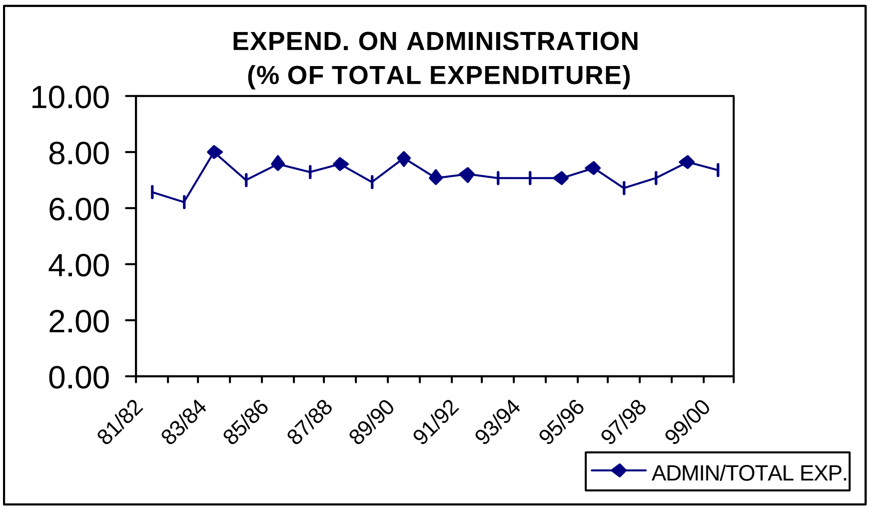


FIGURE 5

On the receipts front, the broad classification is into revenue receipts and capital receipts. Revenue receipts include tax and non-tax revenue. Within both, tax and non-tax revenues there is the component of own revenues generated by the state government and that which it receives from the centre in the form of grants, and its share in central government taxes as stipulated in the constitutional framework. Within revenue receipts the *tax revenue* for the state of M.P. stood at 48.57% in 1981/82. This has oscillated between 44% and 49% till 1986/87. The share of tax revenue crossed the 50% mark and reached 52.16% in 1989/90. In the very next year it again fell to 48.46% but in 1991/92 it again rose to 52.81%. For the next three years it remained below the 50% mark. In

1995/96 it touched a maximum of 54.92%. This fell to just over 50% in 1996/97. In 1997/98 it again climbed to almost 55%. Since then it has shown a declining trend but remained above the 50% mark. The share of *non-tax revenue* in total receipts was 31.31% in 1981/82. It remained around the 30% mark till 1983/84. In the latter half of the 80s the share of non-tax revenues oscillated around 24% to 27% but it crossed the 30% mark only in 1991/92. Its share continued to remain above the 30% mark in the first five years of the 90s till 1994/95. In 1995/96 it fell to 28.27% and continuing on a downward path it reached a low of 21.20% in 1998/99. In 1999/00 it has marginally increased to 22.99%.

The share of own tax revenue of the state in tax revenue is an important parameter to examine. The state of M.P. seems to have fared extremely well on this front. Own tax revenue comprised 58.23% of total tax revenue in 1981/82. This share rose further to 60.59% in 1984/85. It declined marginally and stayed around 59% for the next three years. In 1988/89 it once again rose to 61.86%. Since then it has continued to remain above the 60% mark and has risen to an all time high of 63.99% in 1999/2000.

The share of grants in total receipts varied between 9% to 10% between 1981/82 and 1985/86. It then climbed steadily to 13.63% in 1988/89. It dipped to 9.46% in 1989/90 but varied between 13% to 16% between 1990/91 and 1994/95. Since then a declining trend was noticed and it stood at 9.30% in 1999/00. Figures 6, 7, 8 and 9 depict the trends in receipts and its major components.

FIGURE 6

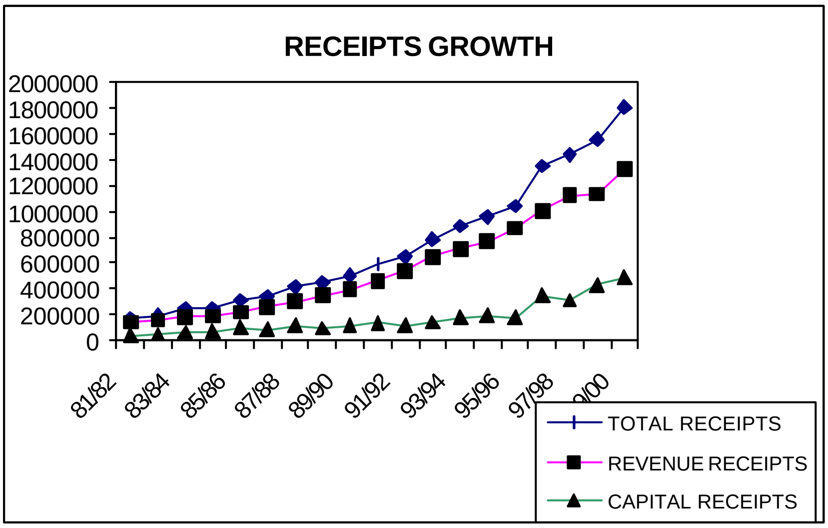


FIGURE 7

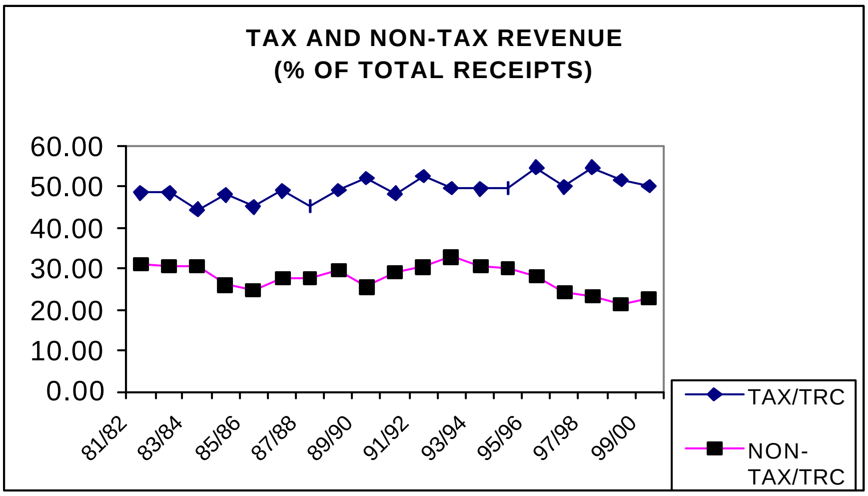


FIGURE 8

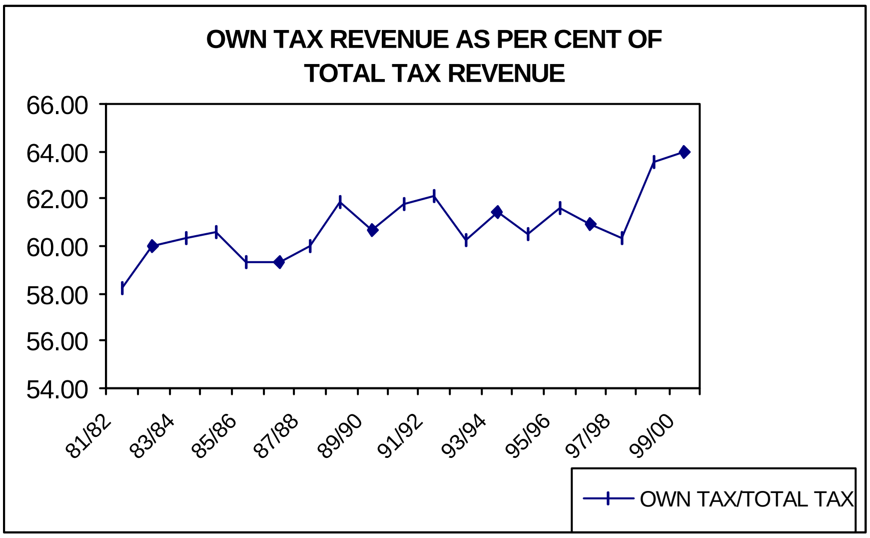
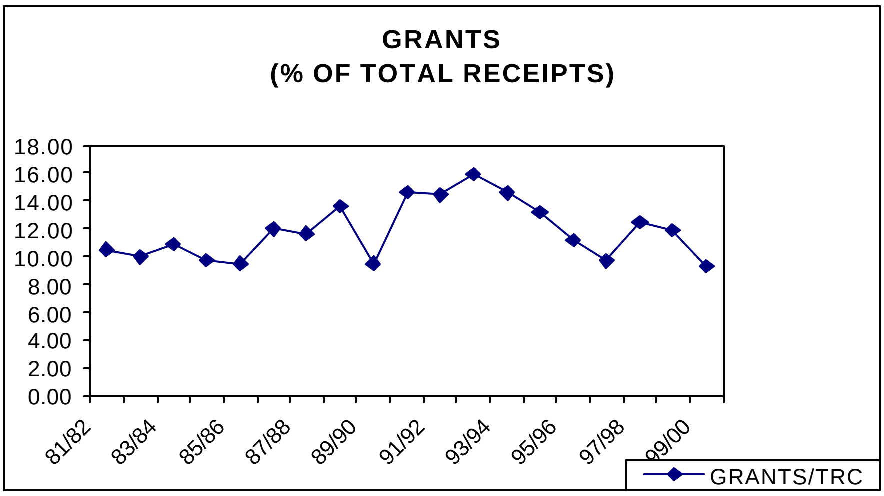


FIGURE 9



The highlights of the above discussion on the macro fiscal scenario of Madhya Pradesh can be summed up as:

- All three measures of Deficits (Gross Fiscal Deficit, Primary Deficit and Revenue Deficit) show significant growth and an increasing trend.

- Current expenditures i.e. expenditures on revenue account have increased at the cost of capital expenditures.

- On the receipts front, Madhya Pradesh has been successful on the front of own tax effort.

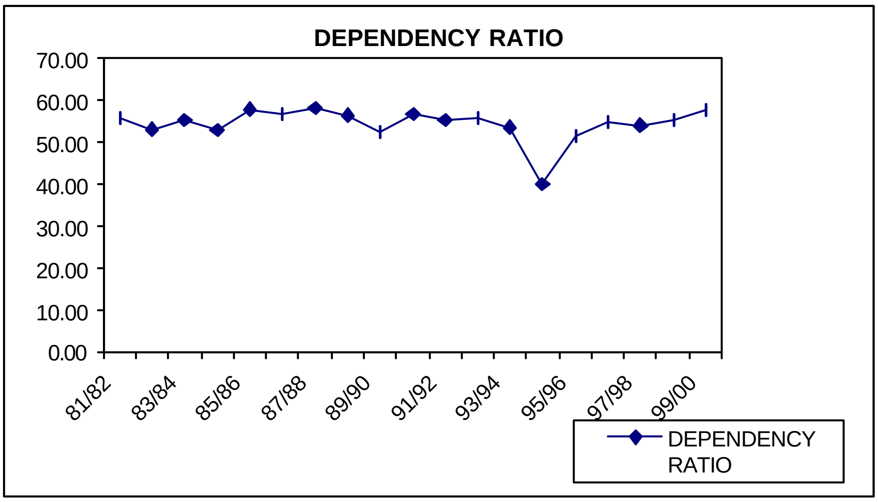
- The share grants from the centre to the state of Madhya Pradesh show a declining trend in recent times.

Having noticed a rising share of own tax revenues we constructed a measure to capture the extent of dependence of the state of Madhya Pradesh. The *Dependency Ratio* (DR) as defined in Pattnaik et. al. (1994) is:

$$DEPENDENCY\ \ RATIO = \frac{TOTAL\ EXPENDITURE - OWN\ \ INCOME\ (TAX + NON - TAX)}{TOTAL\ \ EXPENDITURE}$$

A plot of the Dependency Ratio is seen in figure 10 below.

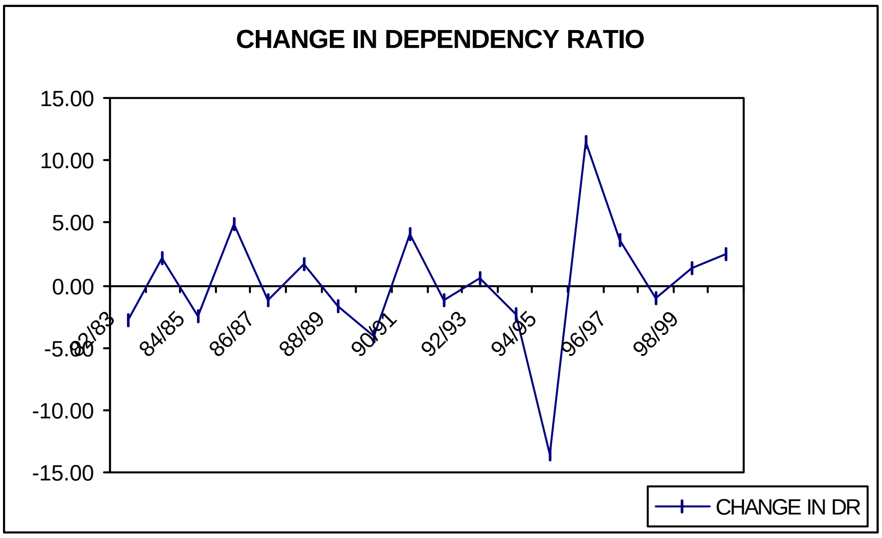
FIGURE 10



The Dependency Ratio (DR) has varied from a low 52% to a high of 58% between 1981/82 to 1993/94. In 1994/95 it fell sharply to 40% but once again increased to 51.19% in the vary next year and further to 55% in 1996/97. The last two years 1998/99 and 1999/00 have witnessed an increasing trend.

We were interested in observing not only the extent of dependence of the state but also in tracking the *change in dependency ratio*. We therefore computed the annual change in DR and a plot of this is presented in figure 11 below.

FIGURE 11

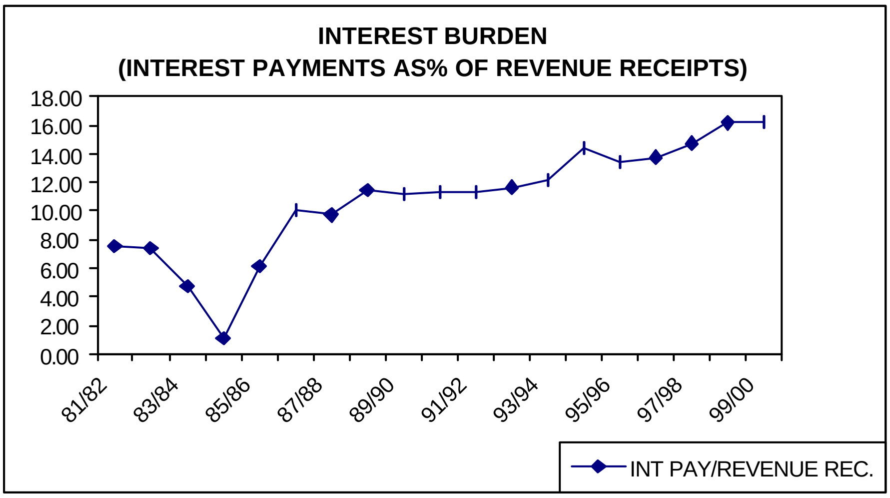


No clear trend pattern is discernible in the graph above. There is continuous oscillation in the extent of dependence at around 55%. No significant improvement or worsening is noticeable with the exception of one peak and one sharp dip.

With own incomes showing a rising trend but with the dependency ratio (defined as total expenditure *minus* own income as a proportion of total expenditure) not showing any significant improvement, it is only obvious that

borrowings of the state government are funding the burgeoning expenditures on revenue account. This is evident from figure 12 below, which graphs the mounting interest burden of the state of Madhya Pradesh (see Table A3 for details).

FIGURE 12



The period between 1981/82 and 1987/88 saw the share of interest payments in revenue receipts vary between 1.08% in 1984/85 to 10.06% in 1986/87. Since 1988/89 the share of interest payments in revenue receipts have shown a continuous increase. In 1999/2000 interest payments comprised 16.2% of revenue receipts.

Having obtained a fair idea of the macro picture that emerges on the fiscal front for the state of Madhya Pradesh, we proceeded to look at the performance of the state of M.P. alongside the performance of 13 other major states of India (including Andhra Pradesh, Bihar, Gujrat, Haryana, Karnataka, Maharashtra, Orissa Punjab, Rajathan, Tamil Nadu, Uttar Pradesh and West Bengal). Our sample leaves out the North-eastern states and the special category states from the analysis. The special category states are characterized by excessive reliance on central transfers and low capacity for raising own revenues. Comparison of the other major states of India, and M.P in particular, with these states would thus have been fallacious in the present context.

3.2 Computation of Performance Indices with 'EASE'

In order to judge the performance of M.P vis-à-vis 13 major states of India we have computed *performance indices* conforming with our conceptual framework characterised by **EASE.** Our index was computed as:

$$index = \frac{M1_{it}}{M1_{At}}$$

where,

$M1_{it}$ refers to Measure 1 for state i in time period t

$M1_{At}$ refers to the same Measure 1 obtained for all 14 states (inclusive of state i) in time period t.

This index is obtained for each of the years between 1981/82 and 1999/2000 and for each of the 14 states considered. For purposes of reporting we have obtained averages of these indices over five years viz. 1981/82 to 1985/86, 1986/87 to 1990/91, 1991/92 to 1996/96 and 1996/97 to 1999/2000. A break-up of our sample period into four sub-periods helps us track the improvement or worsening performance of the states. An index equal to 1 implies that state i follows the average pattern of the major states. The index being greater or less than unity would suggest if the state is better or worse than the overall trend depending how the index has been defined.

Finally, on the basis of each of the indices obtained for the five yearly intervals we have ranked the states. Such a ranking allows us to judge the performance of M.P and its improvement or deterioration over time not only in isolation but vis-à-vis other major states. A previous study by Pattnaik et. al. (1994) too has ranked the performance of states on the basis of some constructed measures of resource gap for the periods 1980-87 and 1987-94.

The methodology elaborated upon in the previous paragraph has been employed to judge how the state of M.P fares on the front of **E**quity, **A**dequacy and **E**fficiency in our **EASE** framework.

(a) Equity Index 1: *Revenue from Direct Taxes as a proportion of total receipts.*
Revenue generated from direct taxes is considered more equitous than that from indirect taxes, which does not differentiate between people from different income groups. An *index >1* would suggest that the *state performs better than the overall average.*

(b) Equity Index 2: *Expenditure on Social Services as percent of total expenditure*.
Expenditure on social services like education, health etc. is targeted towards the poorer section of society and hence more 'equitous'. An *index > 1* would imply that the *state fares better than the average trend.*

(c) Equity Index 3: *Per cent of people below poverty line*.
This measure of equity is standard and needs no elaboration. An *index > 1* would imply that the *state fares worse than the average trend*.

(d) Adequacy Index: *Gross Fiscal Deficit as per cent of SDP*.
This measure gives a broad measure of the existing resource gap. An *index > 1* would imply that the *state fares worse than the average trend*. Gross Fiscal Deficit is defined as given below:

GFD = RE – [CD – (DID+RLA+RLC)] - RR

Where RE = revenue expenditure
CD = capital disbursements
DID = discharge of internal debt
RLA = recovery of loans and advances

RLC = repayment of loans to the centre.

RR = revenue receipts

(e) Efficiency Index 1: Dependency Ratio (DR): This measure as defined in section 3.1 above is:

$$DEPENDENCY \quad RATIO = \frac{TOTAL\ EXPENDITURE - OWN\ \ INCOME\,(TAX\ + NON - TAX\,)}{TOTAL\ \ EXPENDITURE}$$

The lower the dependency ratio the greater would be the efficiency of the state government. Thus an *index > 1* would imply that the *state is worse than the overall average.*

(f) Efficiency Index 2*: Expenditure on Administration as per cent of total expenditure.*

Larger expenditure on administration is suggestive of a larger bureaucracy and thus represents inefficiency. An *index > 1* implies that the *state is worse than the overall average.*

(g) Efficiency Index 4: *Own tax revenue as per cent of total tax revenue*

The greater the own tax effort by the state government, the more efficient would be the state government. In this case an *index > 1* implies that the *state is better than the overall average.*

To begin with, we computed the three equity indices as defined above. The results obtained have been tabulated in Tables 1 and 2 below

TABLE 1

	EQUITY INDEX 1				EQUITY INDEX 2				EQUITY INDEX 3			
	DIRECT TAX REVENUE (% OF TOTAL RECEIPTS)				EXPENDITURE ON SOCIAL SERVICES (% OF TOTAL EXPENDITURE)				% OF PEOPLE BELOW POVERTY LINE			
	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00
A.P	0.91	0.77	0.74	0.83	1.19	1.07	1.00	1.02	0.65	0.64	0.77	0.62
BIHAR	0.67	0.50	0.62	0.85	1.04	0.97	1.08	1.08	1.30	1.34	1.29	1.47
GUJRAT	1.00	0.85	0.88	0.86	1.03	0.97	0.96	0.95	0.79	0.80	0.81	0.66
HARYANA	1.05	0.98	0.74	0.87	0.80	0.87	0.83	0.76	0.43	0.40	0.78	0.44
KARNA.	0.95	0.98	1.20	1.23	0.86	1.00	1.02	1.04	0.94	0.96	0.95	0.86
KERALA	1.27	1.19	1.26	0.90	1.33	1.21	1.15	1.05	0.81	0.76	0.82	0.65
M.P	0.75	0.71	0.65	0.82	0.94	1.02	1.08	1.08	1.08	1.06	1.09	1.22
MAHA	1.03	1.16	1.48	1.78	0.88	0.93	0.98	0.98	1.01	1.02	1.01	0.99
ORISSA	0.55	0.83	0.41	0.39	1.10	0.97	1.05	1.09	1.40	1.37	1.21	1.52
PUNJAB	1.12	0.86	0.69	0.59	0.80	0.91	0.73	0.72	0.34	0.32	0.59	0.29
RAJAS	0.81	0.66	0.61	0.69	1.07	1.03	1.08	1.14	0.88	0.91	0.87	0.73
TAMIL N.	1.09	1.08	0.99	0.96	1.04	1.13	1.14	1.10	1.10	1.06	0.99	0.94
U.P	1.09	0.96	0.82	0.93	0.87	0.88	0.86	0.89	1.04	1.03	1.07	1.11
W.BENG	1.55	2.27	2.43	1.27	1.21	1.15	1.14	1.06	1.14	1.09	1.00	1.05

TABLE 2

14 Major States	RANKS BASED ON EQUITY INDEX 1				RANKS BASED ON EQUITY INDEX 2				RANKS BASED ON EQUITY INDEX 3			
	DIRECT TAX REVENUE (% OF TOTAL RECEIPTS)				EXPENDITURE ON SOCIAL SERVICES (% OF TOTAL EXPENDITURE)				% OF PEOPLE BELOW POVERTY LINE			
	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00
A.P	10	11	8	10	3	4	9	9	3	3	2	3
BIHAR	13	14	12	9	7	10	6	4	13	13	14	13
GUJRAT	8	9	6	8	8	9	11	11	4	5	4	5
HARYANA	6	5	9	7	13	14	13	13	2	2	3	2
KARNA.	9	6	4	3	12	7	8	8	7	7	7	7
KERALA	2	2	3	6	1	1	1	7	5	4	5	4
M.P	12	12	11	11	9	6	4	5	10	11	12	12
MAHA	7	3	2	1	10	11	10	10	8	8	10	9
ORISSA	14	10	14	14	4	8	7	3	14	14	13	14
PUNJAB	3	8	10	13	14	12	14	14	1	1	1	1
RAJAS	11	13	13	12	5	5	5	1	6	6	6	6
TAMIL N.	5	4	5	4	6	3	3	2	11	10	8	8
U.P	4	7	7	5	11	13	12	12	9	9	11	11
W.BENG	1	1	1	2	2	2	2	6	12	12	9	10

For Equity index 1 (share of direct taxes in total tax revenue) and Equity index 2 (share of expenditure on social services) an index greater than unity suggests that the state has done *better* than the overall average. Based on Equity index 1 we find that the state of M.P. has marginally improved from 0.75 in the first sub-period of 81/82 to 85/86 to 0.82 in the period 96/97 to 99/00. Its relative position among the 14 states has improved from 12^{th} in the 80s to 11^{th} in the 90s. Based on the index of *Equity 2* (share of social services in total expenditure) a significant improvement is noticed for M.P. Its index has increased from 0.94 in the first sub-period to 1.08 in the 90s. Its rank has improved from 9^{th} in the first half of the 80s to 6^{th} in the second half of the 80s. In the first five years of the 90s its rank further improved to 4^{th}. However, in the latter half of the 90s the position of the state has slipped to 5^{th}.

Equity Index 3 considers the per cent of people below poverty line. An index greater than unity in this case suggests a performance *worse* than the overall average. On this count the state of M.P. has shown steady deterioration. Its index has worsened from 1.08 in the first sub-period to 1.22 in the last. Its relative ranking too has shown a steady deterioration. It stood 10^{th} in the first half of the 80s. It moved to 11^{th} in the latter half of the 80s. In the 90s it has held on to the 12^{th} position. Thus, while equity index 1 (share of direct taxes in total receipts) and equity index 2 (share of expenditure on social services) show that there has been a move towards more equitous government intervention in the state of M.P, the third index of equity (% of people below poverty line) suggests that government intervention does not seem to have succeeded into bringing up people from below the poverty line. Of course, care has to be taken in interpreting these indices. The two equity indices and the other indices computed have to be interpreted in conjunction with each other.

The *Adequacy index* is defined as *Gross Fiscal Deficit as per cent of SDP*. An index greater than unity suggests that the performance has been *worse* than the average performance. The indices and ranks obtained are listed in Tables 3 and 4.

TABLE 3

	ADEQUACY INDEX GROSS FISCAL DEFICIT (AS % OF STATE DOMESTIC PRODUCT)				Ranks Based on ADEQUACY INDEX			
	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00
A.P	0.88	0.89	0.97	0.82	4	6	8	5
BIHAR	1.06	1.04	1.20	0.79	8	8	10	4
GUJRAT	1.07	1.39	0.89	0.99	9	12	5	8
HARYANA	1.12	0.83	0.80	0.90	10	5	4	6
KARNA.	1.03	0.82	0.97	0.75	7	4	7	3
KERALA	0.81	1.13	1.08	1.06	3	10	9	9
M.P	0.94	0.93	0.74	0.75	5	7	2	2
MAHA	1.02	0.81	0.73	0.91	6	3	1	7
ORISSA	1.20	1.41	1.64	1.75	12	13	14	14
PUNJAB	1.40	1.75	1.51	1.17	14	14	13	10
RAJAS	1.23	1.18	1.32	1.33	13	11	12	13
TAMIL N.	0.75	0.75	0.78	0.72	1	1	3	1
U.P	1.12	1.13	1.30	1.28	11	9	11	12
W.BENG	0.76	0.76	0.91	1.24	2	2	6	11

Over the entire period the adequacy index for M.P. has remained below unity thus suggesting that it has performed better than the average performance of 14 major states of India. Over the entire sample period being considered, the index shows an improvement from 0.94 in the first half of the 80s to 0.75 in the last half of the 90s. However, its relative rank has witnessed ups and downs. Its relative rank has slipped from 5th in the first half of the 80s to 7th in the latter half. In the 90s it showed remarkable improvement and stood 2nd. On the whole, on the front of Gross Fiscal Deficit, the state of M.P. has performed well and shown an improvement in the 90s.

Finally, we examine the performance of M.P. on the basis of the three measures of efficiency that we have defined in the beginning of this sub-section. Results obtained have been tabulated in Tables 4 and 5 below.

TABLE 4

EFFICIENCY INDEX 1					**EFFICIENCY INDEX 2**				**EFFICIENCY INDEX 3**			
DEPENDENCY RATIO (DR) (%) (Total exp – Own Income as % of total expend.)					**Administrative expend. (% of total expend.)**				**Own tax revenue (% of total tax revenue)**			
	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00
A.P.	0.90	0.90	1.03	1.01	1.13	0.90	0.90	0.82	1.03	1.03	0.98	0.99
BIHAR	1.31	1.23	1.33	1.31	1.18	1.26	1.31	1.46	0.61	0.59	0.57	0.54
GUJRAT	0.88	0.86	0.78	0.84	0.93	0.88	0.79	0.72	1.15	1.24	1.20	1.18
HARYANA	0.83	0.75	0.67	0.68	0.85	0.86	0.79	0.77	1.21	1.24	1.23	1.21
KARNA.	0.88	0.85	0.84	0.80	0.72	0.77	0.82	0.86	1.09	1.10	1.13	1.10
KERALA	0.92	0.98	0.93	0.92	0.78	0.81	0.73	0.70	1.06	1.05	1.08	1.10
M.P	1.00	1.04	0.97	1.03	1.02	1.02	1.00	1.01	0.88	0.88	0.88	0.88
MAHA	0.78	0.73	0.73	0.76	1.15	1.09	1.10	1.11	1.18	1.20	1.21	1.23
ORISSA	1.29	1.34	1.38	1.36	1.01	0.92	0.83	0.92	0.70	0.70	0.64	0.68
PUNJAB	0.95	0.97	0.86	0.88	0.97	1.19	1.55	1.38	1.23	1.23	1.22	1.21
RAJAS	1.09	1.18	1.15	1.10	0.94	0.81	0.83	0.80	0.94	0.93	0.91	0.95
TAMIL N.	0.89	0.91	0.86	0.83	0.91	0.95	0.91	1.00	1.09	1.06	1.10	1.13
U.P	1.22	1.23	1.28	1.25	0.98	1.09	1.09	1.17	0.80	0.78	0.78	0.77
W.BENG	1.07	1.08	1.10	1.26	1.11	1.13	1.16	1.07	0.95	0.97	0.95	0.90

TABLE 5

14 Major States	RANKS BASED ON EFFICIENCY INDEX 1				RANKS BASED ON EFFICIENCY INDEX 2				RANKS BASED ON EFFICIENCY INDEX 3			
	DEPENDENCY RATIO (DR) (Total exp - Own Income as per cent of total expend.)				**Administrative expend. (% of total expend.**				**Own tax revenue as % of total tax revenue**			
	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00	81/82 to 85/86	86/87 to 90/91	91/92 to 95/96	96/97 to 99/00
A.P	6	5	9	8	12	6	7	5	8	8	8	8
BIHAR	14	12	13	13	14	14	13	14	14	14	14	14
GUJRAT	3	4	3	5	5	5	3	2	4	2	4	4
HARYANA	2	2	1	1	3	4	2	3	2	1	1	2
KARNA.	4	3	4	3	1	1	4	6	5	5	5	6
KERALA	7	8	7	7	2	3	1	1	7	7	7	7
M.P	9	9	8	9	10	9	9	9	11	11	11	11
MAHA	1	1	2	2	13	11	11	11	3	4	3	1
ORISSA	13	14	14	14	9	7	5	7	13	13	13	13
PUNJAB	8	7	5	6	7	13	14	13	1	3	2	3
RAJAS	11	11	11	10	6	2	6	4	10	10	10	9
TAMIL N.	5	6	6	4	4	8	8	8	6	6	6	5
U.P	12	13	12	11	8	10	10	12	12	12	12	12
W.BENG	10	10	10	12	11	12	12	10	9	9	9	10

For Efficiency index 1 and 2, an index greater than unity indicates a performance *worse* than the average. However, for Efficiency index 3, an index greater than unity is indicative of performance better than the average.

Based on *Efficiency index 1* i.e. as far as the Dependency Ratio is concerned, the performance index for the state of M.P was unity in the first half of the 80s. In the latter half it deteriorated to 1.04. In the first half of the 90s it improved and in fact surpassed the average performance of other major states with its index falling below unity (0.97). In the latter half of the 90s the performance on this front has once again deteriorated to 1.03. M.P's relative rank stood at 9 throughout the 80s, it improved to 8 in the first half of the 90s but has once again slipped to 9th in the latter half of the 90s.

Efficiency index 2 is defined as the share of expenditure on administration in total expenditure. Its index stood at 1.02 through the 80s. In the first half of the 90s it improve to reach 1. In the latter half of the 90s the index has improved marginally to reach 1.01. The position of M.P. was 10th in the beginning of the 80s. Since the mid 80s, however, it has occupied the 9th position.

Efficiency index 3 defined as the share of own tax revenue in total tax revenue. For this index an index greater than unity signifies a performance better than the average. The state of M.P. has done poorly on this count consistently. Its index has been consistent and stood at 0.88 throughout the 80s and the 90s. Its has consistently held on to the 11th position in the rank tally.

Finally, an a*d-hoc* grand rank has been obtained for Equity, Adequacy and Efficiency for each of the states. Since three different indices have been used for Equity we summed up the ranks obtained for each of the indices and for the four time intervals so as to arrive at one number for Equity. A similar exercise was carried out for Efficiency. In case of the Adequacy index only one measure has been used so only a summation of the four time intervals was required. The states were then re-arranged and the state with the lowest summation of the ranks was allotted the first grand rank. Results obtained have been tabulated below

TABLE 6

Grand Rank for Adequacy		**Grand Rank for Efficiency**		**Grand Rank for Equity**	
1	TAMIL NADU	1	HARYANA	1	KERALA
2	MADHYA PRADESH	2	GUJRAT	2	WEST BENGAL
3	MAHARASHTRA	3	KARNATAKA	3	HARYANA
4	KARNATAKA	4	MAHARASHTRA	4	GUJRAT
5	WEST BENGAL	5	KERALA	5	MAHARASHTRA
6	ANDHRA PRADESH	6	TAMIL NADU	6	TAMIL NADU
7	HARYANA	7	PUNJAB	7	PUNJAB
8	BIHAR	8	ANDHRA PRADESH	8	RAJASTHAN
9	KERALA	9	RAJASTHAN	9	KARNATAKA
10	GUJRAT	10	MADHYA PRADESH	10	UTTAR PRADESH
11	UTTAR PRADESH	11	WEST BENGAL	11	ORISSA
12	RAJASTHAN	12	ORISSA	12	MADHYA PRADESH
13	PUNJAB	13	UTTAR PRADESH	13	BIHAR
14	ORISSA	14	BIHAR	14	ANDHRA PRADESH

For the purpose of summarising our results one could say that the state of M.P. has fared well on the adequacy front with a rank of 2, fared not so well on the efficiency front with a rank of 10 and fared even worse on the equity front with a rank of 12. However, there are two points that we would like to draw attention to with regard to the interpretation of these ranks and indices computed. Firstly, these ranks indicate the **relative performance** of the states. The performance of Madhya Pradesh is being judged relative to the overall average performance of 14 major states of India. So, while the state of M.P. may have done well to improve its own performance this may not be reflected in the indices computed or the ranks allotted. A straightforward illustration of this point is seen from the performance of the state of Madhya Pradesh as regards its own tax effort. Table A3 and Figure 8 clearly indicate that the state has done well to increase its share of own tax revenue in total tax revenue from 58.23% in 1981/82 to 63.99% in 1999/2000. However, Tables 4 and 5 above show that its index has remained consistent at 0.88 and it is ranked 11 over the entire sample period. This suggests that the state of M.P. has not fared particularly well relative to the average overall performance of 14 major states of India.

The second point that we wish to re-iterate is that **numbers do not necessarily reveal the full story.** It may be that a state is seen to do well in spending a lower share on revenue expenditures. Technically, this state would have received a good rank in our exercise. However, this could well be due to the fact that the state is operating at a low level of activity and in fact, may not be performing its essential functions. Thus, we can hardly over emphasize the need for caution when interpreting the results of any empirical exercise (including ours).

4. Conclusion

For the limited purpose of this paper, we are done. In this paper we have suggested a framework and computational methodology for evaluating the fiscal health of a State economy. We have also illustrated the use of our framework for the case of Madhya Pradesh. It cannot be over emphasized that this is an exploratory work and represents an unfinished research agenda. The graphs reported and indices computed do lead to some important insights, as we have mentioned at various points in the text. There are two aspects of this that are of vital importance, one, the theoretical underpinnings of these indices have to be studied; two, these indices have to be put together to form a grand index. These, we dare say are non-trivial tasks but must wait another day.

More importantly this paper looks only (albeit advisedly) at the broad macro picture. However important that cannot ever be enough. Indeed we are aware that *god and devil lie in the detail!* The structural details of various macro variables studied here have to be put under a microscope. Even then the answer to the question: *where do we go from here,* is likely to be far from obvious. The micro-dynamic path of implementation of finely tuned policy design has to be traced, constrained as it inevitably is, by the domain of political feasibility. That, we are sure is an agenda not for the weak hearted!

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APPENDIX
KEY MACRO INDICATORS FOR THE STATE OF MADHYA PRADESH

TABLE A1

YEAR	GROSS FISCAL DEFICIT (% of SDP)	REVENUE DEFICIT (% of SDP)	PRIMARY DEFICIT (% of SDP)
81/82	2.72	-2.61	1.55
82/83	2.91	-1.88	1.78
83/84	3.14	-1.50	2.40
84/85	4.14	-0.66	3.98
85/86	3.70	-0.51	2.75
86/87	3.90	-0.24	2.10
87/88	3.90	0.32	2.33
88/89	3.98	0.67	2.17
89/90	2.97	-0.40	1.19
90/91	3.33	0.66	1.66
91/92	3.06	0.14	1.17
92/93	2.45	-0.85	0.31
93/94	2.11	-1.04	0.01
94/95	2.76	0.37	0.63
95/96	2.85	0.83	0.83
96/97	2.93	2.20	0.84
97/98	2.59	0.67	0.23
98/99	5.23	3.64	2.90
99/00	4.42	3.31	2.00

TABLE A2

	Revenue Expend. (% of Total Expend.)	Capital Disbursements (% of Total Expend.)	Total Exp.On Social Services (% Of Total Expend.)	Adminstrative Expend. (% of Total Expend.)
81/82	66.49	33.51	26.76	6.58
82/83	68.53	31.47	27.31	6.23
83/84	69.87	30.13	28.50	8.04
84/85	68.75	31.25	29.99	7.00
85/86	72.11	27.89	31.73	7.62
86/87	75.59	24.41	30.97	7.33
87/88	77.65	22.35	32.60	7.59
88/89	78.72	21.28	33.06	6.94
89/90	78.36	21.64	33.56	7.77
90/91	80.46	19.54	33.47	7.11
91/92	81.67	18.33	33.02	7.21
92/93	80.35	19.65	31.82	7.10
93/94	84.68	15.32	28.03	7.10
94/95	83.83	16.17	34.04	7.09
95/96	86.29	13.71	33.51	7.43
96/97	87.54	12.46	32.48	6.76
97/98	82.44	17.56	32.71	7.09
98/99	89.04	10.96	36.28	7.64
99/00	89.86	10.14	35.67	7.39

TABLE A3

	Tax Revenue (% of Total Receipts)	Non-Tax Revenue (% of Total receipts)	Grants (% of Total Receipts)	Own Tax Revenue (% of Total Tax Revenue)	Interest Payments (% of Revenue Receipts)
81/82	48.57	31.31	10.51	58.23	7.59
82/83	48.58	30.58	9.96	60.00	7.44
83/84	44.53	30.66	10.86	60.31	4.79
84/85	48.17	26.03	9.74	60.59	1.08
85/86	45.22	24.88	9.49	59.29	6.13
86/87	49.07	27.68	11.98	59.33	10.06
87/88	45.48	27.76	11.66	59.97	9.74
88/89	49.26	29.83	13.63	61.86	11.42
89/90	52.16	25.56	9.46	60.65	11.17
90/91	48.46	28.99	14.63	61.82	11.28
91/92	52.81	30.50	14.39	62.12	11.30
92/93	49.77	33.01	15.87	60.25	11.51
93/94	49.51	30.80	14.55	61.43	12.28
94/95	49.80	30.14	13.19	60.49	14.36
95/96	54.92	28.27	11.18	61.59	13.38
96/97	50.04	24.32	9.65	60.89	13.74
97/98	54.88	23.41	12.48	60.35	14.75
98/99	51.57	21.20	11.89	63.53	16.17
99/00	50.22	22.99	9.30	63.99	16.20

TABLE A4

	Dependency Ratio (%)	Annual Change in Dependency ratio
81/82	55.88	
82/83	53.14	-2.73
83/84	55.34	2.19
84/85	52.92	-2.41
85/86	57.85	4.93
86/87	56.67	-1.18
87/88	58.29	1.61
88/89	56.57	-1.72
89/90	52.55	-4.02
90/91	56.64	4.09
91/92	55.40	-1.23
92/93	55.97	0.57
93/94	53.62	-2.35
94/95	40.07	-13.55
95/96	51.49	11.42
96/97	55.08	3.59
97/98	54.03	-1.05
98/99	55.37	1.34
99/00	57.80	2.44

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