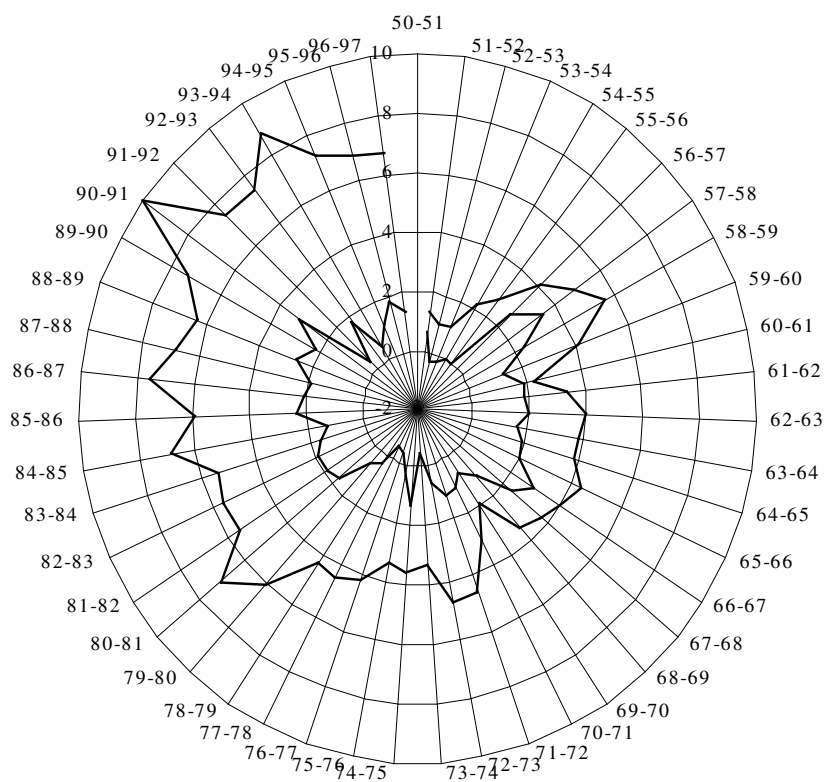


IS MAHARASHTRA PERFORMING WORSE THAN OTHER STATES?

A Comparative Study of the Public Finances of Indian States

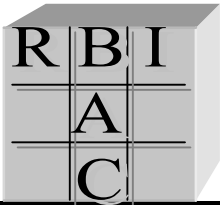
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*DR. BABASAHEB AMBEDKAR CHAIR:
RBI UNIT IN POLITICAL ECONOMY*

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Abstract	
<p>Second Generation Reforms (SGR) has become the new buzz-word around policy circles. In fact, a few governments (Central government included) have gone ahead and proclaimed that they have already initiated SGR. Of course, it is not made clear whether these SGR are being initiated after having already achieved all that was expected of First Generation Reforms (FGR). Generally, it is not even spelt out exactly what constitutes the SGR that are being ushered in. From the point of view of the State governments, government finances seem to be the most relevant and essential component of FGR, since for the economy as a whole, it is stability in the fiscal balances of all levels of government that is crucial. This necessarily implies that as far as FGR are concerned, the very least that State governments should aim for is to set their fiscal balances in order.</p> <p>Maharashtra's pre-eminent position among the major states of the country has come under a cloud in recent years. This study tries to examine in detail the public finances of the state of Maharashtra as an indicator of progress as far as FGR are concerned. The state of public finances make up the environment within which investment decisions get taken and there is sufficient (international) evidence to show that adverse fiscal balances act as deterrent to investment. While we do not examine the links between fiscal balances and investment in Maharashtra we carry out a detailed study of the public finances of the state. We also compare Maharashtra's performance with the 13 large states focusing more closely on the state's closest competitors: Andhra Pradesh, Gujarat, Karnataka and Tamil Nadu.</p>	
Key Words: Fiscal Balances, Deficits JEL Code(s): H72	

IS MAHARASHTRA PERFORMING WORSE THAN OTHER STATES?

A Comparative Study of the Public Finances of Indian States

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Introduction

Second Generation Reforms (SGR) has become the new buzz-word around policy circles. In fact, a few governments (Central government included) have gone ahead and proclaimed that they have already initiated SGR. Of course, it is not made clear whether these SGR are being initiated after having already achieved all that was expected of First Generation Reforms (FGR). Generally, it is not even spelt out exactly what constitutes the SGR that are being ushered in. Further, at the level of State governments it is not clear what were the exact ingredients of FGR.

FGR, by and large, dealt with items in the Washington Consensus (Holden and Rajapatirana 1997, World Bank, 2000) which included (among others):

- Fiscal discipline.
- Redirection of public expenditure toward education, health, and infrastructure investment.
- Tax reform—broadening the tax base and cutting marginal tax rates.
- Interest rates that are market determined and positive (but moderate) in real terms.
- Competitive exchange rates.
- Trade liberalization—replacement of quantitative restrictions with low and uniform tariffs.

A glance at the list of FGR given above shows that many of these have little relevance for State governments in India with the exception of government finances. This is an essential component of FGR since for the economy as a whole, it is stability in the fiscal balances of all levels of government that is crucial. This necessarily implies that as far as FGR are concerned, the very least that State governments should aim for is to set their fiscal balances in order.

Maharashtra's pre-eminent position among the major states of the country has come under a cloud in recent years. There is sufficient anecdotal evidence to support this. Karnataka and Andhra Pradesh have taken the IT tide at the flood and have been able to attract a lot of foreign and domestic investment. The high profile Indian School of Business was unable to find Maharashtra a hospitable place to set up operations. In a separate study we have found that many of the factors that made governance in Maharashtra efficient have deteriorated (see Karnik, 2001).

The purpose of this study is to examine in detail the public finances of the state of Maharashtra as an indicator of progress as far as FGR are concerned. The state of public finances make up the environment within which investment decisions get taken and there is sufficient (international) evidence to show that adverse fiscal balances act as deterrent to investment. While we do not examine the links between fiscal balances and investment in Maharashtra we carry out a detailed study of the public finances of the state. We also compare Maharashtra's performance with the 13 large states focusing more closely on the state's closest competitors: Andhra Pradesh, Gujarat, Karnataka and Tamil Nadu. In section 1 we present a profile of the various fiscal balance measures that we employ in this study. Section 2 discusses the methodology used to compare Maharashtra's performance with other states. Section 3 presents the results of estimation. We seek to examine the reasons for Maharashtra's deteriorating fiscal balances in Section 4. A small econometric exercise seeks to examine the effects of adverse fiscal balances on the rate of growth of the state in Section 4. Finally, Section 5 concludes.

1. A Profile of Various Fiscal Balance Measures

A variety of measures are available for judging fiscal balances of any level of government. The level of government, whether Central, State or Local, determines which are the most appropriate measures. We propose to employ a variety of measures of fiscal balance as discussed in this section for 14 states in all. We have also tried to compare Maharashtra (MAH) *vis-à-vis* the REST. Appendix II lists the states covered in this paper. It may be pointed out that REST refers to the average over the remaining 13 (major) states. Throughout the analysis in this paper a distinction will be made between

MAH and the remaining 13 states taken individually as well as a consolidated average in the form of 'REST'. The inclusion of all the states of the Indian Federation was not possible primarily due to unavailability of data on all the fiscal variables for all the states and also due to the fact that, the inclusion of numerous small states could well have biased our results.

The purpose of this study is to offer a basis for comparing Maharashtra with other states and help us to judge whether its performance is better or worse than that of others. The main reason for comparing Maharashtra with the 13 states taken individually (apart from their consolidated average) was to evaluate how much better or worse Maharashtra was faring especially as compared to its closest competitors, viz., Andhra Pradesh (AP), Gujarat (GUJ), Karnataka (KAR), Tamil Nadu (TND).

The measures of fiscal balance that will be used in this paper are the following:

(a) Revenue Deficit: This is measured as:

$$RD = RE - RR \quad (1)$$

where,

RE = Revenue Expenditures

RR = Revenue Receipts

RD = Revenue Deficit

(b) Capital Deficit: This is measured as:

$$CD = CE - CR \quad (2)$$

where,

CE = Capital Expenditures

CR = Capital Receipts

CD = Capital Deficit

(c) Gross Fiscal Gap: This is measured as follows:

$$GFG = (RE+CE) - RR \quad (3)$$

where,

GFG = Gross Fiscal Gap

It needs to be noted that the measure used here is different from that used by say Pattanaik *et al* (1994, 1999). Specifically, we do not exclude from consideration discharge of internal debt and repayment of loans to the Centre. Both of these involve a commitment of resources for the states and to the extent that these are factored out of CE, the requirement of resources is reduced. We have not done that. In order to avoid confusion and in view of differences with the approach of Pattanaik *et al* we do not call our measure Gross Fiscal Deficit, even though it closely resembles it.

In Appendix III (A) we present profiles of the conventional fiscal measures discussed above for MAH, REST, AP, GUJ, KAR and TND.

The next three measures of fiscal balance have been proposed by Pattanaik *et al* (1994).

(d) Basic Resources Gap (1): This is measured as follows:

$$\text{BRG1} = (\text{RE} + \text{CE}) - (\text{OTAR} + \text{ONTR}) \quad (4)$$

where,

OTAR = Own tax revenues

ONTR = Own non-tax revenues

(e) Basic Resource Gap (2): This is measured as follows:

$$\text{BRG2} = (\text{RE} + \text{CE}) - [(\text{OTAR} + \text{ONTR}) + (\text{ID} - \text{ML}) + (\text{PFS} + \text{RFD} + \text{OCR})] \quad (5)$$

where,

ID = Internal Debt

ML = Market Loans

PFS = Provident Funds

RFD = Reserve Funds and Deposits

OCR = Other Capital Receipts

(f) Basic Resource Gap (3): This is measured as follows:

$$\text{BRG3} = (\text{RE} + \text{CE}) - [(\text{OTAR} + \text{ONTR} + \text{SCT} + \text{SGFC}) + (\text{ID} - \text{ML}) + (\text{PFS} + \text{RFD} + \text{OCR})] \quad (6)$$

where,

SCT = State's share in Central Taxes

SGFC = Statutory Grants from the Centre

The presence of a BRG automatically implies that it has to be financed from resources beyond the control of the state. Each of the BRGs reveals varying extent of fiscal dependency of the state on the Central Government, RBI and other agencies. The following means of financing the BRG may be noted:

$$\text{BRG1} = \text{SCT} + \text{GFC} + \text{CR} + \text{WMA} \quad (7)$$

$$\text{BRG2} = \text{SCT} + \text{GFC} + \text{ML} + \text{LAC} + \text{WMA} \quad (8)$$

$$\text{BRG3} = \text{NSGFC} + \text{ML} + \text{LAC} + \text{WMA} \quad (9)$$

where,

GFC = Grants from the Centre

WMA = Ways and Means Advances

LAC = Loans and Advances from the Centre

NSGFC = Non-statutory Grants from the Centre.

BRG1 gives the highest level of financing requirements since only own resources of the state are taken into account on the revenue of side of the gap. However, the state may still have some control over at least some of the financing items of BRG1 listed above. At the other extreme is BRG3, which quantifies the extent of dependency on completely exogenous factors over which the state does not have any control at all.

In Appendix III (B) we present profiles of the fiscal measures proposed by Pattanaik *et al* (1994) for MAH, REST, AP, GUJ, KAR and TND.

Following Pattanaik *et al* (1994), we compute the following ratios. A measure of fiscal stress on a state can be computed as the ratio of BRG3 to BRG1.

$$\text{Fiscal Stress Ratio (FSR)} = \text{BRG3/BRG1} \quad (10)$$

Further, considering the total resource requirement of the State as given by its total expenditures (TE = RE + CE), we can compute the fiscal dependency ratio (FDR) as follows:

$$\text{FDR1} = \text{BRG1/TE} \quad (11)$$

$$\text{FDR2} = \text{BRG2/TE} \quad (12)$$

$$\text{FDR3} = \text{BRG3/TE} \quad (13)$$

Appendix III (C) gives a profile of the ratios listed in equations (10) – (13) for MAH, REST, AP, GUJ, KAR and TND over the period 1990-91 to 1999-2000.

2. Estimating the Growth of Various Fiscal Balance Measures and Ratios

In this section we propose to investigate how the various fiscal balance measures as well as the fiscal stress and fiscal dependency ratios have behaved in the post-reforms period for Maharashtra *vis-à-vis* REST (i.e, the average over the remaining 13 states). We will also have a subsidiary objective of comparing Maharashtra's performance with that of the other states of India. For this purpose we propose to estimate pooled cross-section time series trend growth models using the *least squares dummy variables* technique. This will enable us to examine whether the growth of a fiscal measure or fiscal ratio in other states is higher or lower than that for Maharashtra.

We first estimate the following pooled model, so as to compare the performance of MAH *vis-à-vis* REST:

$$Y_{it} = \alpha + \beta T + \gamma T^2 + \delta_i \text{ DUMMY} + \varepsilon_i (T * \text{ DUMMY}) + \phi_i (T^2 * \text{ DUMMY}) \quad (14)$$

where,

Y_{it} = fiscal measure / ratio of interest for the i^{th} cross-section unit in the t^{th} time period; $i = \text{MAH, REST}$; $t = 1, 2, \dots, 10$.

T = trend variable taking values 1 to 10

$$\begin{aligned} \text{DUMMY} &= 1 \text{ if } i = \text{REST} \\ &= 0 \text{ otherwise} \end{aligned}$$

The construction of the Dummy variable is such that, when it takes the value of zero, the equation refers to MAH only, which will then convert eq. (14) to the following form:

$$Y_{(\text{MAH})t} = \alpha + \beta T + \gamma T^2 \quad (15)$$

Estimation of eq. (14) will enable us to obtain the differential trend growth for REST. For instance, when DUMMY = 1, the sum of the coefficients ($\beta + \epsilon_i$) will yield the linear trend growth and the sum of coefficients ($\gamma + \phi_i$) will yield the quadratic trend growth for REST. The sign of the coefficients ' ϵ_i ' and ' ϕ_i ' and their significance will indicate whether the trend growth for REST is greater or lower than the linear and quadratic trend growths for Maharashtra (i.e., β and γ respectively). The presence of DUMMY as a variable by itself merely indicates if the intercept for REST is different from that of MAH. The sign of ' δ_i ' will indicate whether the intercept for REST is higher or lower than that for MAH.

Going one step ahead, equation (14) can be modified to study the differential growth trends for all states individually rather than as a consolidated average (REST) as follows:

$$Y_{it} = \alpha + \beta T + \gamma T^2 + \sum_i \delta_i \text{DUMMY} + \sum_i \epsilon_i (T * \text{DUMMY}) + \sum_i \phi_i (T^2 * \text{DUMMY}) \quad (16)$$

where,

Y_{it} = Fiscal measure / ratio of interest for the i^{th} cross-section unit in the t^{th} time period; $i = \text{AP, BI, GUJ, HAR, KAR, KER, MP, MAH, ORI, PUN, RAJ, TND, UP, WB}$; $t = 1, 2, \dots, 10$

T = trend variable taking values 1 to 10

DUMMY = 1 for the i^{th} state; $i \neq \text{MAH}$

= 0 otherwise

Once again, when DUMMY = 0 for all i , eq. (16) will convert to eq. (15) and refer to MAH only. Estimation of eq. (16) will enable us to obtain the trend growth for AP, BI, GUJ, HAR, KAR, KER, MP, ORI, PUN, RAJ, TND, UP, WB. For instance, when DUMMY = 1, the sum of the coefficients, $(\beta + \varepsilon_i, i \neq \text{MAH})$ will yield the linear trend growth and the sum of coefficients $(\gamma + \phi_i, i \neq \text{MAH})$ will yield the quadratic trend growth for the i^{th} state. The sign of the coefficients ' ε_i ' and ' ϕ_i ' and their significance will indicate whether the trend growth for that particular state is greater or lower than the linear and quadratic trend growths for Maharashtra (i.e., β and γ respectively). The presence of DUMMY as a variable by itself merely indicates if the intercept for REST is different from that of MAH. The sign of ' δ_i ' will indicate whether the intercept for the i^{th} state ($i \neq \text{MAH}$) is higher or lower than that for MAH.

Equations (14) and (16) were estimated for RD, CD, GFG, BRG1, BRG2, BRG3, FDR1, FDR2, FDR3 and FSR using pooled cross-section time series data. The results of this estimation for various fiscal measures/ratios and the broad conclusions emanating from these results have been reported in Section 3.

The following points may be noted for the tables given below:

- ◆ The coefficients δ_i , ε_i and ϕ_i denote the differentials in intercept, linear and quadratic trend growths, respectively, for states other than Maharashtra. In order to arrive at the intercepts, linear and quadratic trend growths for these states, these have to be added to α , β and γ respectively.
- ◆ The figures in parenthesis denote the 't-statistic' of the coefficients.
- ◆ Levels of significance are indicated by * (10%), ** (5%) and *** (1%).
- ◆ The F-test given in Tables 1(b), 2(b), 3(b), 4(b), 5(b), 6(b), 7(b) and 12(b) tests the hypothesis (Greene, 1997) that the coefficients of individual states as a group are significantly different from the corresponding coefficients for Maharashtra. This test is in addition to the usual T-statistics that we report below each coefficient which test the coefficient's individual significance.

3. Results of Estimation

3.1 Revenue Deficits

We present below the results of estimating eq. (14) and (16) for Revenue Deficits.

Table 1 (a) : Results of Estimating Equation (14) for RD

STATE	α	β	γ
MAH	0.23992E+06 (2.528)	- 0.15703E+06*** (- 3.962)	21160*** (6.026)
STATE	δ_i	ϵ_i	ϕ_i
REST	- 0.11826E+06 (- 0.8812)	97053* (1.732)	- 12451** (- 2.507)
Adj. R ² = 0.8721			D.W. = 2.0907
			N = 20

Table 1 (b) : Results of Estimating Equation (16) for RD

STATE	α	β	γ
MAH	0.23992E+06 (2.367)	- 0.15703E+06*** (- 3.710)	21160*** (5.642)
STATE	δ_i	ϵ_i	ϕ_i
AP	-0.24792E+06 (- 1.730)	0.15883E+06** (2.653)	- 18354*** (- 3.461)
BI	- 82857 (- 0.5780)	0.10042E+06* (1.677)	- 14520*** (- 2.738)
GUJ	- 80325 (- 0.5604)	77474 (1.294)	- 11688** (- 2.204)
HAR	- 0.2380E+06 (- 1.661)	0.15136E+06** (2.528)	- 19105*** (- 3.602)
KAR	- 0.19182E+06 (- 1.338)	0.12957E+06** (2.164)	- 17399*** (- 3.280)
KER	- 0.14984E+06 (- 1.045)	0.11781E+06* (1.968)	- 15670*** (- 2.954)
MP	- 0.19888E+06 (- 1.387)	0.12737E+06** (2.128)	- 15787*** (- 2.977)
ORI	- 0.21985E+06 (- 1.534)	0.14507E+06** (2.423)	- 17880*** (- 3.371)
PUN	- 0.14021E+06 (- 0.9782)	0.12169E+06 (2.033)	- 15535*** (- 2.929)
RAJ	81247 (0.5668)	- 61993 (- 1.036)	6624.1 (1.249)
TND	- 12580 (- 0.8776E-01)	76633 (1.280)	- 11682** (- 2.203)
UP	- 64919 (- 0.4529)	84890 (1.418)	- 6859.6 (- 1.293)
WB	8569.5 (0.5978E-01)	32554 (0.5438)	- 4002.6 (- 0.7547)

F-Test (13,98)	1.19	2.50***	4.99**
Adj. R ² = 0.7979	D.W. = 2.2190		N = 140

The following significant features emerge from the results of Tables 1 (a) & (b):

- ❖ Linear Trend Coefficient: It can be seen that the *linear* trend of RD for REST is higher than that for MAH (ϵ_i in Table 1 (a) is positive and significant at 10% level). Considering the other states individually, most of them have a *linear* trend greater than MAH (the *differential coefficients*, i.e., ϵ_i 's in Table 1 (b) are positive and significant at 5% for most cases). An interesting point worth noting is that a state like Bihar (where ϵ_i is positive and significant only at 10%) fares better *vis-à-vis* MAH than some of the other major states like AP and KAR.
- ❖ Quadratic Trend Coefficient: It is seen that the *differential quadratic* trend coefficient (ϕ_i 's) for REST as well as for most individual states are significantly negative (at 1% level). This indicates that the *rate of deterioration* in the RD in all these states is significantly lower than that in MAH. This implies better long run fiscal management in these states. The F-stat shows that the *linear* and *quadratic* trend, for all other states as a group, are statistically different from MAH.
- ❖ Rate of Change in RD: We compute the rate at which RD is growing for Maharashtra and the other states by taking the derivative of equation (16) with respect to T. For MAH and for other states (excluding MAH) we get the following:

$$\text{MAH: } \frac{dRD_{(\text{MAH})}}{dT} = \beta + 2\gamma T$$

$$\text{OTHER STATES: } \frac{dRD_i}{dT} = \beta + 2\gamma T + \epsilon_i + 2\phi_i T, \quad i \neq \text{MAH}$$

The above derivatives are evaluated at the end of the time period i.e. for T = 10. Table 1(c) reports results. Clearly the rate of increase in the RD of MAH is the highest among the states listed in the table.

Table 1 (c): Rate of Change of RD
(Rs. Lakhs)

STATE	dRD/dT, T=10
MAH	266170
REST	114203

AP	57920
GUJ	109884
KAR	47760
TND	109163

3.2 Capital Deficits

Deficits on the revenue account are usually financed by running surpluses on the capital account. We examine fiscal balances on the capital account in this sub-section. Tables 2(a) and (b) provide the results of estimating eq. (14) and (16) for capital deficits.

Table 2 (a) : Results of Estimating Equation (14) for CD

STATE	α	β	γ
MAH	- 0.18943E+06 (- 3.860)	0.10647E+06*** (5.195)	- 14963*** (- 8.241)
STATE	δ_i	ϵ_i	ϕ_i
REST	71800 (1.035)	- 50928 (- 1.757)	7377.3** (2.873)
Adj. R ² = 0.9393		D.W. = 2.5811	N = 20

Table 2 (b) : Results of Estimating Equation (16) for CD

STATE	α	β	γ
MAH	- 0.18943E+06 (- 1.003)	0.10647E+06 (1.349)	- 14963** (- 2.141)
STATE	δ_i	ϵ_i	ϕ_i
AP	0.19380E+06 (0.7254)	- 0.11054E+06 (- 0.9907)	12725 (1.287)
BI	- 86467 (- 0.3236)	31611 (0.2833)	594.43 (0.6013E-01)
GUJ	67558 (0.2529)	- 59232 (- 0.5309)	9973.9 (1.009)
HAR	0.25762E+06 (0.9643)	- 0.14899E+06 (- 1.335)	17322* (1.752)
KAR	0.14218E+06 (0.5322)	- 81889 (- 0.7339)	11469 (1.160)
KER	0.11273E+06 (0.4220)	- 79063 (- 0.7086)	10853 (1.098)
MP	0.18332E+06 (0.6862)	- 96364 (- 0.8636)	11601 (1.174)
ORI	0.17007E+06 (0.6366)	- 98341 (- 0.8814)	12362 (1.251)
PUN	68041 (0.2547)	- 91645 (- 0.8214)	12569 (1.272)
RAJ	0.12529E+06	- 56965	7374.2

	(0.4690)	(- 0.5105)	(0.7460)
TND	3541.1 (0.1325E-01)	- 56362 (- 0.5051)	8783.7 (0.8886)
UP	36071 (0.1350)	- 59847 (- 0.5364)	3825.4 (0.3870)
WB	- 0.34036E+06 (- 1.274)	0.24556E+06** (2.201)	- 23547** (- 2.382)
F-Test (13,98)	0.64	1.51	2.16*
Adj. R ² = 0.3978		D.W. = 2.5392	N = 140

While examining the behaviour of deficits/surpluses on the capital account it should be borne in mind that capital surpluses are associated with a negative sign while deficits are associated with a positive sign. The following significant features emerge from the results of Tables 2 (a) & (b):

- ❖ Linear Trend Coefficient: It can be seen that the *linear* trend coefficient of CD for MAH (β) is significant and positive. However, a look at the ϵ_i 's in Table 2 (a) & (b), indicates that the *differential linear* trend coefficients of CD for REST as well as individual states (with the exception of WB) are generally negative but not significant. Hence we can conclude that the behaviour of other states (excluding WB) is not significantly different from that of MAH. The results clearly show that all states including MAH are using surpluses on the capital account to finance their RD.
- ❖ Quadratic Trend: It is seen that the *differential quadratic* trend coefficient of CD for REST is significantly positive, (ϕ_i in Table 2(a) is positive and significant at 5% level). This is a natural corollary to the inference drawn from Table 1 regarding the *rate of deterioration* in the RD for MAH being higher than that for REST. Since the *rate of deterioration* of RD was lower for REST as compared to MAH, the *rate of generation of surpluses* on capital account is lower for REST. However, looking at these states individually, one can notice that with the exception of HAR (the *differential* coefficient is significant and positive) and WB (the *differential* coefficient is significant and negative), none of them have a significant *differential quadratic trend* coefficient (ϕ_i 's in Table 2(b) are insignificant). This implies that the *quadratic trend* of CD for all these states is not significantly different from MAH and that their *rate of generation of surpluses* on the capital account is no different from MAH. The F-stat provides weak evidence that the coefficient of *quadratic trend* as a group are different from MAH.

- ❖ Rate of Change in CD: Just as we had computed rates of change in RD, we do so for CD as well. Table 2(c) reports results. MAH is seen to be generating surpluses on the capital account of the budget much faster than other states. This is inevitable given the rapid rate at which MAH has been running up Revenue Deficits.

Table 2 (c): Rate of Change of CD
(Rs. Lakhs)

STATE	dCD/dT, T=10
MAH	-192790
REST	- 96172
AP	- 48830
GUJ	-52544
KAR	- 45299
TND	- 73478

Looking at both Tables 1 and 2, simultaneously, we can further deduce that while MAH is facing a higher long run *rate of deterioration* in RD and a higher generation of surpluses on the capital account, other states seem to be managing relatively better on both counts.

3.3 Gross Fiscal Gap

The movements in the Gross Fiscal Gaps (GFG) of various states were studied by estimating eq. (14) and (16) for GFG. These results are listed in Table 3 (a) & (b) below:

Table 3 (a) : Results of Estimating Equation (14) for GFG

STATE	α	β	γ
MAH	0.37141E+06 (2.760)	- 0.10620E+06* (- 1.889)	20586*** (4.134)
STATE	δ_i	ϵ_i	ϕ_i
REST	- 0.15889E+06 (- 0.8348)	65338 (0.8220)	- 11776 (- 1.672)
Adj. R ² = 0.8879			D.W. = 2.2304
			N = 20

Table 3 (b) : Results of Estimating Equation (16) for GFG

STATE	α	β	γ
MAH	0.37141E+06 (1.865)	- 0.10620E+06 (- 1.277)	20586*** (2.793)
STATE	δ_i	ϵ_i	ϕ_i
AP	- 0.30720E+06 (- 1.091)	0.14661E+06 (1.246)	- 18004* (- 1.727)
BI	- 7560.8 (- 0.2684E-01)	- 8822.9 (- 0.7500E-01)	-7374.2 (- 0.7075)
GUJ	- 28256 (- 0.1003)	- 4742.3 (- 0.4031E-01)	- 4659.8 (- 0.4471)
HAR	- 0.32815E+06 (- 1.165)	0.10219E+06 (0.8687)	- 17547* (- 1.684)
KAR	- 0.23243E+06 (- 0.8252)	99544 (0.8462)	- 17683* (- 1.697)
KER	- 0.23492 E+06 (- 0.8340)	77181 (0.6561)	- 15045 (- 1.444)
MP	- 0.22396E+06 (- 0.7951)	85227 (0.7245)	- 15009 (- 1.440)
ORI	- 0.23969E+06 (- 0.8510)	77959 (0.6627)	- 14814 (- 1.421)
PUN	- 0.15154E+06 (- 0.5380)	46597 (0.3961)	- 10903 (- 1.046)
RAJ	43308 (0.1538)	- 89975 (- 0.7648)	7238.3 (0.6945)
TND	- 96827 (-0.3438)	56852 (0.4833)	- 12394 (- 1.189)
UP	88404 (0.3139)	36467 (0.3100)	- 3379.4 (- 0.3242)
WB	- 0.34678E+06 (- 1.231)	0.22432E+06* (1.907)	- 23514** (- 2.256)
F-Test (13,98)	0.63	0.87	1.46
Adj. R ² = 0.7043		D.W. = 2.4466	N = 140

The following significant features emerge from the results of Tables 3 (a) & (b):

- ❖ Linear Trend Coefficient: It can be seen that the *linear* trend growth of GFG for MAH is negative and significant at 10% level. However, the coefficients for REST as well as individual states are not significantly different from that for MAH (ϵ_i 's in both Table 3(a) & (b) are not significant). The only exception is WB, whose coefficient is positive and significant at 10% level.
- ❖ Quadratic Trend: It is seen that when it comes to *quadratic* trend of GFG too, we have a significant and positive γ for MAH indicating a rapid *deterioration* in GFG. The coefficients for other states are not significantly different from MAH, except for

AP, HAR, KAR and WB which have fared better than MAH (ϕ 's are significantly negative at 10% level of significance for AP, HAR and KAR, and at 5% for WB). The results of the F-test shows that neither *linear* trend nor *quadratic* trend of GFG for other states as a group are significantly different from the corresponding coefficients for MAH (the *differential* coefficients for other states as a group not significant).

- ❖ Rate of Change in GFG: Table 3(c) computes rates of change in GFG, as we had done for RD and CD. Not unexpectedly MAH is seen to be running GFG at a higher rate than the other states.

Table 3 (c): Rate of Change of GFG
(Rs. Lakhs)

STATE	dGFG/dT, T=10
MAH	305520
REST	191864
AP	92050
GUJ	207582
KAR	51404
TND	114492

3.4 Basic Resource Gap 1

We now consider some of the additional measures of fiscal balance proposed by Pattanaik *et al* (1994). BRG1 yields the highest level of financing requirement for a state. An increase in BRG1 is indicative of the fact that the state is unable to generate own resources (own tax and non-tax revenues) to keep up with its expenditures.

Table 4 (a) : Results of Estimating Equation (14) for BRG1

STATE	α	β	γ
MAH	0.53676E+06 (3.838)	- 85701 (- 1.467)	21081*** (4.073)
STATE	δ_i	ϵ_i	ϕ_i
REST	- 0.20259E+06 (- 1.024)	77855 (0.9424)	- 13011* (- 1.778)
Adj. R ² = 0.9147		D.W. = 2.0846	N = 20

Table 4 (b) : Results of Estimating Equation (16) for BRG1

STATE	α	β	γ
MAH	0.53676E+06 (2.868)	- 85701 (- 1.096)	21081*** (3.044)
STATE	δ_i	ϵ_i	ϕ_i
AP	- 0.32504E+06 (- 1.228)	0.16416E+06 (1.485)	- 18155* (- 1.854)
BI	68314 (0.2581)	- 4737.5 (- 0.4285E-01)	- 6014.7 (- 0.6141)
GUJ	- 0.15934E+06 (- 0.6020)	977.39 (0.8841E-02)	- 5370.4 (- 0.5483)
HAR	- 0.46109E+06 (- 1.742)	84184 (0.7615)	- 17525* (- 1.789)
KAR	- 0.30286E+06 (- 1.144)	92207 (0.8341)	- 16987* (- 1.734)
KER	- 0.32048E+06 (- 1.211)	63761 (0.5768)	- 14579 (- 1.488)
MP	- 0.21080E+06 (- 0.7964)	85625 (0.7745)	- 14074 (- 1.437)
ORI	- 0.26302E+06 (- 0.9937)	58642 (0.5305)	- 13398 (- 1.368)
PUN	- 0.26079E+06 (- 0.9852)	22578 (0.2042)	- 10200 (- 1.041)
RAJ	- 0.26354E+06 (- 0.9956)	97262 (0.8798)	- 14643 (- 1.495)
TND	- 0.11653E+06 (- 0.4402)	58001 (0.5247)	- 12507 (- 1.277)
UP	0.32668E+06 (1.234)	71527 (0.6470)	- 3469.9 (- 0.3543)
WB	- 0.34522E+06 (- 1.304)	0.21793E+06* (1.971)	- 22225** (- 2.269)
F-Test (13, 98)	1.39	0.64	1.04
Adj. R ² = 0.8664		D.W. = 2.4284	N = 140

The following significant features emerge from the results of Tables 4 (a) & (b):

- ❖ **Linear Trend Coefficient:** It can be seen that the coefficient of *linear* trend of BRG1 is not significant for MAH. Likewise, the *differential linear* trend coefficients of BRG1 are not significantly different for any state, barring WB. The coefficient for WB is positive and significant at 10%, indicating (at least weakly) that its linear trend growth is higher than that of MAH.
- ❖ **Quadratic Trend:** The coefficient of *quadratic* trend of BRG1 (γ) for MAH is highly significant and positive indicating a rapidly *widening resource gap* for MAH. Most of the other states have *quadratic trend* not significantly different from MAH, except

for AP, HAR, KAR (ϕ_i 's are significantly negative at 10% level of significance) and WB (ϕ_i is significantly negative at 5% level of significance). These states seem to be faring better than MAH. The results of the F-test shows that neither *linear* trend nor *quadratic* trend of BRG1 for other states as a group are significantly different from the corresponding coefficients for MAH (the *differential* coefficients for other states as a group not significant).

3.5 Basic Resource Gap 2

BRG2 reflects a slightly lower financing requirement as compared to BRG1, but financing items are not entirely under the control of the state. Tables 5 (a) provide the results of estimating eq. (14) and (16) for BRG2.

Table 5 (a) : Results of Estimating Equation (14) for BRG2

STATE	α	β	γ
MAH	0.40563E+06 (3.447)	- 56482 (- 1.149)	14344*** (3.295)
STATE	δ_i	ϵ_i	ϕ_i
REST	- 0.13264E+06 (- 0.7971)	61055 (0.8785)	- 8938.8 (- 1.452)
Adj. R ² = 0.8772		D.W. = 2.2180	N = 20

Table 5 (b) : Results of Estimating Equation (16) for BRG2

STATE	α	β	γ
MAH	0.40563E+06 (2.075)	- 56482 (- 0.6917)	14344*** (1.983)
STATE	δ_i	ϵ_i	ϕ_i
AP	- 0.20278E+06 (- 0.7334)	0.12875E+06 (1.115)	- 12269 (- 1.199)
BI	- 88196 (- 0.3190)	0.12149E+06 (1.052)	- 13931 (- 1.362)
GUJ	- 0.18314E+06 (- 0.6623)	18467 (0.1599)	- 4132 (- 0.4038)
HAR	- 0.29210E+06 (- 1.056)	22021 (0.1907)	- 8895.5 (- 0.8694)
KAR	- 0.22186E+06 (- 0.8023)	74903 (0.6486)	- 12587 (- 1.230)
KER	- 0.23779E+06 (- 0.8599)	47075 (0.4076)	- 10529 (- 1.029)
MP	- 0.13015E+06 (- 0.4707)	62229 (0.5389)	- 8776.2 (- 0.8578)

ORI	- 0.15941E+06 (- 0.5765)	32399 (0.2805)	- 8018.5 (- 0.7837)
PUN	- 0.19248E+06 (- 0.6961)	- 8507.1 (- 0.7366E-01)	- 4040.2 (- 3949)
RAJ	- 0.15679E+06 (- 0.5670)	65606 (0.5681)	- 9397 (- 0.9184)
TND	- 81033 (- 0.2931)	63557 (0.5504)	- 10659 (- 1.042)
UP	0.39578E+06 (1.431)	10572 (0.9155E-01)	3306.3 (0.3232)
WB	- 0.37032E+06 (- 1.339)	0.26742E+06** (2.316)	- 25188** (- 2.462)
F-Test (13, 98)	0.94	0.76	0.96
Adj. R ² = 0.8045 D.W. = 2.5272 N = 140			

The following significant features emerge from the results of Tables 5 (a) & (b):

- ❖ Linear Trend Coefficient: It can be seen that the coefficient of *linear* trend of BRG2 for MAH is not significant. Furthermore, *linear trend* of BRG2 for REST and all the states except WB are not significantly different from that for MAH (ϵ_i 's in both Table 5(a) & (b) are not significant). The *differential* coefficient for WB is positive and significant.
- ❖ Quadratic Trend: The *quadratic* trend of BRG2 for MAH, is significant and positive indicating a *widening resource gap*. None of the other states barring WB have significant *differential quadratic* trend coefficient. The results of the F-test shows that neither *linear* trend nor *quadratic* trend of BRG2 for other states as a group are significantly different from the corresponding coefficients for MAH (the *differential* coefficients for other states as a group not significant).

The pattern observed for BRG2 goes to show that as far as the level of dependency on exogenous financing factors go, all the states seem to be sailing in the same boat.

3.6 Basic Resource Gap 3

This measure of fiscal balance gives the lowest level of financing requirements for a state. However, the state has absolutely no control over any of the financing items. Tables 6 (a) and (b) gives the results for BRG3.

Table 6 (a) : Results of Estimating Equation (14) for BRG3

STATE	α	β	γ
MAH	0.30434E+06 (2.504)	- 66547 (- 1.311)	13576*** (3.018)
STATE	δ_i	ϵ_i	f_i
REST	- 0.10103E+06 (- 0.5877)	49492 (0.6893)	- 8157.4 (- 1.282)
Adj. R ² = 0.8119 D.W. = 2.3208 N = 20			

Table 6 (b) : Results of Estimating Equation (16) for BRG3

STATE	α	β	γ
MAH	0.30434E+06 (1.541)	- 66547 (- 0.8069)	13576* (1.858)
STATE	δ_i	ϵ_i	ϕ_i
AP	- 0.16197E+06 (- 0.5800)	93766 (0.8040)	- 10037 (- 0.9713)
BI	- 0.13294E+06 (- 0.4760)	94371 (0.8091)	- 12944 (- 1.253)
GUJ	- 84121 (- 0.3012)	4172.2 (0.3577E-01)	- 2683.7 (- 0.2597)
HAR	- 0.20514E+06 (- 0.7346)	28359 (0.2431)	- 8179.3 (- 0.7916)
KAR	- 0.15731E+06 (- 0.5633)	64022 (0.5489)	- 11456 (- 1.109)
KER	- 0.18955E+06 (- 0.6788)	55915 (0.4794)	- 10884 (- 1.053)
MP	- 0.11228E+06 (- 0.4021)	50326 (0.4315)	- 8451.1 (- 0.8179)
ORI	- 0.11114E+06 (- 0.3980)	22305 (0.1912)	- 6515.4 (- 0.6305)
PUN	- 0.12039E+06 (- 0.4311)	- 319.01 (- 0.2735E-02)	- 3646.9 (- 0.3529)
RAJ	- 0.13394E+06 (- 0.4796)	65324 (0.5601)	- 9111 (- 0.8817)
TND	- 63610 (- 0.2278)	56201 (0.4819)	- 10167 (- 0.9839)
UP	0.33447E+06 (1.198)	- 44349 (- 0.3803)	4781.7 (0.4628)
WB	- 0.37151E+06 (- 1.330)	0.26558E+06** (2.277)	- 25664** (- 2.484)
F-Test (13,98)	0.66	0.78	0.99
Adj. R ² = 0.6126 D.W. = 2.4910 N = 140			

The following significant features emerge from the results of Tables 6 (a) & (b):

- ❖ Linear Trend Coefficient: It can be seen that the *linear* trend coefficient of BRG3, for MAH is not significant. Furthermore, none of the *differential* coefficients for REST as well as for individual states, excluding WB are significant (ϵ_i 's in both Table 6(a) & (b) are not significant).
- ❖ Quadratic Trend: The *quadratic trend* coefficient is significant and positive for MAH, even though the level of significance drops in Table 6(b). However, the *differential* coefficients of *quadratic trend* for REST as well as for the individual states barring WB, are not significant. The results of the F-test shows that neither *linear* trend nor *quadratic* trend of BRG3 for other states as a group are significantly different from the corresponding coefficients for MAH (the *differential* coefficients for other states as a group not significant).

3.7 Fiscal Dependency and Stress Ratios

In the previous section we had listed out several ratios that indicated the dependency of the state on finances beyond its control for bridging its resource gaps. These ratios were labeled as FDR1, FDR2, FDR3 and FSR. The trend equations for all ratios except for FDR1 showed uniformly poor results. This perhaps indicates that the dependency and stress ratios are not worsening even though the deficit measures discussed are worsening. This should not be taken to mean that the ratios are in a comfortable zone: they will be uncomfortably high but at least there is no worsening observed over the last ten years. We do not report the results of estimating trend equations for FDR2, FDR3 and FSR.

As far as FDR1 is concerned, it is seen to be worsening for MAH in Table 7(a). It will be seen that when MAH is considered along with an average of states (REST), the quadratic trend coefficient for MAH is significant at 5 % level. Further, the coefficient for REST is not statistically different than that for MAH. However, Table 7 (b) shows neither coefficients to be significant for MAH. The F-stat shows that the *linear* and *quadratic* trend, for all other states as a group, are statistically different from MAH.

Table 7 (a) : Results of Estimating Equation (14) for FDR1

STATE	α	β	γ
MAH	0.39660 (13.06)	- 0.20781E-01 (- 1.639)	0.27784E-02** (2.473)
STATE	δ_i	ϵ_i	ϕ_i
REST	0.18055 (4.204)	- 0.25508E-02 (- 0.1422)	- 0.48750E-03 (- 0.3068)
Adj. R ² = 0.9051		D.W. = 1.9309	N = 20

Table 7 (b) : Results of Estimating Equation (16) for FDR1

STATE	α	β	γ
MAH	0.39660 (8.617)	- 0.20781E-01 (- 1.081)	0.27784E-02 (1.631)
STATE	δ_i	ϵ_i	ϕ_i
AP	0.25823E-01 (0.3967)	0.60622E-01** (2.230)	-0.57129E-02** (- 2.372)
BI	0.33453 (5.139)	0.26427E-02 (0.9721E-01)	- 0.11080E-02 (- 0.4600)
GUJ	0.14036 (2.156)	- 0.44354E-01 (-1.632)	0.34443E-02 (1.430)
HAR	0.13283E-01 (0.2041)	- 0.35999E-01 (- 1.324)	0.35432E-02 (1.471)
KAR	0.67292E-01 (1.034)	0.37745E-02 (0.1388)	- 0.14580E-02 (- 0.6053)
KER	0.19985 (3.070)	- 0.26491E-01 (- 0.9745)	0.12136E-02 (0.5039)
MP	0.16738 (2.571)	0.23085E-02 0.8492E-01	- 0.91212E-03 (- 0.3787)
ORI	0.35950 (5.523)	- 0.31602E-02 (- 0.1162)	- 0.31288E-03 (- 0.1299)
PUN	0.18683 (2.870)	- 0.47303 E-01 (- 1.740)	0.37008E-02 (1.537)
RAJ	0.20254 (3.112)	0.70229E-02 (0.2583)	- 0.10917E-02 (- 0.4533)
TND	0.14185 (2.179)	- 0.14041E-01 (- 0.5165)	- 0.17538E-03 (- 0.7282E-01)
UP	0.28660 (4.403)	0.85123E-02 (0.3131)	- 0.14174E-02 (- 0.5885)
WB	0.17408 (2.674)	0.34888E-01 (1.283)	- 0.28799E-02 (- 1.196)
F-Test (13,98)	5.36	2.36***	2.37***
Adj. R ² = 0.9038		D.W. = 2.4085	

4. Reasons for Deteriorating Fiscal Imbalances in Maharashtra

Numerous explanations have been offered for the precarious state of Maharashtra's fiscal balances. The following factors have been identified as important (GoM, 1999):

4.1 Tax/SDP Ratio

On the revenue side MAH compares unfavourably with some other states with rest respect to the Tax/SDP ratio. Table 8 computes these ratios for MAH and four other states.

Table 8 : Tax/SDP Ratios

(%)					
State	Year	OTAR/SDP	Decline p.a.	(SCT+OTAR)/SDP	Decline p.a.
MAH	1990-91	8.35		9.96	
	1998-99	6.64	-20.45	8.01	-19.63
AP	1990-91	7.85		11.25	
	1998-99	7.74	-1.43	10.66	-5.25
GUJ	1990-91	8.96		10.00	
	1998-99	8.57	-4.26	10.42	4.21
KAR	1990-91	9.96		12.78	
	1998-99	8.54	-14.25	10.91	-14.66
TND	1990-91	10.02		13.23	
	1998-99	9.14	-8.71	11.43	-13.60

It is true that in 1998-99 MAH has the lowest Tax/SDP ratio both in terms of OTAR (Own tax revenues) and in terms of (OTAR+SCT) i.e. Share in Central Taxes and Own Taxes. But even more disconcerting is the fact that the decline over the decade has been the steepest for MAH: the ratio has fallen by more than 20% in terms of OTAR and by more than 19% in terms of (OTAR + SCT). GUJ is the only state that experiences an increase in Tax/SDP ratio considering (OTAR +SCT)

4.2 Rapid Increases in Internal Debt

An indication of the rapid increase in the internal debt of MAH can be gauged by looking at the rate of growth of capital receipts over the last decade. Table 9 computes the rates of growth for MAH along with 4 other states. The rate of growth for MAH is the highest followed by AP and TN. The rate for KAR, the best performing state on this score, has rate of growth that is barely one-third that of MAH.

Table 9 : Growth Rate in Capital Receipts

(Rs. Lakhs)

	MAH	AP	GUJ	KAR	TND
1990-91	234919	125088	213661	135187	145203
1999-2000	1276780	669534	618703	341699	548164
Growth rate p.a. (%)	49.28	48.36	21.06	16.97	30.84

The rapid increase in internal debt as indicated by Table 9 has led to a rapidly escalating interest payments burden. Table 10 gives the change in this burden over the last decade.

Table 10 : Growth Rate of Interest Payments

State	Year	Interest Payments (Rs. Lakhs)	Growth Rate p.a. (%)	Interest Payments on Loans from Centre (Rs. Lakhs)	Growth Rate p.a. (%)
MAH	1990-91	88076	35.23	60631 (68.84)	33.71
	1998-99	367313		244572 (66.58)	
AP	1990-91	58948	38.72	32100 (54.45)	40.03
	1998-99	264381		147739 (55.88)	
GUJ	1990-91	53146	36.18	39595 (74.50)	34.46
	1998-99	226192		162402 (71.79)	
KAR	1990-91	43560	30.12	24959 (57.30)	32.44
	1998-99	161661		97836 (60.52)	
TND	1990-91	45554	40.64	24629 (54.07)	42.54
	1998-99	212185		118921 (56.05)	

Note: Figures in parenthesis denote Interest Payments on Loans from Centre as a percentage of Total Interest Payments.

The major problem with excessive borrowings, apart from the interest payments burden that they entail, is the inappropriate use of such funds. As has been shown in the early part of this paper, RD have been growing at a very rapid rate in MAH and these deficits have been financed by running up surpluses on the capital account of the budget. The capture of borrowed funds by revenue deficits is indicated by the ratio of RD to GFG. Table 11 below shows the change in this ratio over the last decade for MAH along with 4 other states.

Table 11 : RD/GFG ratio

(%)

	AP	GUJ	KAR	MAH	TND
1990-91	12.77	33.61	7.26	2.64	36.09
1991-92	11.49	25.63	12.13	12.12	67.42
1992-93	6.46	14.45	10.13	22.80	55.86

1993-94	-10.14	-6.98	-6.60	4.07	34.67
1994-95	19.82	-15.50	15.66	-5.62	18.78
1995-96	16.69	9.80	-3.34	12.64	16.11
1996-97	63.08	20.34	24.55	27.66	32.07
1997-98	18.01	27.14	13.93	35.06	36.41
1998-99	34.87	30.37	33.25	45.76	61.16
1999-2000	39.52	40.71	43.03	59.28	63.61

4.3 Expenditure on Administrative Services

The other major explanation offered for the deterioration in the fiscal balances on MAH is the rapid increase in administrative expenditure (ADM). In this section we seek to examine if that indeed is the case and whether the growth in MAH has been more rapid than in the other states. We estimate equations (14) and (16) with ADM as the dependent variable. Tables 12(a) and 12(b) report results.

Table 12 (a) : Results of Estimating Equation (14) for ADM

STATE	α	β	γ
MAH	90940 (6.926)	363.83 (0.6635E-01)	2044.6*** (4.208)
STATE	δ_i	ϵ_i	ϕ_i
REST	- 52222 (- 2.812)	2016.8 (0.2601)	- 1460.6** (- 2.126)
Adj. R ² = 0.9766			D.W. = 2.8333
			N = 20

Table 12 (b) : Results of Estimating Equation (16) for ADM

STATE	α	β	γ
MAH	90940 (7.495)	363.83 (0.07180)	2044.6*** (4.554)
STATE	δ_i	ϵ_i	ϕ_i
AP	- 46348 (- 2.701)	1471.8 (0.2054)	- 1210.6 (- 1.907)
BI	- 20123 (- 1.173)	- 6653.7 (- 0.9284)	- 457.09 (- 0.7199)
GUJ	- 53478 (- 3.116)	- 731.84 (- 0.1021)	- 1317.1** (- 2.074)
HAR	- 75850 (- 4.420)	416.07 (0.05806)	-1721.5*** (- 2.711)
KAR	- 62299 (- 3.631)	1498.4 (0.2091)	- 1433.8** (- 2.258)
KER	- 69746 (- 4.064)	- 1464.4 (- 0.2043)	- 1478.3** (- 2.328)

MP	- 44435 (- 2.589)	- 2228.3 (- 0.3109)	- 870.63 (- 1.371)
ORI	- 74483 (- 4.341)	730.56 (0.1019)	- 1707.8*** (- 2.690)
PUN	- 53825 (- 3.137)	3678.5 (0.5133)	- 1647.3** (- 2.594)
RAJ	- 61733 (- 3.598)	1083.5 (0.1512)	- 1525** (- 2.402)
TND	- 43530 (- 2.537)	- 290.55 (- 0.04054)	- 833.37 (- 1.313)
UP	- 38487 (- 2.243)	32319 (4.510)	- 4.45.4*** (- 6.371)
WB	- 34548 (- 2.013)	- 5317.5 (- 0.5037)	- 737.49 (- 1.165)
F-Test (13,98)	4.33	3.22***	4.66***
Adj. R ² = 0.9604		D.W. = 2.2870	N = 140

While the coefficient of *linear* trend is not seen to be significant for MAH, the F-test indicates that it makes sense to separate MAH from other states [Table 12(b)]. However, strong evidence of the impact of ADM on the fiscal situation of MAH is seen in the coefficient of *quadratic* trend. This is seen to be significant at 1% level. All other states exhibit a negative and generally significant *differential* coefficient of *quadratic* trend. The fact that the *differential* coefficients are negative for all states clearly suggests that ADM has been growing in MAH much faster than in other states. The F-test clearly shows that the *differential* coefficient of *quadratic* trend for all other states as a group is different MAH.

5. Impact of Fiscal Imbalances on Growth in Maharashtra

In this section we try to examine whether it is possible to establish any links between various measures of fiscal balance and the rate of growth in Maharashtra. Each of the fiscal balance measure was employed in this exercise as a ratio to Maharashtra's SDP at current prices. This was then sought to be linked to the rate of growth of Maharashtra's real SDP. Before we ran the regressions we tested each of the variables for presence of unit roots. Our data spanned the period 1980-81 to 1996-97. The results are given in Table 13.

Table 13 : Unit Root Testing using Phillips-Perron Test

Variable	Series in Level	Series in First Differences
----------	-----------------	-----------------------------

Unit root testing on residuals | \rightarrow stationary

Where,

GRTH = Growth rate of real GDP

DRDR = First differenced ratio of revenue deficits to GDP

DGFGR = First differenced ratio of gross fiscal gap to GDP

The figures in parenthesis are t-statistics

The crucial result of equations (17) and (18) is given by the “sum of lag coefficients”. In the case of both, RD and GFG, these are significantly negative, pointing to the adverse effect of revenue deficit and gross fiscal gap on real growth in Maharashtra.

5. Conclusions

Over the last few years, it has been increasingly felt that the conception of Maharashtra being ‘the leading state’ in the economy could well be a ‘myth’, since other states like Karnataka, Gujarat and Andhra Pradesh are rapidly catching up with Maharashtra. The objective of this study was to examine and compare the progress of major Indian states *vis-à-vis* Maharashtra, against the backdrop of economic reforms. Specifically, we were concerned with the achievements of *first generation reforms* (FGR) as these apply to government finances. Our analysis covering the last ten years, that is, since the beginning of economic reforms, suggests very poor performance of all major states in India. More to the point, the performance of has been quite dismal.

Maharashtra is seen to be running up revenue deficits and generating surpluses on the capital account of the budget much faster than other states. The study further reveals that compared to other states Maharashtra is facing a higher rate of deterioration in RD and a higher rate of generation of surpluses on the capital account. This excessive borrowing in order to finance RD not only entails an increase in the burden of interest payments which will lead to a further deterioration in the state of finances, but also implicates inappropriate use of borrowed funds (as is seen through the very high ratio of RD/GFG for Maharashtra).

Over the years, Maharashtra seems to be sinking deeper into the ‘bog’ of fiscal mismanagement, with ever widening resource gaps. It is seen that the state’s performance has been extremely poor in terms of revenue generation as indicated by the declining Tax/SDP ratio. Even more disconcerting is the fact that although other states have experienced a decline in the (Tax/SDP) ratio, the decline over the decade has been steepest for Maharashtra. Such a deterioration in revenue generation coupled with rapidly growing expenditure on administrative services (ADM), has led to alarming fiscal imbalances.

Although, we have not undertaken a comparative study of the impact of deteriorating fiscal balances on real growth of different states, our analysis for Maharashtra points towards the adverse effects of revenue deficits and gross fiscal gap on the real rate of growth.

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APPENDIX I : LIST OF ABBREVIATIONS

Abbreviation	Description
AD	Accounts Data
BE	Budget Estimates
BRG	Basic Resource Gap
BRG(i)R	BRG(i) /SDPC; i = 1, 2, 3
CD	Capital Deficit
CDR	CD/SDPC
CE	Capital Expenditures
CR	Capital Receipts
FDR(i)	Fiscal Dependency Ratio, i = 1, 2, 3
FGR	First Generation Reforms
FSR	Fiscal Stress Ratio
GFC	Grants from the Centre
GFG	Gross Fiscal Gap
GFGR	GFG/SDPC
ID	Internal Debt
LAC	Loans and Advances from the Centre
ML	Market Loans
NSGFC	Non-statutory Grants from the Centre.
OCR	Other Capital Receipts
ONTR	Own non-tax revenues
OTAR	Own tax revenues
PFS	Provident Funds
RD	Revenue Deficit
RDR	RD/SDPC
RE	Revenue Expenditures
RFD	Reserve Funds and Deposits
RR	Revenue Receipts
SCT	State's share in Central Taxes
SDPC	SDP of Maharashtra at current prices
SDPR	SDP of Maharashtra at 1980-81 prices
SGFC	Statutory Grants from the Centre
TE	Total Expenditures
SGR	Second Generation Reforms
WMA	Ways and Means Advances

APPENDIX II :
LIST OF STATES INCLUDED IN THE ANALYSIS

Andhra Pradesh	(AP)	Maharashtra	(MAH)
Bihar	(BI)	Orissa	(ORI)
Gujarat	(GUJ)	Punjab	(PUN)
Haryana	(HAR)	Rajasthan	(RAJ)
Karnataka	(KAR)	Tamil Nadu	(TND)
Kerala	(KER)	Uttar Pradesh	(UP)
Madhya Pradesh	(MP)	West Bengal	(WB)

APPENDIX III :DATA APPENDIX

- (Note : 1. While incorporating data on Bihar in calculations for REST, Revised Estimates have been for those years for which Accounts data were not available
2. Source of Data – Reserve Bank of India Bulletin : Finances of the State Government)

(A) : CONVENTIONAL FISCAL BALANCE MEASURES

Revenue Deficits : RD

(Rs. Lakhs)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	5465	41107.69	15760	70265	7891	55341
1991-92	27613	47260.23	16957	57565	17865	190386
1992-93	72849	39320.46	12381	29982	17003	152620
1993-94	12190	39619.69	-23228	-9622	-11640	69185
1994-95	-27729	57596.62	72774	-26217	29613	41555
1995-96	60911	69737.08	73878	22204	-6227	31132
1996-97	159056	129740.77	319905	59140	57890	110361
1997-98	257994	121733.69	70319	101775	27682	136390
1998-99	392594	303336.15	268406	286342	121517	343657
1999-2000	948396	421656.15	272460	275923	157320	370073

Notes:

1. MAH = Maharashtra, REST = Average over remaining 13 states, AP = Andhra Pradesh, GUJ = Gujarat, KAR = Karnataka, TND = Tamil Nadu.
2. A minus sign indicates a surplus.
3. Calculations for 1999-2000 are based on Revised Estimates of the relevant data; all others are based on Accounts data.

Capital Account Deficits : CD

(Rs. Lakhs)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	-33060	-40935.08	-17462	-74869	-34422	-47209

1991-92	-125728	-49826.23	-28894	-58862	-17165	-190782
1992-93	-1427	-61091.77	-14371	-11650	20329	-163635
1993-94	-6285	-38228.15	-2975	-13216	-1532	-82213
1994-95	-32895	34989.69	-43582	3864	-47223	-90489
1995-96	-80394	-92283.77	-76977	-50018	20286	-70979
1996-97	-143723	-76113.92	-258469	-44546	-62468	-109100
1997-98	-282376	-141277.85	-166181	-110638	-86670	-150229
1998-99	-468049	-257717.08	-180005	35402	-123639	-240842
1999-2000	-625210	-319408.62	-252537	-216856	-133409	-336410

Notes: See Notes on Table dealing with RD.

Gross Fiscal Gap : GFG

(Rs. Lakhs)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	207324	152939.92	123386	209057	108656	153335
1991-92	227897	170174.31	147586	224584	147277	282402
1992-93	319535	175276.85	191711	207551	167830	273207
1993-94	299633	185395.08	229075	137787	176446	199549
1994-95	493685	353138.31	367263	169134	189093	221295
1995-96	481718	250564.23	442580	226653	186264	193218
1996-97	574971	315430.85	507145	290786	235834	344098
1997-98	735857	351472.15	390390	374963	198710	374641
1998-99	858010	594746.38	769795	942900	365514	561884
1999-2000	1599966	720407.92	689457	677770	365610	581827

Notes: See Notes on Table dealing with RD.

(B) : FISCAL BALANCE MEASURES
[Pattanaik *et al*, 1994*]

Basic Resource Gap 1 : BRG1

(Rs. Lakhs)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	385837	307881.46	315714	266665	212942	311570
1991-92	430957	351608.08	372228	287983	272676	474708
1992-93	551968	397754.69	451622	337207	319961	497355
1993-94	590391	431368.08	535684	306738	354320	455638
1994-95	766886	607085.62	670127	326676	372234	482593
1995-96	766662	529028.77	857478	388654	389674	452178
1996-97	953510	637501.38	975821	493721	487037	653336
1997-98	1031499	720030.38	884324	606299	492422	752585
1998-99	1254213	939771.15	1214912	1178947	647262	909767
1999-2000	2038225	1094865.62	1280794	969985	724577	990201
Notes:						
1. MAH = Maharashtra, REST = Average over remaining 13 states, AP = Andhra Pradesh, GUJ = Gujarat, KAR = Karnataka, TND = Tamil Nadu.						
2. Calculations for 1999-2000 are based on Revised Estimates of the relevant data; all others are based on Accounts data.						

Basic Resource Gap 2 : BRG2

(Rs. Lakhs)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	303164	265436.15	299638	161820	174735	272419
1991-92	300496	308607.85	349177	162585	233411	430684
1992-93	461034	324354.46	404832	290040	281265	410015
1993-94	487345	388897.38	482642	285173	316753	416847
1994-95	560792	529549.31	631309	264962	325109	444926
1995-96	514323	443598.46	791335	310894	339274	398951
1996-97	762064	602195.77	887406	409074	393791	551373
1997-98	724325	622507.85	765067	471914	383540	681655
1998-99	887908	744337.08	1030886	927043	518764	708519
1999-2000	1470854	893383.15	1160093	782329	560865	738653
Notes: See Notes on Table dealing with BRG1.						

Basic Resource Gap 3 : BRG3

(Rs. Lakhs)

* We have employed the methodology of Pattanaik *et al* (1994) for computing the measures listed in this appendix. However, the actual numbers given here may differ from those given by Pattanaik *et al* (1994). This may be due to differences in the data source used by the two studies.

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	195821	169091.38	168800	131051	108170	170789
1991-92	174670	196161.08	207974	131347	154651	310292
1992-93	317874	188313.15	237491	207874	187493	266963
1993-94	329624	242373.85	300016	185859	214468	260551
1994-95	385299	366929.69	427375	166242	210734	269847
1995-96	340292	240212.62	472430	194346	193406	215809
1996-97	527347	367038.08	532163	270384	219350	332291
1997-98	546671	362203.08	411852	311946	164270	406062
1998-99	589031	501093.54	725001	759428	324839	464766
1999-2000	1203243	607955.00	800103	606417	370242	453206

Notes: See Notes on Table dealing with BRG1.

(C) : SOME RATIOS BASED ON BRG

Fiscal Stress Ratio : FSR

(%)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	0.5075	0.5485	0.5347	0.4914	0.5080	0.5482
1991-92	0.4053	0.5555	0.5587	0.4561	0.5672	0.6536
1992-93	0.5759	0.4762	0.5259	0.6165	0.5860	0.5368
1993-94	0.5583	0.5618	0.5601	0.6059	0.6053	0.5718
1994-95	0.5024	0.6025	0.6378	0.5089	0.5661	0.5592
1995-96	0.4439	0.4537	0.5510	0.5000	0.4963	0.4773
1996-97	0.5531	0.5750	0.5453	0.5476	0.4504	0.5086
1997-98	0.5300	0.5038	0.4657	0.5145	0.3336	0.5396
1998-99	0.4696	0.5317	0.5968	0.6442	0.5019	0.5109
1999-2000	0.5903	0.5573	0.6247	0.6252	0.5110	0.4577

Notes: See Notes on Table dealing with BRG1.

Fiscal Dependency Ratio 1 : FDR1

(%)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	0.3582	0.5505	0.4797	0.4875	0.4277	0.4706
1991-92	0.3576	0.5299	0.4798	0.4169	0.4364	0.4945
1992-93	0.3939	0.5414	0.5027	0.4222	0.4507	0.5102
1993-94	0.3694	0.5233	0.5082	0.3648	0.4380	0.4528
1994-95	0.3829	0.5565	0.5379	0.3440	0.4202	0.4221

1995-96	0.3586	0.4958	0.5996	0.3595	0.3745	0.3608
1996-97	0.3813	0.5224	0.6000	0.3926	0.4065	0.4242
1997-98	0.3727	0.5268	0.4984	0.4076	0.3908	0.4342
1998-99	0.4137	0.5750	0.5533	0.5317	0.4348	0.4576
1999-2000	0.5044	0.5726	0.5261	0.4561	0.4323	0.4444
Notes: See Notes on Table dealing with BRG1.						

Fiscal Dependency Ratio 2 : FDR2

(%)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	0.2814	0.4728	0.4553	0.2958	0.3510	0.4114
1991-92	0.2493	0.4614	0.4501	0.2353	0.3736	0.4486
1992-93	0.3290	0.4420	0.4506	0.3632	0.3962	0.4206
1993-94	0.3049	0.4699	0.4579	0.3392	0.3916	0.4143
1994-95	0.2800	0.4823	0.5067	0.2790	0.3670	0.3892
1995-96	0.2406	0.4116	0.5534	0.2876	0.3260	0.3184
1996-97	0.3048	0.4895	0.5456	0.3253	0.3287	0.3580
1997-98	0.2617	0.4511	0.4311	0.3173	0.3044	0.3933
1998-99	0.2929	0.4533	0.4695	0.4181	0.3485	0.3564
1999-2000	0.3640	0.4637	0.4766	0.3679	0.3346	0.3315
Notes: See Notes on Table dealing with BRG1.						

Fiscal Dependency Ratio 3 : FDR3

(%)

YEARS	MAH	REST	AP	GUJ	KAR	TND
1990-91	0.1818	0.3014	0.2565	0.2396	0.2173	0.2579
1991-92	0.1449	0.2925	0.2681	0.1901	0.2475	0.3232
1992-93	0.2268	0.2588	0.2644	0.2603	0.2641	0.2739
1993-94	0.2062	0.2939	0.2846	0.2211	0.2651	0.2590
1994-95	0.1924	0.3341	0.3430	0.1750	0.2379	0.2360
1995-96	0.1592	0.2249	0.3304	0.1798	0.1859	0.1722
1996-97	0.2109	0.3001	0.3272	0.2150	0.1831	0.2157
1997-98	0.1975	0.2657	0.2321	0.2097	0.1304	0.2343
1998-99	0.1943	0.3050	0.3302	0.3425	0.2182	0.2338
1999-2000	0.2978	0.3193	0.3287	0.2852	0.2209	0.2034
Notes: See Notes on Table dealing with BRG1.						