Review of Trends in Fiscal Transfers in India

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Contents

Acknowledgements		ii
Contents		iii
Executive Summary		ix
Chapter 1	Sharing of Central Taxes: Overview of Methodology and Trends	1
Chapter 2	Overview of Grants: Principles and Empirical Trends	29
Chapter 3	Trends in Fiscal Transfers	55
Chapter 4	Projections of Central Taxes by the Finance Commission: Measuring Accuracy	69
Chapter 5	Decomposing Finance Commission Transfers: Vertical and Horizontal Components	97
Chapter 6	Dependence of States on Central Transfers: Aggregate and State Wise Analysis	107
Chapter 7	Summary and Conclusions	131
References		141
Appendix Tables		145

List of Tables

Table 1.1: Inter se Sharing of Income Tax: Phase I
Table 1.2: Inter se Sharing of Union Excise Duties: Phase I
Table 1.3: *Inter Se* Sharing of Income Tax and Union Excise Duties: Phase II: Eighth, Ninth and Tenth Finance Commissions
Table 1.4: Criteria and Relative Weights for Determining Inter-Se Shares of States: Phase III Tenth (Alternative Scheme), Eleventh, and Twelfth Finance Commissions
Table 1.5: State-wise Share in Central Taxes and Duties Recommended by the Finance Commission (based on State's Share of Central taxes as proportion of Total Gross central Taxes as estimated by the Respective Commissions)

Table 2.1: Modified Representative Tax System Approach
Table 2.2: Purpose of Grants: First to Twelfth Finance Commissions
Table 2.3: Relative Share of Taxes and Finance Commission Grants in Total Transfers
Table 2.4: Non-Plan Revenue Gap Grants: Shares of Special and General Category States
Table 2.5: State wise Revenue Gap Grants: Ninth to Twelfth Finance Commission Period

Table 2.6: State wise Share in Total Grants Recommended by the Finance Commission

Table 3.1: Years Covered Different Finance Commission Recommendations
Table 3.2: Transfers Relative to Centre's Gross Revenue Receipts
Table 3.3: Composition of Transfers: Relative Shares of Tax Devolution and Grants
Table 3.4: Share of Centre and States in Combined Revenue Receipts before Transfers
Table 3.5: Relative Shares of Centre and States in Revenue and Total Expenditures
Table 3.6: State wise Share in Central Taxes and Grants Recommended by the Finance Commission

Table 4.1: Forest Errors: Income Tax
Table 4.2: Income Tax: Forecast Errors: Summary Measures
Table 4.3: Forecast Errors: Union Excise Duties
Table 4.4: Union Excise Duties: Forecast Errors: Summary Measures
Table 4.5: Forecast Errors: Corporation tax
Table 4.6: Corporation Tax: Forecast Errors: Summary Measures
Table 4.7: Forecast Errors: Customs Duty Revenues
Table 4.8: Customs Duty Revenues: Forecast Errors: Summary Measures
Table 4.9: Forecast Errors: Total Central Tax Revenues
Table 4.10: Total Central Tax Revenues: Forecast Errors: Summary measures
Table 4.11: Analysis of Difference between Actual and Assumed Growth Rates and Buoyancies in Finance Commission Projections
Table 4.12: Andhra Pradesh Own Tax Revenues: Finance Commission Projections and Actuals
Table 4.13: Gujarat Own Tax Revenues: Finance Commission Projections and Actuals
Table 4.14: Orissa Own Tax Revenues: Finance Commission Projections and Actuals
Table 4.15: Assam Own Tax Revenues: Finance Commission Projections and Actuals

Table 5.1: Per Capita Finance Commission Transfers
Table 5.2: Finance Commission: Vertical Transfers
Table 5.3: Finance Commission: Per Capita Horizontal Transfers
Table 5.4: Finance Commission: Horizontal Transfers
Table 5.5: Decomposition of Transfers: Relative Importance of Vertical and Horizontal Components
Table 5.6: Regression of Per Capita Transfer on Per Capita Nominal GSDP

Table 6.1: Share of States' in Central Taxes and Related Aggregate Determinants
Table 6.2: Changes in States' Dependence on Share in Central Taxes Over Successive Commissions
Table 6.3: Decomposition of Percentage Change in States' Share in Central Taxes Relative to States' Revenue Receipts
Table 6.4: Total Transfers from the Centre as Percentage of Revenue Receipts: High Income States
Table 6.5: Total Transfers from the Centre as Percentage of Revenue Expenditure: High Income States
Table 6.6: Total Transfers from the Centre as Percentage of Revenue Receipts: Middle Income States
Table 6.7: Total Transfers from the Centre as Percentage of Revenue Expenditure: Middle Income States
Table 6.8: Total Transfers from the Centre as Percentage of Revenue Receipts: Low Income States
Table 6.9: Total Transfers from the Centre as Percentage of Revenue Expenditure: Low Income States
Table 6.10: Total Transfers from the Centre as Percentage of Revenue Receipts: Special Category States: Group 1
Table 6.11: Total Transfers from the Centre as Percentage of Revenue Expenditure: Special Category States: Group 1
Table 6.12: Total Transfers from the Centre as Percentage of Revenue Receipts: Special Category States: Group 2
Table 6.13: Total Transfers from the Centre as Percentage of Revenue Expenditure: Special Category States: Group 2

List of Charts

Chart 1.1: Share of High, Middle, and Low Income States in Tax Devolution

Chart 2.1: Share of Special Category States in Total Grants

Chart 3.1: Revenue Surplus of Centre, States, and Combined Accounts
Chart 3.2: Relative Shares of Centre and States in Combined Revenue Receipts after Transfers
Chart 3.3: Share of States in Combined Revenue and Total Expenditures
Chart 3.4: Share of High, Middle, and Low Income General Category States: Long Term Trends

Chart 4.1: Errors of Bias and Slope
Chart 4.2: Income Tax: FC Projections and Actuals
Chart 4.3: Income Tax: Percentage Error
Chart 4.4: Union Excise Duties: FC Forecasts and Actuals
Chart 4.5: Union Excise Duties: Percentage Error
Chart 4.6: Corporation Tax: FC Forecasts and Actuals
Chart 4.7: Corporation Tax: Percentage Error
Chart 4.8: Custom Duty Revenues: FC Forecasts and Actuals
Chart 4.9: Customs Duties: Percentage Error
Chart 4.10: Total Central Tax Revenues: FC Forecasts and Actuals
Chart 4.11: Total Central Tax Revenues: Percentage Error
Chart 4.12: Andhra Pradesh Own Tax Revenues: Finance Commission Projections and Actuals
Chart 4.13: Gujarat Own Tax Revenues: Finance Commission Projections and Actuals
Chart 4.14: Orissa Own Tax Revenues: Finance Commission Projections and Actuals
Chart 4.15: Assam Own Tax Revenues: Finance Commission Projections and Actuals

Chart 6.1: States' Dependence on Share in Central Taxes
Chart 6.2: States' Share of Central Taxes in Gross Central Tax Revenues and Gross Central Taxes relative to GDP
Chart 6.3: Logarithmic Changes in Determinants of States' Dependence on Share in Central Taxes
Chart 6.4: Transfers as percent of States' Revenue Receipts
Chart 6.5: Ninth Finance Commission: Transfers as percentage of State's Revenue Receipts and Revenue Expenditures
Chart 6.6: Tenth Finance Commission: Transfers as percentage of State's Revenue Receipts and Revenue Expenditures
Chart 6.7: Eleventh Finance Commission: Transfers as percentage of State's Revenue Receipts and Revenue Expenditures

Appendix Tables

Appendix Table 3.1: Revenue Account Balance as percent of GDP at Market Prices (1999-00 Base Series)
Appendix Table 3.2: Transfers Relative to Centre's Gross Revenue Receipts and GDP
Appendix Table 3.3: Composition of Combined Revenue Receipts
Appendix Table 6.1: States' Share of Central Taxes as Percentage of States Revenue Receipts and State Revenue Receipts as Percentage of GDP

Executive Summary

Sharing of Central Taxes

1. Over the period covered by twelve Finance Commissions, the key constitutional change was brought about by the 80th Constitutional amendment, which provided for a mandatory sharing of the net proceeds of all central taxes except earmarked cesses and surcharges and Article 268/269 taxes (including the service tax). Historically, the distinction between Article 270 and 272 had led the earlier Finance Commissions to use the sharing of income taxes far more as an instrument of vertical transfers and the sharing of Union excise duties as a tool to achieve more horizontal equity.

2. The main criteria for determining the *inter se* shares of the states used by the different Finance Commissions have related to: population criterion, distance criterion, inverse income criterion, criterion based on area, index of infrastructure, index of fiscal discipline, and index of tax effort. Some of the earlier Commissions had also used index of poverty or index of backwardness. The factor of collection/assessment was also used in the case of sharing of income tax. Over time, the criteria for determining the *inter se* shares of the states converged and a common set of criteria began to be applied for the sharing of all taxes beginning with the alternative scheme of tax devolution suggested by the Tenth Finance Commission, which led to the 80th Amendment.

3. The two core criteria in the scheme of sharing of central taxes are: population and distance. It can be seen that the distance formula can serve as a tool for fiscal capacity equalization, subject to some assumptions. The population criterion is a tool for vertical transfers as it provides equal per capita transfers to all states independent of their fiscal capacities. For fiscal capacity equalization, the amount of total transfers required depends on the average tax-GSDP ratio and the distributions of populations and per capita GSDPs.

4. The following features summarise the trends in tax devolution from the centre to the states:

a. The share of the general category states in total tax devolution was as high as 97.3 percent under the scheme suggested by the First Finance Commission. It came down to about 86.5 percent in the award period of the Tenth Finance Commission and has risen to about 91.8 percent for the Twelfth Finance Commission period. Clearly, it is the sharing of the central taxes with the states, that has played a predominant role in transfers given by the Finance Commissions.

b. The special category states as a group received, particularly from the period of the Seventh Finance Commission onwards, a share in central taxes, which was much higher than their share in the population as a group. This was due to using a part of the share of Union excise duties on the basis of assessed deficits that would otherwise be given as grants.

c. This practice was discontinued by the Tenth Finance Commission. For the Tenth, Eleventh, and Twelfth Finance Commissions, the share of the special category states in central taxes is still higher than their share in population partly because of the use of a 'floor' in the index of 'area'.

d. Among the general category states, looking at high income, middle income and low income states as groups, the general pattern indicates that for the more recent Finance Commissions, the share of low income states has increased while the shares of the middle and high income states have fallen.

Finance Commission Grants

5. States get grants from the Finance Commission, Planning Commission and other Central Ministries. The Finance Commission grants are for meeting the assessed revenue-gap of the states (on non-plan or total revenue account, as the case may be) as also for various other purposes including for special needs and upgradation of standards. From a methodological viewpoint, the determination of the revenue-gap grants is quite important. It is the determination of these grants that necessitates the Finance Commission to undertake a comprehensive examination of both the central and the state finances. It is in this context that the Finance Commissions have often been accused of following a gap-filling approach, which leads to significant adverse incentives.

6. The Finance Commissions particularly from Ninth Finance Commission onwards have attempted to apply, to some extent normative principles for making an assessment of state's own tax and non-tax revenues as well as revenue expenditures. This is done in two steps. The first step requires the estimation of the above variables for the base year. Secondly, projections for the recommendation period are made. While the Ninth Finance Commission used a panel modeling approach to determine the tax base in the base year, some of the more recent Finance Commissions have used partial adjustments in tax-GSDP ratios relative to the average tax-GSDP ratio, making a distinction between the general and special category states. Commissions have also used a normative cum prescriptive set of parameters for projections for the recommendation period using the adjusted base year figures. On the expenditure side, application of normative principles has been far limited. In some priority services, like health and education, higher growth rates have been adopted.

7. In relation to the Finance Commission grants, the following trends may be highlighted:

a. The Finance Commission grants have been given for meeting the assessed revenue gap of the states (on non-plan or total revenue account) as also for various other purposes including special needs and upgradation of standards.

b. The share of grants in total transfers has varied in the range from the lowest share of 7.7 percent (Seventh Finance Commission) to the highest share of 26.9 percent for the Third Finance Commission with reference to actual transfers.

c. Within the category of revenue gap grants, the share of the special category states has generally been more than ninety percent. This implies that for the general category states, it is tax revenue sharing that has been the important principle for determining grants, while for the special category states the determining principle has been the exercise that determines the revenue-gap grants.

Trends in Fiscal Transfers: Vertical Imbalance

8. Looking at the impact of the total transfers including share in central taxes and all grants, the following observations can be made:

i. There has been a steady improvement in the share of transfers to the states as percentage of centre's gross revenue receipts. From the level of about 25 percent under the Third Finance Commission, this share increased to 39.1 percent for the Ninth Finance Commission period and may turn out to be above 40 percent for the Twelfth Finance Commission period.

ii. The share of centre and states in the combined revenue receipts before transfers and after transfers get completely reversed. Before transfers, centre's share has been in the range of 61-66 percent from the Second Finance Commission period onwards. The share of combined revenue receipts available to the centre after transfers has fallen over time from the Seventh Finance Commission period onwards when it was about 44 percent. In the Twelfth Finance Commission period, this share is about 37 percent. States' share, on the other hand, has increased from 56 to 64 percent between the Seventh and the Twelfth Finance Commission periods.

iii. The relative shares of the centre and the states in the combined revenue expenditures however, have remained stable throughout the period covered by the First to Twelfth Finance Commission periods. States' share in the combined revenue expenditures throughout this period has been on average about 57 percent whereas that of centre has been at about 43 percent with small variations. A falling share in revenue receipts after transfers for the centre while maintaining a stable share in revenue and total expenditure can only imply that centre's share in borrowing has increased over these years.

iv. Looking at the state-wise picture of transfers recommended by the Finance Commissions including share in taxes as well as Finance Commission grants, the trend seems to be that Finance Commission transfers have moved in favour of lower income states whereas the share of middle incomes states has fallen marginally and that of high income state have fallen more sharply. This indicates that for the more recent Finance Commissions, particularly from the Seventh Finance Commission period, there has been an attempt at achieving a greater degree of equalization. It may also imply a response to increasing inequalities in per capita incomes across states.

Measuring Forecast Accuracy

9. Finance Commissions in India are required to make their recommendations for a period of five years based on dated information. We have looked at the nature of forecast error in one core determinant of grants, viz., forecast of central revenues. It turns out that that among the four recent Finance Commission, three Commissions, viz., Ninth, Tenth, and Twelfth, have underestimated the central tax revenues, and the Eleventh Commission overestimated these. We have analyzed the forecast error for four major central taxes as well as total central taxes for the Ninth Finance Commission period onwards. Some of the findings may be highlighted as below:

a. For the period 1989-90 to 2007-08, the income tax revenues were underestimated for 15 out of nineteen years. The percentage error ranged from (-) 28.1 percent to 43.2 percent. The four years of overestimation are all in the recommendation period of the Eleventh Finance Commission.
b. In the case of the Union excise duties, the revenues were overestimated by all Commissions. For 18 out of 19 years analyzed here, there was overestimation. The error of overestimation ranged from (-) 1.3 to (-) 32.3 percent.
c. In the case of corporation tax, there was underestimation except for 4 years under the Eleventh Finance Commission.
d. In the case of customs duties, there was overestimation in 12 out of 19 years.
e. For total central taxes revenues, for 10 years there was underestimation and for 9 years there was overestimation. The errors ranged from (-) 24.5 to 23.0 percent.
f. The extent of percentage error increases, as we move towards the later years in a Commission's recommendation period.
g. An analysis of errors indicates that the systematic error of bias (in prediction of means) almost always accounts for a large part of the error.

10. The cost of forecast error is asymmetric for the states. If the Finance Commission overestimates central tax revenues, it would recommend smaller grants, which will not be revised upwards seeing that central taxes have not performed as well as anticipated. On the other hand, if there is underestimation, grants would be larger and will remain fixed. If central taxes perform better than anticipated, states would gain as grants are protected and centre is able to give these out of the larger than anticipated tax revenues.

11. A comparison between assessed own tax revenues and corresponding actual for the period covered by Ninth to Twelfth Finance Commission for four selected states viz., Andhra Pradesh, Gujarat, Orissa and Assam highlights some difference between the approaches followed by different Commissions. In particular, there are similarities between the approaches of the Ninth, Tenth and Twelfth Finance Commissions in the way middle and higher income states were assessed. In contrast the Eleventh Finance Commission required that they raise tax revenues much higher than what they were able to achieve.

Vertical and Horizontal Impact

12. Vertical transfers are given in equal per capita amounts to all states including the highest fiscal capacity state. Horizontal transfers are given in per capita terms over and above the vertical transfers. These are meant to redress deficiency in fiscal capacity of the states relative to a benchmark and also to take into account cost disabilities. This analysis has been done for periods covered by the Ninth, Tenth, Eleventh and Twelfth Finance Commissions both in aggregate and state specific terms.

13. For the Ninth and Tenth Finance Commissions, the relative share of vertical transfers was 59 and 57 percent, respectively. This share came down to 39 percent for the Eleventh Finance Commission and 48 percent for the Twelfth Finance Commission. Correspondingly the Eleventh Finance Commission devoted 61 percent of total transfers for meeting the horizontal objectives.

14. A regression of per capita transfers on per capita nominal GSDP indicates that in all cases relating to the four Finance Commissions reviewed here, a one percent increase in the per capita GSDP of a state would lead to a fall in per capita transfer. The elasticity of response varies from (-) 0.36 for the Tenth Finance Commission to (-) 0.73 for the Eleventh Finance Commission. Per capita transfers are considerably higher for the special category states as compared to the general category states. For the Twelfth Finance Commission period, these are nearly 6 times as high as those for the general category states.

Analysis of Dependence

15. States' dependence on the share in central taxes has increased over time. This is partly due to the recommendation of the Finance Commissions and partly due to changes in the ratios of the centre's gross tax revenues and state's own revenue receipts to GDP. Except for the period of the Tenth Finance Commission, states' own revenue effort also increased over these years indicating that the role of played by central taxes increased on a trend basis in spite of the increasing revenue effort of the states themselves.

16. The low income states depend on central transfers far more than the middle and high income states. The extent of dependence is far more for the special category states. As percentage of their revenue receipts, the dependence is the highest for Jammu and Kashmir, followed by Meghalaya and then Himachal Pradesh. For some special category states, we find that the share of transfers in revenue expenditures was more than 100 percent for some years.

17. In a scheme of transfers that aims to achieve a suitable degree of equalization, it is to be expected that the share of transfers in revenue receipts and dependence of states on transfers for financing their revenue expenditures would in general be larger for the states that have relatively lower fiscal capacities. This pattern is clearly visible for the general category states. Any departures from this expected pattern would be due to higher than

average tax effort on the part of some states (where the share of transfers in revenue receipts will be less than average) or due to some components of transfers that are not equalizing in nature.

Chapter 1

Sharing of Central Taxes: Overview of Methodology and Trends

1.1 Introduction

In this Chapter, we undertake an empirical overview of state's share in central taxes. In India, fiscal transfers are made from the centre to the states through the sharing of central tax revenue with the states under Artic le 270 of the constitution (earlier Article 272 also) as well as grants under Articles 275 and 282 of the constitution. Transfers are recommended by various agencies including the Finance Commission, Planning Commission, and the central ministries. Here, we focus on transfers recommended by the Finance Commission, which has the main responsibility of determining states' shares in tax revenue sharing. In India, tax revenue sharing has been used for meeting both vertical and horizontal objectives of transfers. Horizontal transfers may be for equalization, or for neutralizing disabilities or providing incentives for tax effort and fiscal discipline.

1.2 Evolution of Tax Revenue Sharing Criteria

In reviewing the *inter se* distribution of the aggregate share of states in central tax revenues, the approach of the Finance Commissions can be summarised in terms of three distinct phases. Up to the Seventh Finance Commission, the distribution formulae used for determining the income tax shares were clearly distinct from those for the Union excise duties and were given under two separate Articles of the Constitution, viz., Article 270 and Article 272. Article 270 had provided for mandatory sharing of income tax which Article 272 had provided for in sharing of the Union excise duties at the discretion of the centre. This may be considered as Phase I. Since then, a process of convergence between the two sets of formulae began. A full convergence was arrived at with the recommendations of the Eleventh Finance Commission, after a major amendment to the Constitution viz., the 80th amendment. The period from the Eighth to the Tenth Finance Commission before the alternative scheme of devolution was implemented may be

considered as Phase II. The Third Phase is for the period of the Eleventh Finance Commission onwards.

a. Phase I: Separate Criteria for Income Tax and Union Tax Duties

Population and collection/assessment were the only two criteria used for determining the *inter se* shares of the states in the case of income tax up to the Seventh Finance Commission. In respect of the Union excise duties, the criteria, as they evolved over time, had placed greater and greater emphasis on factors relating to economic backwardness and fiscal weakness of the states. However, population continued to be the largest determining factor upto the Sixth Commission, although its weight went down from 100 to 75 percent. The Seventh Commission further reduced this weight to 25 percent (a fall of 50 percentage points from the preceding Commission). The changes in the relative weights to factors, as recommended by different Commissions, are summarised in Tables 1.1 and 1.2.

Table 1.1: *Inter se* Sharing of Income Tax: Phase I

Finance Commission	Percentage Weight Assigned to	
	Population	**Collection**
First, Third, and Fourth	80	20
Second	90	10
	Population	**Assessment**
Fifth, Sixth, and Seventh	90	10

Source: Reports of Finance Commissions, Government of India.

In respect of the Union excise duties, the importance of population went down with successive Finance Commissions while that of factors reflecting poor resource bases continued to increase (Table 1.2). For the sharing of income tax upto the Ninth Finance Commission, the principle of derivation was given some consideration and collection/assessment was given some weight in the sharing of income tax which was subject to Article 270. This principle was not, however, applied to the distribution of Union excise duties, which was a matter of `discretionary' sharing (under Article 272).

Table 1.2: *Inter se* Sharing of Union Excise Duties: Phase I

Finance Commission	Relative Weights (Percent)		
	Population	Other Factors		
First	100			
		Discretionary Adjustments		
Second	90	10		
	Population used as Major Factor	Financial Weakness and Economic Backwardness		
Third	(Weight unspecified)	Weight Unspecified		
		Social and Economic Backwardness		
Fourth	80	20		
		Index of Backwardness		
Fifth	80+16.66*	3.33		
		Distance		
Sixth	75	25		
		Inverse-Income	Poverty Ratio	Revenue Equalization
Seventh	25	25	25	25

Source: Reports of Finance Commissions, Government of India.
Note: * Among states with per capita income below the all states average.

b. Phase II: Towards Convergence: Eighth to Tenth Finance Commissions

Beginning with the Eighth Finance Commission, two changes occurred. First, there was a move towards unifying the formulae for the *inter se* distribution of both income tax and Union excise duties and, secondly, a portion of the Union excise duties was kept aside for distribution according to `assessed deficits'.[1] The unified formulae used by the Eighth, Ninth and Tenth Commissions are given in Table 1.3. The weight to the factor of population ranged between 20 to a little less than 30 percent for different Commissions.

The sharing of portions that were kept out of the unified formula was done as follows. In the case of income tax, ten percent of the share recommended for the states was to be shared on the basis of assessment of income tax (Eighth and Ninth Finance

[1] Assessed deficits refers to the exercise of assessment of (a) central tax revenues and the share of the states in the central tax revenues as per the recommended share of the Finance Commission; (b) assessment of states needs (expenditures on non-plan revenue account or total revenue account), and (c) assessment of states own tax and not-tax revenues. These exercises are done for th erecommendation period of Finance Commission. The deficit that emerges as the excess of expenditure needs over states own revneu receipts and share in central taxes is refered to as the assessed deficit. This amount is given as non-plan revenue deficit grant.

Commissions). In the case of Union excise duties, a portion of the shareable proceeds for devolution was kept aside for distribution among states on the basis of assessed deficits. The share kept aside for this purpose also gradually increased. It was five percentage points out of 45 percent of the shareable proceeds of Union excise duties, which formed the states' share, in the case of Eighth Commission and the First Report of the Ninth Commission. It was raised to 7.425 percentage points in the case of the Second Report of the Ninth Commission and subsequently to 7.5 percentage points out of 47.5 percent of the shareable proceeds of the Union Excise duties by the Tenth Commission.

The Tenth Finance Commission recommended an 'Alternative Scheme of Devolution' whereby after a constitutional amendment, proceeds of all central taxes were to be shared with the state governments. This was meant to give a significant revenue interest to the central government in all taxes that it was levying and also to facilitate tax reforms by distributing more evenly the burden of adjustment (in terms of any initial revenue loss) between the centre and the states. In the original scheme suggested by the Tenth Finance Commission, gross proceeds of the central taxes were to be shared excluding cesses and surcharges. Articles 268/269 taxes were also kept outside of the purview of such sharing. The alternative scheme was accepted by the central government and implemented through the 80th constitutional amendment. However, sharing was to be with reference to the net proceeds (net of cost of collections) rather than gross proceeds, as originally recommended. With the 80th amendment, states' share of the central taxes also ceased to be part of the Consolidated Fund of India. It is implied in Article 270 that the same percentage share will apply to all central taxes that are to be shared. Article 272 was dropped. Later, the 88th amendment to the Constitution, brought about in 2004, placed the service tax under Article 268, thereby excluding it from the purview of Article 270.

Table 1.3: *Inter Se* Sharing of Income Tax and Union Excise Duties*: Phase II: Eighth, Ninth and Tenth Finance Commissions

A. Sharing of 90 percent of divisible pool of Income Tax and specified portion of divisible pool of Union Excise Duties According to Common Criteria

Finance Commission	Criteria				
	Population	**Distance**	**Inverse Income**	**Poverty Ratio**	**Index of Backwardness**
Eighth	25	50	25		
Ninth (1)	25	50	12.5	12.5	
Ninth (2) Income Tax	25	50	12.5		12.5
Ninth (2) Union Excise Duties	29.94	40.12	14.97		14.97
			Area	**Index of Infrastructure**	**Tax Effort**
Tenth	20	60	5	5	10

B1. Income Tax: Sharing of Balance Amount

Eighth and Ninth Finance Commissions: Sharing of 10 percent of divisible pool of income tax: According to assessment/contribution. **Tenth Finance Commission**: The balance 10 percent was also distributed according to criteria given in Part A of the Table.

B2. Union Excise Duties: Sharing of Balance of Divisible Amount

Eighth and Ninth Finance Commissions (First Report): 5 percentage points out of 45 percent of Union Excise Duties, which formed the States' share, according to assessed deficits.

Ninth Finance Commission (Second Report): 7.425 percentage points out of 45 percent according to assessed deficits.

Tenth Finance Commission: 7.5 percentage points out of 47.5 percent according to assessed deficits.

Source: Reports of Finance Commissions, Government of India.

Prior to the 80th amendment, apart from the two main taxes, *viz*., income tax and the Union excise duties, two other arrangements for transfers were in vogue, *viz*., grant in lieu of tax on railway passenger fares and additional excise duties in lieu of sales tax on specified commodities (cotton textiles, tobacco and sugar). Both of these arrangements were tax rental arrangements in the sense that the original power to levy the tax was vested with the state governments but were transferred to the centre for the sake of uniformity across states among other reasons. With the 80th amendment to the Constitution, the separate identity of these arrangements was also abolished.

c. Phase III: Full Convergence: From the Alternative Scheme of the Tenth Finance Commission

Under the global sharing agreement, only one set of shares is to be determined replacing four distinct sets, which were needed prior to the 80th constitutional amendment, relating respectively to (i) portions of income tax and Union excise duties subjected to common criteria; (ii) portion of devolution according to assessed deficits; (iii) grant in lieu of tax on railway passenger fares; and (iv) additional excise duties in lieu of sales tax on cotton textiles, tobacco and sugar. The criteria followed by the Tenth Finance Commission (Alternative Scheme), and the subsequent Commissions relate to this generalised sharing arrangements. These criteria jointly reflect four considerations: (i) vertical transfers, (ii) horizontal equity, (iii) incentives for efficiency, and (iv) cost disadvantages.

Two core criteria, which have been used by the Finance Commissions for horizontal equity, providing higher per capita transfers to lower per capita fiscal capacity states, are distance and inverse-income formulae. In the case of the Eighth Finance Commission, the combined weight given to these two criteria was 75 percent. In the case of the Ninth Finance Commission (Second Report), the combined weight for these two criteria was 62.5 percent for income tax. An additional equity related criterion was used in the form of the index of backwardness (replacing the index of poverty used in the First Report), which was given a weight of 12.5 percent. The weight of these three equity related criteria added to about 70 percent in the case of Union excise duties. The Tenth Finance Commission had decided to use only one of these criteria, namely, the distance formula and gave it a weight of 60 percent. The Eleventh Finance Commission had kept the weight to this criterion at 62.5 percent.

While computing distance-based shares of states, the Eleventh Finance Commission had introduced some changes. The practice followed by the Ninth and Tenth Finance Commissions was that of measuring the distance of the per capita income of a state from that of the highest per capita income. But for this purpose, Goa, being a very small state, was not considered a representative state, and distances were measured from

the per capita income of Maharashtra. Maharashtra and Goa were exogenously given the same distance as that for Punjab. As a result, three states, *viz.*, Punjab, Maharashtra, and Goa obtained the same distances, and consequently the same per capita shares. Instead of taking a single high income state as the 'representative' highest income state, the Eleventh Finance Commission had taken a three-state weighted average of per capita GSDP of Punjab, Maharashtra and Goa as the benchmark from which distances were measured. The distances of these three states were then worked out as a fraction of the distance of Haryana from the representative benchmark. These fractions were obtained by taking the ratio of Haryana's per capita GSDP to the per capita GSDP of these states. The three-state average was taken to be more 'representative'. A similar method was followed by the Twelfth Finance Commission. Table 1.4 gives the different criteria and related weights followed by the Tenth (Alternative Scheme), Eleventh, and Twelfth Finance Commissions.

Table 1.4: Criteria and Relative Weights for Determining *Inter-Se* Shares of States: Phase III Tenth (Alternative Scheme), Eleventh, and Twelfth Finance Commissions

Criteria	Relative Weight (Percent)		
	Tenth (Alternative Scheme)	Eleventh	Twelfth
1. Population	20.0	10.0	25.0
2. Distance	60.0	62.5	50.0
3. Area	5.0	7.5	10.0
4. Index of Infrastructure	5.0	7.5	-
5. Tax Effort	10.0	5.0	7.5
6. Fiscal Discipline	-	7.5	7.5

Source: Reports of Finance Commissions, Government of India.

The Eleventh Finance Commission had also endeavored to evolve a structure of incentives in the mechanism of fiscal transfer. The Tenth Finance Commission had utilised an index of tax effort made by the states. The Eleventh Finance Commission had utilised an index of tax effort and an index of fiscal discipline, and given these a combined weight of 12.5 percent. In the index of fiscal discipline, the improvement is measured by considering the ratio of the measure of fiscal discipline in a reference period in comparison to a base period. For the base period, the average for the three-year period from 1990-91 to 1992-93 was taken. For the reference period, the average of three years from 1996-97 to 1998-99 was taken. Higher own revenues or lower revenue expenditures

or any combination of the two can bring about an improvement in fiscal self-reliance. Further, the state specific improvements are related to the corresponding all state improvement to neutralise factors that commonly affect all states. The comparison of the performance of a state with the all state performance reflected the consideration that if the revenue performance of states is deteriorating in general, the state that accomplishes a relatively lower deterioration is to be rewarded relatively more than average. Similarly, if all revenue balance profiles are improving, the state where improvement is relatively more than average is rewarded relatively more.

Cost variations are brought into consideration through the criteria based on area and index of infrastructure: larger the area (per crore population), higher the per capita cost; similarly, lower the index of infrastructure, higher is the per capita cost. In the case of area, which was introduced first by the Tenth Finance Commission, a "censored" distribution of area was used where a floor and a ceiling were prescribed. The floor reflected the considerations that certain fixed establishment cost are to be incurred even if the state is extremely small. The ceiling reflected the consideration that beyond a limit, additional costs at the margin for providing services become negligible. In the case of Eleventh Finance Commission and Twelfth Finance Commission the concept of ceiling was dropped. Thus, the three main considerations in the selection of criteria used, in Phase III with full convergence of criteria, by the Tenth (Alternative Scheme), Eleventh, and Twelfth Finance Commissions relate to: (i) resource deficiency, (ii) higher cost of providing services, and (iii) fiscal discipline.

1.3 Methodological Basis of Tax Revenue Sharing Criteria

The Finance Commission grants also have vertical and horizontal equalizing components. In addition, these have been used to partly cover disabilities as also committed expenditures.

In theory as well as practice, a system of equalization transfers is considered desirable as it is consistent with both equity and efficiency. The efficiency implications follow from two considerations:

(a) Locational inefficiencies that can result from inefficient migration induced by fiscal surpluses is neutralized by equalization transfers; and

(b) The redistribution implied by equalization transfers from the richer to poorer states gives a return also to the richer states by avoiding congestion resulting from excessive migration in the context of services provided by these states that are in the nature of 'congestible' goods.

Courchene (1984, 1998) had argued that the efficiency case of equalization depends on the existence of fiscally induced migration. If there is no fiscally induced migration, there is no efficiency case for equalization. In a recent contribution, Dahlby and Wilson (1994) make out a case for equalization on efficiency grounds even in the absence of fiscally induced migration. They examine the role of equalization grants as an instrument for maximizing a social welfare function or minimizing the 'excess burden' of taxation. Optimal tax theory suggests that the social cost of raising revenues depends not only on the size of the tax base but also on the responsiveness of the tax base to tax rate changes. They argue that it is important to use 'responsiveness' (or buoyancies in the formula for equalization) rather than just the tax rate. The higher the demand and supply elasticities to tax rate changes, the larger is the marginal cost of public funds. On this basis they show that differences in fiscal capacities, even in the absence of fiscally induced migration, are sound grounds for arguing for equalization.

a. Equalization: Some International Practices

In Canada, the 'equalization' payments have been mandated in the constitution since 1982, which commits the federal government to the "principle of making equalization payments to ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation". The equalization transfer to a province in absolute amount is determined by applying the average revenue effort to the difference between standard base and the actual base for that province with respect to the various revenue sources. The application of average revenue effort to the shortfall in fiscal capacity measured by the difference between the standard base and the actual base provides the necessary amount of transfer that would raise the fiscal capacity of the province to the same level as that of standard

state. This answers that province that has a deficient fiscal capacity to provide services at the same level which may be provided the standard state which raises revenues by application of the average tax rate. This produces an estimate of revenue, which is higher than the actual revenue for provinces that have 'below-average' capacity. This exercise is done for all revenue bases used by the provinces (see, for example, Rangarajan and Srivastava, 2004a for a discussion). In the Canadian system, there is no reference to cost differentials and the states are free to use their equalized capacities in providing any mix of public goods and merit goods. The equalization grants are supplemented by health and social sector transfers that are relatively large in volume and are also of an equalizing nature.

The Australian system of equalization transfers (see, Rangarajan and Srivastava, 2004b) goes into the question of cost differentials relevant for comparison with some notion of equal efficiency in the provision of goods and services by the provincial authorities. The guiding principle of horizontal transfers system is fiscal equalization, which is defined by the Commonwealth Grants Commission (CGC) (2004) as follows "State governments should receive funding from the pool of goods and services tax revenue and health care grants such that, if each made the same effort to raise revenue from its own sources and operated at the same level of efficiency, each would have the capacity to provide services at the same standard". The Australian equalization differs from the Canadian equalization due to the reference to efficiency and standard of services. The Canadian system makes reference only to equalization in fiscal capacity. In Australia, fiscal equalization looks at both the revenue and expenditure sides. It may be noted that the typical methodology for determining equalization transfers is not totally devoid of adverse incentives, as discussed in some recent literature (e.g. Garnaut, 2002) on the subject.

The ground conditions in India are different from Canada or Australia in two critical respects. First, the extent of difference in the resource bases is far larger than in Australia or Canada. For example, the ratio of maximum per capita GSDP to minimum is 1.6 to 1 between Ontario (leaving Alberta as a special case) and Prince Edwards Islands;

in Australia, the ratio of per capita GSDP of New South Wales to Tasmania is 1.5 to 1. In India, this ratio between Haryana (leaving Goa as a special case) and Bihar is close to 5 to 1. In comparison to Goa, this relativity is about 9 to 1. The second difference is that the population that resides in the main 'donor' states as compared to main recipient states is much larger in Canada and Australia. In India, it is the other way round. As a result, the amount of redistribution implicit in the equalizing scheme is far larger when the recipients are more than donors, making it extremely difficult to achieve full equalization. Thirdly, there are large inter-state differences in cost conditions in India due to differences in density and composition of population, nature of terrain etc.

In India, the horizontal imbalance is resolved through a combination of tax devolution and revenue-gap grants. In Canada, this is done by grants. In Australia, at present, this is being done by sharing the revenue under the Goods and Services Tax (GST) topped up by the Health Care Grants. The Australian system has switched from grants to revenue sharing and back from time to time. Some economists consider grants as the right means of transfers. States themselves overwhelmingly prefer revenue-sharing. The transfer system in India has evolved in a manner that relies on both modes of transfers. Finding a suitable combination is the relevant problem.

b. Revenue Sharing Criteria: Basic Principles

As indicated earlier, there has been a gradual attempt in the dispensation of the Finance Commissions in India, to move away from conventional devolution towards revenue-sharing which is guided by three main principles, *viz*., (i) capacity equalization; (ii) efficiency promoting incentives; and (iii) allowance for cost disabilities.

The principle of horizontal equity is guided by the consideration that as a result of revenue sharing, the fiscal resource deficiencies across states arising out of systemic and identifiable factors, and under normative revenue effort, are evened out. Thus, the revenue-sharing exercise is supposed to provide to the states resources complementary to their own, so that they may all be enabled to provide an agreed common set of public

services at comparable standards in terms of quality and quantity to all citizens living in the different states. Thus, a citizen of India, no matter which state he resides in, becomes entitled to and is provided with, the same level of services (state level public goods and merit goods of high priority) throughout the country. This also calls for recognition of valid cost differentials in providing a service in different states. The principle of equity, however, is a compensatory principle as it makes up for resource deficiencies. As such, it also creates a vested interest in continuing with the resource deficiency, rather than making efforts to improve own revenue bases, thereby reducing the differences in revenue per unit of resource base across states. To neutralize this adverse incentive, it needs to be complemented by criteria that either neutralizes the effect of deficiencies of tax effort relative to average and/or reward 'efficiency', i.e., efforts to improve the resource bases and deliver services at minimum (efficient) costs. The latter is useful when the overall tax effort is also required to be improved for improving the average level of public services.

1.4 Core Revenue Sharing Criteria: Analytical Overview

a. Income-Based Formulae: Criteria Reflecting Fiscal Deficiency

The income-based criteria that have received the highest weights in the dispensation exercises of recent Finance Commissions (FCs). Income, however, is proxied by per capita State Domestic Product (net or gross). Per capita income or per capita GSDP is taken as a proxy for per capita fiscal capacity. Two main criteria have been used in this context. One is based on the distance of per capita income of a state from the highest per capita income among all states. The other is based on the inverse of per capita income of a state [see, Srivastava and Aggarwal (1994) for a detailed analysis of the properties of these two criteria]. These criteria attempt to reduce post-transfer differences in the fiscal bases of the states through progressive dispensation. The difference between them is that while the distance criterion looks at the absolute resource gaps, the inverse income criterion looks at the relative gaps. Since, in the context of provision of services at equal standards across states, it is the absolute costs (and absolute gaps) that are relevant, successive FCs have (Eighth, Ninth and the Tenth) given more and more weight to the distance criterion. The inverse criterion was given a weight of 25

percent by the Seventh and Eighth Commissions. The Ninth Commission reduced this weight to 12.5 percent. The Tenth Commission dropped it altogether. In the TFC award, the full weight of the income-based criterion was loaded on the distance criterion.

Different Commissions have used the distance criterion with some variations. The term 'distance' refers to the excess of the per capita income of a state (measured by per capita NSDP or GSDP) of the highest per capita income among all states over that of an individual state. If per capita income (hereinafter referred to only as income), of the different state i is indicated by y_i, and states are arranged in non-descending order of income, y_1 will refer to the per capita income of say, Bihar, and y_{28} will refer to the per capita income of Goa. In general,

$$y_1 \leq y_2 \leq \ldots\ldots \leq y_n$$

The corresponding populations of the states are given by $N_1, N_2, \ldots N_n$.

a1. Standard Distance Formula (SDF)

In this version, the share of the ith state can be written as:

$$a_i = N_i(y_n - y_i) / S\, N_i\, (y_n - y_i)\ ; \quad i = 1, \ldots\ldots\ldots, 28$$

The per capita share of the ith state

$$a^*_i = (y_n - y_i) / S\, N_i\, (y_n - y_i)$$

The share of the highest per capita income state will be zero in this standard version. All tax-revenue sharing criteria follow certain normalized procedures to ensure that the sum of the shares adds to 1. For a discussion of the axiomatic basis of the devolution formula, reference made be made to Rangarajan and Srivastava (2008).

The SDF can be diagrammatically represented by a straight line falling to the right, where per capita share of a state is represented on the Y-axis, and per capita incomes on the X-axis.

Letting $\Sigma N_i (y_n - y_i) = 1/\alpha$,

$$a^*_i = a (y_n - y_i)$$

$$a^*_i = a\ y_n - a\ y_i$$

If the total amount distributed under the distance criterion is WT, it can be interpreted as equivalent to a mechanism of delivering fiscal capacity equalization payments subject to the assumption that the bench mark income is y_n. Given average tax effort as ?, per capita entitlement of state 'i' is ? $(y_n - y_i)$.

Total equalization payments are

$$? \Sigma N_i (y_n - y_i) = a\ \Sigma N_i\ a^*_i (y_n - y_i)$$

This determines the required amount under the distance criterion of

$$WT = ? / a$$

$$W = ? / T\ a$$

The distance formula provides higher per capita shares to lower income states. It attempts to bring in the principle of horizontal equity under the assumption of a normative (common) revenue effort. It can be interpreted as a fiscal capacity equalizing formula, where fiscal capacity (y_i) is measured by the (per capita) income (NSDP or GSDP) of a state. If each state makes a revenue effort of the same degree (say, θ), its revenue capacity is given by θy_i. The revenue capacity of the highest income state is θy_n. The difference between these revenue capacities is $\theta(y_n - y_i)$. This gap is filled up, in the distance formula, as a result of which, the post-devolution fiscal capacities are equalized. However, the limiting assumption is that fiscal capacity is reflected in per capita income.

a2. Modified Distance Formula (MDF)

The standard version of the distance formula was modified by some of the FCs with two considerations in mind. First, in the SDF, the highest income state does not get any share, and secondly, a state other than Goa should be chosen as the highest income

state for purposes of measuring distances. Goa has a small population and high income, and the Commissions have opined that this is not "representative" of a typical high income state. These two considerations were brought into the formula by measuring distances from Punjab rather than Goa, giving "notional distances to both Punjab and Goa equal to the distance between Punjab and Maharashtra". Thus three states get the same distance in the formula, *viz*., Punjab, Maharashtra and Goa.

Dividing the shares can derive the per capita shares under MDF by the respective populations. The modified formula implies a "kink" in the dispensation line because the per capita shares of the three states at the higher income end become equal. It also implies a higher per capita income share for a few states at the low income end, as compared to the SDF.

The Eleventh Finance Commission has further modified this formula. Rather than measuring the distances from the per capita income of any single state, it has defined the benchmark income from which distances are to be measured as the weighted average of the per capita GSDPs of the three highest income states, *viz*., Goa, Maharashtra and Punjab. Once the benchmark income is available (say, y^*), the distance of each state (d_i) outside the highest income group are calculated as,

$$d_i = y^* - y_i \qquad i = 1, \ldots, 22$$

Here y^* is the population weighted average of the three highest income states. With 25 states at the time and states being arranged in non-descending order of per capita income, the three highest states may be indicated by subscripts 23, 24, and 25.

Thus $y^* = (N_{23}.y_{23}+N_{24}.y_{24}+N_{25}.y_{25}) / (N_{23}+N_{24}+N_{25})$

The notional distances of the three highest income states (d^*) are calculated as fractions of the next highest income state (y_{22}) distance of Haryana are calculated in the following way

$$d^*_i = (y^* - y_j) . (y_j / y_i) \qquad j = 22; \quad i = 23, 24, 25$$

The Twelfth Finance Commission followed a similar modification using the average of the three highest per capita GSDP (Goa, Maharashtra, and Punjab) except that we now have 28 states and $j = 25$ and $i = 26, 27, 28$ in the above formula.

a3. Augmented Distance Formula (ADF)

The consideration of giving a positive share to the highest income state can also be taken care of by measuring distances from a level higher than the y_n, the highest per capita income. Let this point of reference be $y_n + z$ where z is a positive amount. In this case, the 'augmented' distance formula can be written as

$$a^*_i = (z + y_n - y_i) / \Sigma N_i (z + y_n - y_i)$$

The ADF requires determination of the value of z. The Eleventh Finance Commission has used this criterion while determining shares of states in the context of grants for local bodies. The value of z has been taken as half the standard deviation of the per capita GSDP of states.

While no Finance Commission has used this formula, it can be shown that the ADF is equivalent to a weighted combination of the population and the standard distance criteria.

a4. Censored Distance Formula (CDF)

In this case, a censored income distribution may be derived as fallows

Actual distribution $y_1 \leq y_2 \leq y_i \leq y_{i+1}, \ .... \leq \ y_n$

Censored distribution $y_1 \leq y_2 \leq ....y_k \leq y^* = ...= y^*$

This implies that some of the high income states with per capita incomes above the threshold will get the same notional distance or per capita share. For example, the Eighth Finance Commission gave the same distance to Punjab and Haryana. The Ninth Finance Commission gave the same notional distance to Goa, Punjab, and Maharashtra.

b. Inverse Income Formula (IIF)

The inverse income formula looks at `relative' fiscal deficiencies. Let the average tax effort (tax revenue of all states divided by the aggregate tax base of all states) be indicated by θ. If the revenue capacity on a common revenue effort is $\theta\ y_n$, relative to it, the revenue capacity of a state i, is $\theta\ y_i$, and the relative deficiency is given by $\theta\ y_n / \theta y_i$ ($= y_n / y_i$). The share of a state (b_i) under this formula is given by

$$b_i = (N_i/y_i)/\Sigma(N_i/y_i) \ ; \qquad\qquad i = 1, \ldots, n$$

Let $\Sigma(N_i/y_i) = 1/\beta$ Then, the per capita share of a state (b^*_i) can be written as

$$b^*_i = \beta / y_i \ \text{ or } b^*_i\, y_i = \beta$$

The inverse income formula can be thus represented in a diagram by a rectangular hyperbola where per capita share is represented on the Y-axis and per capita incomes on the X-axis.

c. Population Formula: Criterion Providing Equal Per Capita Transfers

The population criterion provides equal per capita transfers to all states. A scheme of equal per capita transfers is a valid scheme if there are no resource and cost-differentials across states. It can be shown that the (standard) distance criterion will converge to the population criterion, as the per capita incomes of the states become more and more equal (see Srivastava and Aggarwal, 1994). Since the population criterion provides equal per capita transfers, it is indifferent (or neutral) to differences in the fiscal capacities of states. It is, therefore, useful as a benchmark for considering the departures from this neutrality in other criteria. For this reason, dispensation under the population criterion is often used for purposes of comparison.

Distribution according to population means that the share of a state in tax devolution would be equal to the share of the population of this state in the total population of all states. Indicating population of a state i by N_i, where i varies from 1 to n

where n is the number of states, the shares of individual states (q_i) in the population formula can be written as

$q_i = N_i/\Sigma N_i$ and the per capita shares are given by

$q^*_i = 1/\Sigma N_i$ = Constant

d. Criteria Reflecting Cost Disadvantages

Indices relating to area and infrastructure reflect cost disadvantages to state governments in providing services to its citizens. The larger the area of a state, the higher is the per capita cost of providing services. Similarly, the weaker the infrastructure of a state, the larger is the costs of providing services. This index is used to indicate relative deficiency in infrastructure. A state, which is, relatively more deficient in infrastructure has been given a higher share in per capita terms by the Tenth and Eleventh Finance Commissions. The deficiency in infrastructure indicates (i) extra costs in providing governmental services, and (ii) extra resource requirement to improve infrastructure and delivery systems. In the measurement of infrastructure, social infrastructure (e.g., health and education) expenditure has a large revenue component.

An index of infrastructure was especially constructed for the Tenth Finance Commission by a commissioned study carried out by a team of experts (Anant, Krishna, and Roy Chaudhry, 1994) was updated for the Eleventh Finance Commission as well as Twelfth Finance Commission. In these studies, the aggregate infrastructure index is a weighted combination of economic and social infrastructure indices. In turn, economic infrastructure index and social infrastructure index are weighted combinations of a number of sub-indices. For economic infrastructure, the main sectors are agriculture, communication, banking, electricity and transportation including roads. For social infrastructure, the main sectors are health and education. The sectoral indices are in turn constructed by weighted combinations of the sub-indices. Given the series of infrastructure index (I_i), the shares of states may be worked out from

$$s_i = \frac{N_i(I_h - I_i)}{\Sigma N_i(I_h - I_i)}$$

Where, I_h is the highest reading of index among the states, and I_i is the index value for state i. The EFC had used the weighted average of I_i's for the three highest index states and used the indices for deriving shares of individual states in a manner similar to one used for the distance formula.

e. Criteria for Performance/Incentives

Two Fiscal performance indicators have been used by the recent Finance Commission: (1) Index of tax effort, and (2) Index of fiscal discipline. The index of tax effort was meant to serve as an incentive for improving tax effort. In this scheme, a state, which shows higher tax revenue per unit of tax-base, gets a higher share in tax devolution. The basic conceptual issue is that of measurement of tax effort. Tax effort needs to be measured by relating tax revenues to tax potential. Measurement of tax potential (taxable capacity) usually requires an elaborate econometric exercise. Since many of the determinants of taxable capacity are not directly observable or adequate data regarding which are not readily available, often dummy variables and proxy measures are necessitated in such an exercise. As already noted, in criteria-based revenue sharing, criteria should be based on information compiled on a comparable basis. The approach of the Finance Commission has been to let the tax base of states be proxied by GSDP. Using the ratio of per capita tax revenue (r) to per capita GSDP (y), as reflecting tax effort, the share of a state was defined as:

$$s_i = N_i\ w_i\ (r_i / y_i)/[\Sigma N_i w_i (\tfrac{r_i}{y_i})]; \qquad i = 1, \ldots, n$$

The weight w_i was set equal to $1/y_i$ by Tenth Finance Commission, and $1/\surd y_i$ by the Eleventh Finance Commission. Substituting these weights, the two formulae can be written as

$$s_i = [N_i\ r_i / y_i^2] / \Sigma(N_i\ r_i / y_i^2) \qquad (Tenth Finance Commission)$$

The weights were set as related to inverse of income, arguing that if two states

$$s_i = [N_i \; r_i / y_i^{1.5}] / \Sigma(N_i \; r_i / y_i^{1.5}) \qquad (\textit{Eleventh and Twelfth Finance Commissions})$$

show the same tax-effort, the poorer state among the two, is the more constrained, and should get a relatively higher share. Factors which constitute genuine constraints in the exploitation of the tax-base can in general be used to set these weights. Such constraints could be below average level of development and distribution of income, which may favour consumption of a basket of necessities that bear low rates of taxes. In general, the weighting scheme can be a function of income and parameters reflecting the distribution of income.

f. Criterion Related to Improvement in Fiscal Performance

The criterion on tax effort looks only at the tax revenues. However, in order to bring expenditures into analysis, the Eleventh Finance Commission constructed an index of fiscal discipline for use within the devolution formula. The index of improvement in fiscal performance was defined with reference to achieving improvement in revenue balance. The ratio of revenue receipts to revenue expenditure may be called z_i for the state i in the reference year. In the base year, this may be referred to as z^o_i. The corresponding ratios for the all state average may be called as Z_a and Z^o_a. The index of improvement in fiscal performance is given by

$$I_i = [\, z_i / z^o_i] / [Z_a / Z^o_a] \qquad i = 1, 2, \ldots\ldots, n$$

The better is the performance of a state in achieving revenue balance relative to others, the higher is its share in devolution. The respective shares are determined by

$$s_i = N_i \, I_i / \Sigma N_i \, I_i$$

1.5 Aggregate Share of States in Central Taxes: First to Twelfth Commissions

Comparing changes in the shares of individual states for the entire period from the First to the Twelfth Finance Commissions is difficult because of the shift from the earlier practice of sharing the revenues of individual taxes to the present practice of sharing all central tax revenues subject to some adjustments. In order to make such a comparison we need to settle on a common denominator and rework share of states with respect to this. For this purpose it is idle to take centre's gross tax revenues as the common denominator. Since the actual shares whether with respect to individual taxes or a divisible over pool of central taxes are given as shares and not absolute amounts, we need to rework the absolute amounts and then determine the shares as percentage of centre's gross revenue tax receipts. Here, there are two options. One, we may take the estimated absolute amounts of the states tax shares as provided by the Finance Commissions themselves. These would amount to a weighted share of the shared taxes as envisaged in the Commissions scheme of distribution. The second option is to take the actual share of states in the central taxes in absolute amounts. There would still continue to be some difficulty in comparison over time because of re-organisation of states from time to time.

Table 1.5 gives a comparative picture of shares in central taxes from the First to the Twelfth Finance Commission based on the estimated absolute amounts given by the Commissions themselves. Looking at individual shares it will be observed that there are some stable patterns and some volatile patterns. The share of the general category states which used to be as high as 97.3 percent came down to about 86.5 percent in the award period of the Tenth Finance Commission and has risen to about 91.8 percent for the Twelfth Finance Commission period. Correspondingly, the share of special category states has also changed. It was at the highest for the Tenth Finance Commission period 13.5 percent but fell to a range of 7-8 percent during the Eleventh and Twelfth Finance Commission periods. The larger shares for the Eighth, Ninth, and Tenth Finance Commission periods out of tax devolution were because of the practice of earmarking a certain percentage of the states' share of the Union Excise duties for distribution amongst states in proportion of 'assessed' deficits. This practice amounted to giving grants

through tax devolution and was given up by the Eleventh Finance Commission. Particularly because with the 80th amendment and pooling of central taxes for sharing with the states, Union excise duties could not be treated differently. These changes do not however necessarily reflect any erosion in their share of total transfers because the assessed deficits of the special category states were to be fully given as grants. This is discussed further in Chapter 2.

For individual states some observations can be made as below.

a. For Andhra Pradesh the share in gross central tax revenues has ranged between 7.2 - 8.2 percent.
b. For Bihar the share has been stable from the period of Fifth Finance Commission in the range of 10.4 - 11.7 percent with an exception of the Eleventh Finance Commission period when it had increased to 14.6 percentage points.
c. For Gujarat there was steady erosion in its share from a peak of 6 percent in the Third Finance Commission period to a low of 2.8 percent by the Eleventh Finance Commission. In the Twelfth Finance Commission period it increased to 3.6 percent.
d. A similar pattern is observed for Maharashtra. Its share has fallen from 12.9 percent in Second Finance Commission period to a low of 4.6 percent by the time of the Eleventh Finance Commission, and it has increased to 5 percent in the Twelfth Finance Commission period.
e. The share of Uttar Pradesh was around 16.7 percent in the Second Finance Commission period. It has remained around this level upto the Ninth Finance Commission period and has increased to above 19 percent in the Eleventh and Twelfth Finance Commissions.

Table 1.5: State-wise Share in Central Taxes and Duties Recommended by the Finance Commission (based on State's Share of Central taxes as proportion of Total Gross central Taxes as estimated by the Respective Commissions)

(Percentage Share)

State	First	Second	Third	Fourth	Fifth	Sixth
	1	2	3	4	5	6
General Category States						
Andhra Pradesh	4.80	8.22	7.88	7.56	7.55	8.03
Bihar	11.75	8.71	9.34	9.11	11.05	10.40
Chhattisgarh	0.00	0.00	0.00	0.00	0.00	0.00
Goa	0.00	0.00	0.00	0.00	0.00	0.00
Gujarat	0.00	4.20	6.02	5.58	5.01	5.19
Haryana	0.00	0.00	0.00	1.57	1.64	1.70
Jharkhand	0.00	0.00	0.00	0.00	0.00	0.00
Karnataka	1.04	5.11	5.08	5.15	4.98	5.40
Kerala	0.39	3.43	4.08	3.87	3.98	3.82
Madhya Pradesh	6.29	6.63	7.01	6.78	7.45	7.66
Maharashtra	18.75	12.90	11.20	11.88	10.57	10.02
Orissa	4.23	3.53	4.52	3.98	3.97	3.84
Punjab	4.05	4.78	5.53	2.93	2.46	2.38
Rajasthan	3.79	4.17	4.61	4.44	4.64	4.70
Tamil Nadu	11.39	8.56	7.48	7.90	7.56	7.59
Uttar Pradesh	18.81	16.63	13.87	14.86	16.77	16.20
West Bengal	11.99	9.33	8.78	8.94	8.17	8.28
Total	**97.29**	**96.19**	**95.40**	**94.54**	**95.79**	**95.21**
Special Category States						
Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	0.00
Assam	2.71	2.69	3.24	2.89	2.39	2.61
Himachal Pradesh	0.00	0.00	0.00	0.00	0.49	0.61
Jammu & Kashmir	0.00	1.13	1.29	1.51	0.91	0.83
Manipur	0.00	0.00	0.00	0.00	0.07	0.19
Meghalaya	0.00	0.00	0.00	0.00	0.17	0.18
Mizoram	0.00	0.00	0.00	0.00	0.00	0.00
Nagaland	0.00	0.00	0.07	1.05	0.08	0.10
Sikkim	0.00	0.00	0.00	0.00	0.00	0.00
Tripura	0.00	0.00	0.00	0.00	0.11	0.28
Uttaranchal	0.00	0.00	0.00	0.00	0.00	0.00
Total	**2.71**	**3.81**	**4.60**	**5.46**	**4.21**	**4.79**
Grand Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Table 1.5 (contd.): State wise Share in Central Taxes and Duties Recommended by the Finance Commission

(Percentage Share)

State	Seventh	Eighth	Ninth (1)	Ninth (2)	Tenth	Eleventh	Twelfth
	7	**8**	**9 (1)**	**9 (2)**	**10**	**11**	**12**
General Category States							
Andhra Pradesh	7.81	7.72	7.20	7.48	7.91	7.70	7.36
Bihar	11.18	11.23	11.65	11.00	11.29	14.60	11.03
Chhattisgarh	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Goa	0.00	0.00	0.21	0.39	0.25	0.21	0.26
Gujarat	5.01	3.97	3.58	3.86	3.88	2.82	3.57
Haryana	1.60	1.20	1.16	1.29	1.24	0.94	1.08
Jharkhand	0.00	0.00	0.00	0.00	0.00	0.00	3.36
Karnataka	5.23	4.80	4.75	4.51	4.86	4.93	4.46
Kerala	3.98	3.53	3.43	3.32	3.50	3.06	2.67
Madhya Pradesh	7.98	7.81	7.72	7.44	7.40	8.84	6.71
Maharashtra	8.91	7.33	7.30	6.87	6.23	4.63	5.00
Orissa	4.24	4.38	4.32	4.85	4.26	5.06	5.16
Punjab	2.18	1.71	1.56	1.72	1.53	1.15	1.30
Rajasthan	4.59	4.31	4.88	5.25	4.97	5.47	5.61
Tamil Nadu	7.68	6.85	7.12	6.84	6.12	5.39	5.31
Uttar Pradesh	16.65	16.58	17.37	15.79	16.25	19.80	19.26
West Bengal	8.18	7.90	7.23	7.12	6.84	8.12	7.06
Total	95.22	89.32	89.49	87.73	86.54	92.70	91.83
Special Category states							
Arunachal Pradesh	0.00	0.00	0.55	0.60	0.66	0.24	0.29
Assam	2.58	3.51	3.43	3.38	3.42	3.28	3.24
Himachal Pradesh	0.57	1.49	1.19	1.44	1.81	0.68	0.52
Jammu & Kashmir	0.83	2.07	2.01	2.52	2.86	1.29	1.30
Manipur	0.20	0.84	0.64	0.81	0.82	0.37	0.36
Meghalaya	0.19	0.68	0.51	0.64	0.74	0.34	0.37
Mizoram	0.00	0.00	0.62	0.73	0.68	0.20	0.24
Nagaland	0.09	0.91	0.62	0.89	1.06	0.22	0.26
Sikkim	0.00	0.18	0.12	0.18	0.27	0.18	0.23
Tripura	0.31	1.00	0.83	1.09	1.13	0.49	0.43
Uttaranchal	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Total	**4.78**	**10.68**	**10.51**	**12.27**	**13.46**	**7.30**	**8.17**
Grand Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Reports of Finance Commissions, Government of India.

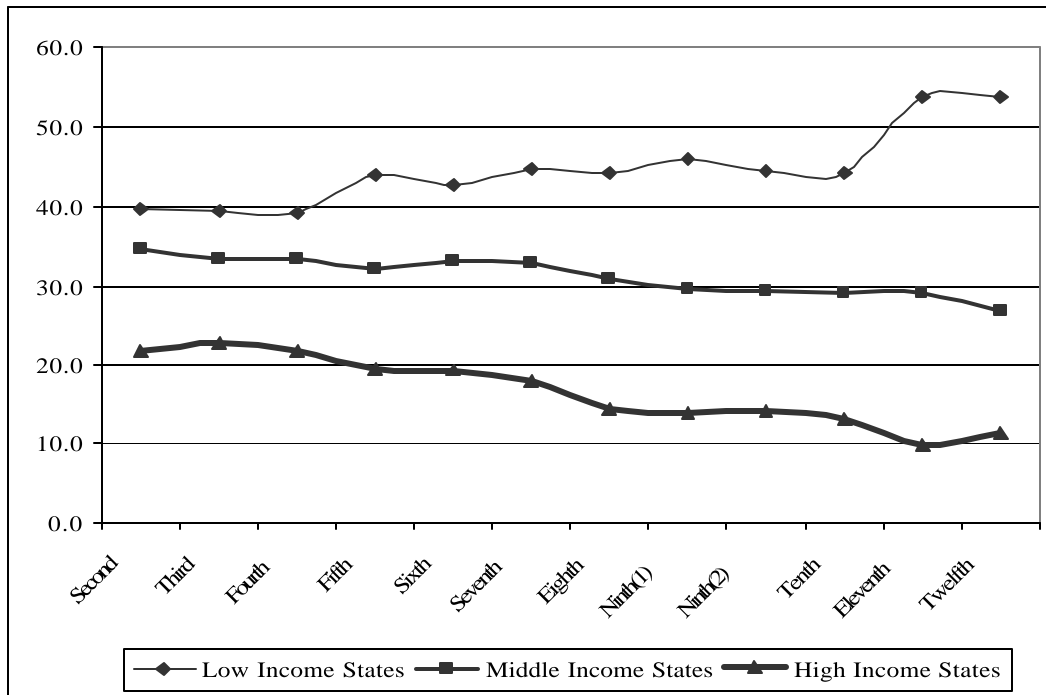

Chart 1.1: Share of High, Middle, and Low Income States in Tax Devolution

Looking at the shares of the three groups of states within the general category states, i.e. high income, middle income and low income states., the general pattern seems to be that as we come to the more recent Commissions while the share of middle income states has fallen slightly, the share of low income states has increased largely at the cost of the high income states (Chart 1.1). For the sake of comparability, Jharkhand and Chhattisgarh are included in the group of low income states after bifurcation. This could be interpreted as the outcome of introduction of more equalizing principles particularly after the Seventh Finance Commission whereas for the earlier Commissions, the reliance was far more on factors such as population for the inter se determination of state shares. In their cases, the criteria were such that the horizontal objective was weaker and most transfers were for used for meeting vertical imbalance. In addition, the income equalities have also progressively grown across states implying larger shares for lower income states even if the same priority is attached to the horizontal equalization principle.

1.6 Conclusions

Over the period covered by Twelve Finance Commissions, the principles and practices governing the sharing of central taxes with the states in India have constantly evolved. The following points can be highlighted:

1. Sharing of central taxes with the states has changed such that the earlier narrower base where there was only one tax assigned for mandatory sharing has now been broadened to cover all central taxes except earmarked cesses and surcharges and Article 268/269 taxes (including the service tax).
2. Prior to the 80th amendment to the Constitution, the Union excises duties were sharable with the states under the discretion of the central government. The scope of the sharable amount of the proceeds steadily increased to cover from a few to all items under Article 272. Historically, the distinction between Article 270 and 272 led the earlier Finance Commissions to use the sharing of income taxes far more as an instrument of vertical transfers and the sharing of Union excise duties as a tool of horizontal equity.
3. Over time the criteria for determining the *inter se* shares of the states converged. A broad base of central taxes was to be shared and all taxes were shared using the same set of criteria.
4. With this, the need to use sharing of taxes as a tool for achieving both the vertical and horizontal objectives became important through a suitable selection of criteria and weights.
5. The analytical properties of criteria currently being used by the Finance Commissions is such that the population criteria is a suitable instrument of vertical transfers and the distance criterion can serve to achieve equalization. Area and infrastructure are criteria reflect cost disadvantages while criteria of tax effort and fiscal discipline work as incentives.
6. Under certain assumptions, the distance criterion can be used to achieve equalization. For fiscal capacity equalization, the amount of total transfers required depends on the average tax-GSDP ratio and the distributions of populations and per capita GSDPs. These can be used to determine a suitable weight to the distance criterion rather than determining it arbitrarily as has been the case with the Finance Commissions so far.
7. Empirical trends indicate that the share of the special category states as a group has been roughly in line with their share of population. For the Seventh to the Tenth Finance Commissions they got a relatively larger share as part of the sharing of Union excise duties was on the basis of assessed deficits that are otherwise given as grants.

8. For the Tenth, Eleventh, and Twelfth Finance Commissions, the share of special category states in central taxes is still higher than their share in population because of the use of a 'floor' in the index of 'area'.
9. The share of the general category states in total tax devolution was as high as 97.3 percent under the scheme suggested by the First Finance Commission. It came down to about 86.5 percent in the award period of the Tenth Finance Commission and has risen to about 91.8 percent for the Twelfth Finance Commission period.
10. Among the general category states, looking at high income, middle income and low income states as groups, the general pattern seems to be that as we move to later Commissions the share of low income states has increased while the share of middle income states and the high income states fell. This could be interpreted as the outcome of introduction of more equalizing principles particularly after the Seventh Finance Commission. This reflects both growing inter-state income equalities and greater emphasis on equalization by the more recent Finance Commissions.

As discussed, the distance formula can serve as a tool for fiscal capacity equalization, subject to some assumptions. The population formula is a tool for vertical transfers. These two alone can provide a suitable scheme of fiscal transfers, provided the weights are suitably determined.

Cost considerations are best taken account of through grants. The case of including index of fiscal discipline in the context of the Thirteenth Finance Commission is weak as the States (except for two states) have enacted their respective Fiscal Responsibility Legislations.

Chapter 2

Overview of Grants: Principles and Empirical Trends

2.1 Introduction

Apart from tax revenue sharing, the main alternative channel of fiscal transfer available to the Finance Commission is grants-in-aid of revenues of the states under Article 275 of the Constitution. Under the provisions of this article, grants that have come to be known in the literature as 'revenue-gap' grants are given. The determination of these grants follows from two exercises carried out by the Finance Commissions: One, assessment of expenditures of each state on revenue account (non-plan or total), and two, assessment of own revenues. Once tax devolution to each state has been determined, grants-in-aid are determined as a residual, which is the difference between the assessed expenditure and the sum of the projected own revenues and shares in central taxes. In other words, grants-in-aid under the Finance Commission are meant to fill up a 'gap' which represents expenditure not covered either by own revenues or share in central taxes. The main issue here is as to whether this gap should be projected on the basis of historical trends or by an assessment of expenditures and revenues on a normative basis. It is clear that if historical basis is followed, it will give rise to strong adverse incentives where it will be to the benefit of each state to maximize their histories of expenditures and minimize their histories of raising revenues. On the other hand, if the gap is determined strictly on normative bases, such an adverse incentive will not be present.

2.2 Constitutional Provisions: Principles and Scope

In relation to grants, there are two duties cast upon the Finance Commission conjointly by Articles 280(3) (b) and 275. Article 280(3) (b) requires the Commission, to make recommendations as to the "principles" which should govern such grants-in-aid. Following from Article 275(1), specific "sums" are to be recommended to be paid to the States which are assessed to be in "need of assistance". It is significant to note that while Article 270 (for division of taxes) speaks of percentage share, Article 275 refers to

specific 'sums'. The Constitution prescribes that these grants are to be 'charged' on the Consolidated Fund of India and have to be recommended by a Finance Commission.

The First Finance Commission had considered the 'principles' of determining grants at length and had opined that both unconditional and specific purpose grants can and should be considered by the Finance Commission under the Article 275 read with Article 280(3)(b). They had observed that the scope of these articles should not be limited solely to grants-in-aid which are completely unconditional and grants that could be directed to well defined purposes can also reasonably be considered as falling within the scope of the Article 275.

The First Finance Commission recommended the following principles for determining grants-in-aid under Article 275:

a. Budgetary Needs: The Commission observed that budgetary needs are an important criterion for determining … of the amount of the grants-in-aid, ….. , several adjustments are however necessary …… (to) to reduce all budgets to a comparable basis.

b. Tax Effort: The Commission observed that it is not enough to just consider the comparative poverty or affluence of the states as judged by indices of their relative per capita incomes but it also important to take into account the relative tax efforts of the states. This seems to the first mention of normative principle were fiscal capacity and tax effort are mentioned as key determinants of grants-in-aid.

c. Economy in Expenditure. The Commission observed that allowance should be made for possibilities of economy in expenditure. The Commission observes "the method of extending Finance Commission Assistance should be such as to avoid any suggestion that the Central Government have taken upon themselves the responsibility for helping the states to balance their budgets from year to year. If the amount of grants-in-aid were to be merely in proportion to the financial plight of a state, a direct premium may be placed on impecunious policies and a penalty imposed on financial prudence". This seems to be the first clear and explicit caution against following any gap filling approach.

d. Standard of Social Services: The Commission observes "an important purpose of grants-in-aid is to help in equalizing standards of basic social services". This is the first mention of equalization in respect of basic social services.

e. Special Obligations: The Commission mentioned that certain states may have special obligation or burdens likely to continue for a period of years, i.e. commitment arising out of abnormal conditions. They mention as examples of abnormal conditions: strain on the economy and administration and increase responsibility with respect of security.

f. Broad Purposes of National Importance: The Commission favored that grants may be given to further any service of primary importance in which it in the national interest to assist the less advanced states.

It is clear therefore, that the First Finance Commission explicitly stated the best theoretically accepted principles that had emerged in literature for guiding the determination of fiscal transfers. The First Finance Commission recommended specific purpose grants for primary education. The Second Commission had observed that grants-in-aid should be a residuary form of assistance given in the form of general and unconditional grants. However, they also agreed that grants for broad purposes may be given and in respect of these, States should be under obligation to spend the whole amount in furtherance of the broad purposes indicated. The Third Finance Commission gave specific purpose grants for improvement in communications.

Most of the subsequent Commissions had generally agreed to the principles listed by the First Commission but they had all proceeded to primarily recommend unconditional revenue gap grants. In addition, some earmarked grants were recommended for special problems, up-gradation of services and local bodies. However, as most resources are fungible and even if purposes are specified, States may continue to spend according to their own priorities by reducing normal allocations on the specified heads.

The Seventh Finance Commission (1978), while recommending grants-in-aid for up-gradation of standards of administration, felt that grants should be made for meeting capital expenditure as well. The Commission noted that the grants made under revenue account did not make adequate provision for administrative and residential buildings. As this expenditure has to be on the capital account, the Commission felt that capital expenditure should also be provided for. Accordingly, the Seventh Finance Commission noted that it should recommend capital grants and found that there was an implicit and inherent provision for making capital grants, notwithstanding the fact that the proviso was specifically outside the reach of the Commission, under the terms of reference. The Commission stated:

> "We have given careful consideration to the scope for grants-in-aid under Article 275 for meeting capital expenditure. The operative part of this article

> speaks of "sums". There is no restriction or bar in the article against making grants for capital expenditure. The first proviso of the article expressly speaks of grants of capital sums. This goes to show that the expression grants-in-aid of revenues do not limit grants to revenue expenditure only. We are fortified in this view by the Note of the Chairman of the Fourth Finance Commission appended to its Report on the interpretation of Article 275. Further, it seems unreasonable to hold that the operative part of the article enables the Commission to make grants for revenue expenditure only, while the proviso enables grants being made for revenue as well as capital nature. It is quite clear therefore that it is open to us to recommend grants for capital expenditure also, apart from grants for revenue expenditure under Article 275" (Para 8 of Chapter 10 of the Report).

The grants recommended by the Seventh Finance Commission for capital purposes amounted to Rs. 908.80 crore, while those for revenue purposes aggregated to Rs. 1490.65 crore for 15 States for the five years of its Report, i.e., a significant portion of total grants was for capital expenditures. These recommendations were accepted. It is important to mention that all the grants recommended by a Finance Commission are under the substantive portion of Article 275(1).

In principle, Article 275(1) makes no restriction as to whether needs should be considered only on revenue account, and further only on the non-plan revenue account. There has been a running debate for some time as to whether the whole revenue account or only the non-plan revenue account should be considered by the Finance Commission. There is no restriction in the constitutional provision in this regard. In fact, the term "grants-in-aid of the revenues" does not imply that consideration should only be of revenue expenditures, i.e., current expenditure. Revenues of the States are meant to be spent both on current and capital needs, and there is no constitutional restriction as to what needs should be considered and what should not be considered by the Finance Commission. Further, the distinction between plan and non-plan expenditures has not been made anywhere in the Constitution. Article 112 makes a reference to expenditure on 'revenue' account to be distinguished from 'other' expenditures.

Within the domain of grants, another critical issue relates to the possibility and desirability of recommending conditional/specific purpose grants, and determining the appropriate proportion between the conditional and unconditional grants. For conditional

grants the relevant purposes and associated conditions also need to be specified along with an effective monitoring mechanism.

The distinction between non-plan versus plan revenue expenditure became material with a minute of dissent given by the Member-Secretary of the Third Finance Commission (1961). The Third Finance Commission took into account the needs of the States for the 3rd Five Year Plan and recommended by a majority that the quantum of grants-in-aid should be fixed in such a way as to enable the States, along with any surplus out of devolution, to cover 75 percent of the revenue component of their plans. In determining the revenue component, the Commission deducted the amount of additional tax to be raised by each State as incorporated in the plan itself. The Commission also recommended special grants to 10 States for the improvement of road communications. The recommendations on the first item, were not accepted by the President but those on the second, were accepted. Asok Chanda, Chairman of Third Finance Commission, observed: " … the Planning Commission did not take kindly to the basic scheme or suggestions of the Commission. It was not unexpected therefore that the Member-Secretary of the Commission who was an official, should take the unusual step of appending a note of dissent, nor was it strange that government used this note for rejecting this particular recommendation" (Federalism in India: 1965, p. 222).

Later, the consideration of needs of revenue expenditure on the plan account was excluded from the purview of the Finance Commission by stipulations in the terms of reference (TOR). The Fourth Finance Commission was asked in their TOR to consider 'the requirements of those States to meet the committed expenditure on maintenance and upkeep of plan schemes completed during the Third Plan'. The TOR of Fifth Finance Commission provided that 'the requirements on revenue account of those States to meet expenditure on administration, interest charges in respect of their debt, maintenance and upkeep of plan schemes, transfer of funds to local bodies and aided institutions and other committed expenditure' should be a relevant consideration. A similar reference was made to the Sixth Finance Commission except that they were also asked to take into account provision for emoluments of Government employees, teachers and local body employees.

The word 'non-plan' entered in the TOR of the Finance Commission for the first time in the TOR of the Seventh Finance Commission. Para 5(iv) of their TOR made reference to "the requirements on revenue account of those States to meet the expenditure on administration and other *non-plan commitments or liabilities* …" A similar reference was there in the TOR of the Eighth Finance Commission. The TOR of Ninth FC were so framed that the option was open for the Commission to take the plan revenue requirements if the Commission so desired. The TOR of the Tenth Finance Commission again restricted the ambit of consideration to the non-plan account. In the case of the Eleventh Finance Commission, both non-plan and plan revenue requirements were referred to explicitly. However, the Eleventh Finance Commission considered the revenue requirement only on the non-plan account. For the Twelfth Finance Commission, reference has been made to the entire 'revenue' account in Para 6(iv), which specifies the 'objective of not only balancing the receipts and expenditure on **revenue account** of all the States and the Centre, but also generating surpluses for capital investment and reducing fiscal deficit'. This clause corresponds to the relevant clause in the TOR of the Ninth Finance Commission but not to comparable clauses in the TOR of the Tenth and the Eleventh Finance Commissions.

It is open to the Finance Commission, therefore, to take into account the entire 'revenue expenditure' of the Centre and the States. The methodology of assessment of expenditures will have to be determined including the issue as to whether non-plan and plan expenditures are derived separately or in sequence or the total revenue expenditure on an expenditure head is derived with reference to some objective criterion, standard or benchmark.

2.3 Considerations Arising from the Terms of Reference

A typical para in the TOR of the Finance Commissions (at least the recent ones) make reference to the resources of the central government and the demands on those resources. "Resources of the central government have to be assessed on the basis of levels of taxation and non-tax revenues likely to be reached at the end of a specific base

year". A reference of this nature has been made to successive Finance Commissions since the Fifth Finance Commission. However, the phrase 'levels' of taxation and non-tax revenues requires to be further analyzed. Levels in absolute terms may not mean much in the present context. Levels in relation to respective tax and non-tax bases imply a certain relationship. If the tax and non-tax bases grow, tax and non-tax revenues would also grow, if this relationship is held constant. But, these would also grow because of additional revenue effort, modification of tax-rates, withdrawal of exemptions and other reforms. The TOR makes reference to the demands on central resources by the central government. Particular references have been made to expenditure on civil administration, defence, internal and border security, debt servicing and other committed expenditures and liabilities. The items listed for particular reference relate mainly to interest payments and pensions as committed liabilities and other general services including defence and border security. This TOR necessitates that Finance Commissions mane an assessment of centre's resources (tax and non-tax) as well as expenditure claims on these resources. It is not possible to apply any norm of performance as centre is a 'single' unit with no other comparable unit in the system. Only some prescriptive adjustments can be applies.

Although most of the recent Commissions have made an attempt not to simply use historical growth rates of revenues or expenditures in their assessments, the assessments are still driven by a number of historical parameters, which are often subjected to modifications with a view to introducing an element of prescriptive benchmarks or norms. An explicit reference as to the use of a normative approach was made for the first time to the Ninth Finance Commission by including in their TOR the following:

"In making its recommendations, the Commission shall:

(i) adopt a normative approach in assessing the receipts and expenditures on the revenue account of the States and the Centre and, in doing so, keep in view the special problems of each State, if any, and the special requirements of the Centre such as defence, security, debt servicing and other committed expenditure or liabilities;

(ii) have due regard to the need for providing adequate incentives for better resource mobilization and financial discipline as well as closer linking of expenditure and revenue raising decisions;

(iii) take into account the need for speed, efficiency and effectiveness of Government functioning and of delivery systems for Government programme; and

(iv) keep in view the objective of not only balancing the receipts and expenditure on revenue account of both the States and the Centre, but also generating surpluses for capital investment …"

A direct reference to a normative approach in the TOR has not been made for the subsequent Commissions. Economists have frequently criticized the determination of transfers based on gaps derived from historical trends of expenditures and revenues due to their adverse incentives, where States find that it is to their advantage to maximize this gap by having a history of low revenue effort and profligate expenditures. Such an approach has been referred to as the 'Gap Filling Approach' (GFA). In this context, the Commission will have to deliberate on the general principles of assessment and the application of norms or prescriptive parameters and the considerations on which these may be based.

2.4 Determining Revenue Gap Grants: Overview of Methodology

The revenue gap grants are the main grants given under Article 275. Here we undertake an overview of the methodology of estimating the revenue-gap grants for the Ninth, Tenth, Eleventh and Twelfth Finance Commissions. Given that the terms of reference of the Commission themselves indicate the base year, the methodology involves estimation of the relevant variables for the base year, which are then taken forward for the recommendation years, using different growth rates.

The broad methodology can be described as below. The following symbols are used:

G^t_i = Revenue gap grant for state 'i' in period 't'

otr^t_i = Own tax revenue for state 'i' in period 't'

$ontr^t_i$ = Own non tax revenue for state 'i' in period 't'

e^t_i = Revenue (non-plan revenue) expenditure of state 'i' in period 't'

scr^t_i = Share in central taxes of state 'i' in period 't'

Revenue gap grant for period 't' can be defined as follows

$$G^t_i = e^t_i - otr^t_i - ontr^t_i - scr^t_i$$

$$e^t_i = e^o_i (1 + g^e_i)^t ,$$

where g^e_i is the growth rate of expenditure (relevant category) of the ith state.

$$otr^t_i = otr^o_i (1 + g^{tr}_i)^k , \qquad [g^{tr}_i = b^{tr}_i \cdot g_i]$$

Where b^{tr}_i is the buoyancy of the concerned tax revenue category for the ith state and g_i is the GSDP of the ith state.

$$ontr^t_i = ontr^o_i (1 + g^{ntr}_i)^k$$

Where g^{ntr}_i is the growth rate of non-tax revenue (for the relevant category) for the ith state.

$$scr^t_i = [s_i] [ctr]^t$$

Where s_i is the share of the ith state in the shareable pool of central taxes [ctr]

$$(ctr)^t = (etr^o) (1 + g^{ctr}) \qquad [g^{etr} = b^{ctr} \cdot g]$$

Where b^{ctr} is the buoyancy of central taxes with respect to GDP and g is the growth rate of GDP.

A revenue-gap grant is recommended if

$G^t_i > 0$, $G^t_i = 0$, if it is estimated to be equal to zero or negative.

Methodologically, for estimating the revenue gap grants two steps are involved. One, to estimate the relevant quantities of expenditure, own tax revenue, own non-tax revenue, and state's share in central taxes for the base year. Second, all these are to be projected forward for the recommendation period. For the base year, available information may relate to budget or revised estimates of the concerned state governments and also projections submitted by the concerned state governments. Calculation of the revenue gap based on this information would amount to subscribing to the existing pattern of expenditures and revenues. Should the Finance Commission accept the numbers given by the state budget/revised estimates and/or projections, the likely gap would be too large

and the implied incentives will be extremely adverse. Finance Commissions had therefore followed a methodology, which adjusts the concerned variables in the base year itself by application of some norms for states revenue effort as well as expenditure needs.

The second step is to apply relevant growth rates both for tax and non-tax items as also the expenditure heads. Finance Commissions had undertaken detailed exercises not only to bring about comparability across states but also to impose norms such that no state can effectively hope to gain by a less than average tax effort by undertaking or by creating histories of excessive expenditures by borrowing in the historical period and claiming grants in the recommendation period of the Finance Commissions. We consider below some of the methodologies followed by Ninth to Twelfth Finance Commissions.

a. Ninth Finance Commission

a1. Own Tax Revenues

Among the four recent Commissions, it was only the Ninth Commission which was asked specifically to follow a normative approach in determining grants in the presidential terms of reference. The Commission did follow a normative methodology with several adjustments. Some of the main steps are summarised below.[2]

For determining own tax revenues in the base year, the Commission followed in its Second Report a modified representative tax system approach. Own tax revenues were divided into six categories: sales tax, stamp duties and registration fees, tax on motor vehicles and goods and passengers, entertainment tax, and other taxes. For the first five

[2] The Commission, for the one year report for 1989-90, followed a panel data modeling approach to estimate taxable capacity for a normative determination of own tax revenues. This was applied to 14 major states. The explanatory variables were per capita SDP, the proportion of non-primary SDP to total SDP, and the Lorenze ratio of consumer expenditure distribution based on 32nd (1977-78) and 38th (1983-84) rounds consumer expenditure data, which were interpolated for the intervening years. The sample period was from 1980-81 to 1984-85. The tax effort was captured by a dummy variable (fixed effects). The application of the norm for the base year (1984-85) was done as follows. States were divided into three groups: high income, middle income, and low income. Instead of the actual values of the state dummy the average value of the dummy variable of the group was substituted for each member of the group. This was to ensure that every state has the tax effort equal to the group average. The other explanatory variables for 1984-85 were put at their actual values.

taxes, a panel model approach was followed with the assumption that the intercepts and slope parameters for each of the explanatory variables are common members of groups of states. However, time dummies were used to capture any inter-temporal shifts. Table 2.1 describes the explanatory variables for each of the tax functions so estimated.

Table 2.1: Modified Representative Tax System Approach

Dependent Variable	Explanatory Variables		
Sales tax (high income states) & (low income states)	SDP at factor cost	Proportion of income from non-primary sector	
Sales tax (middle income states)	Road/railway length for 1000 sq. km area	Per capita energy sales to ultimate consumers	
Stamp duties and registration fees (high income states) & (middle income states)	SDP at factor cost	Road/railway length for 1000 sq. km area	
Stamp duties and registration fees (low income states)	SDP at factor cost	Road/railway length for 1000 sq. km area	Proportion of income from non-primary sector
Motor vehicles and passenger goods tax (high income states) & (middle income states)	Total registered motor vehicles	Proportion of heavy vehicles to total vehicles	
Motor vehicles and passenger goods tax (low income states)	Total registered motor vehicles		
State excise duties * (high income group)	Consumption of country spirit	Road/railway length for 1000 sq. km area	
State excise duties* (low income group)	Consumption of country spirit	SDP at factor cost	
Entertainment tax **	SDP at factor cost	Seating capacity in cinema halls	Proportion of urban population in total population

Source: Report of the Ninth Finance Commission.
Notes: * States divided into two groups only: high income and low income
** This was applied to all major states excluding Kerala.

The base year for all taxes except motor vehicles and passenger taxes was 1984-85 and for the latter 1985-86. For these years, taxable capacity of each state was obtained by substituting the values of independent variables for these years and also the coefficient of the time dummy for this year. These were then projected forward to 1989-90 respectively from 1984-85 and 1985-86. The method of projection was as follows:

Growth rate of tax = Buoyancy of the concerned tax (high, middle, and lower income groups) * trend growth rate of state specific SDP.

For agricultural tax and other tax only trend growth rate was used.

From the 1989-90 base numbers and one more projection exercise was done for the recommendation period 1990-91 to 1994-95. In this period the SDP growth rate was taken by combining 6 percent real growth rate and 5 percent inflation rate giving 11.5 percent per annum of normal growth.

Individual taxes were projected forward on the basis of their past behaviour and adjusted pro-rata to confirm to the aggregate.

Some of the features of this exercise may be noted as follows:

i. Basic data for the revision exercises were quite dated and had to be brought forward by different steps of projections.
ii. Dividing the state into three income groups reduced the sample size for the panel models considerably. Generally, in each sample there was only five observations and five time periods and seven to eight coefficients were to be estimated.
iii. The exercise amounted to estimation of buoyancy for different income groups rather than application of a common tax effort for all the states.
iv. Projections based on such equations required independent projection of all the explanatory variables for the period from 1985-86 to 1989-90 and ideally even further upto 1994-95. Instead of using the estimated equations, projections were eventually done only using growth of SDP.

a2. Non-tax Revenues

Non-tax revenues were divided into various categories and *ad hoc* norms of rates of return were used as has been done by most other Commissions.

a3. Non Plan Revenue Expenditure

Expenditure needs of the states were estimated for the base year and then projected forward. For this purpose expenditures were classified into three categories.

i. Items where expenditure depends on a relevant stock variable like interest payments or maintenance expenditure on roads, buildings and irrigation works.
ii. Items of regular and recurring expenditure
iii. Other items where engineering norms are relevant

Following are some of the item wise details:

1. Interest payments for 1990-91 were taken on the basis of actual stock of 1989-90 and then a growth rate of 12 percent was applied for the recommendation period years.

2. Maintenance of capital assets. Various maintenance norms used by relevant central ministries were applied.
3. For regular and recurring expenditures relating to other general, social and economic services a normative approach was followed. Expenditure needs were derived by estimated cost functions. A distinction was made between cost factors within the control of state governments and those beyond their control. Estimates were prepared for the base year of 1996-97. These estimates represented required expenditure to provide average standards of services for the different states. Additional allowances were made for revision of pay scales.
4. Projection were then made from 1986-87 to the adopted base of 1989-90 by using historical growth rates adjusted partially for periodic revision of salaries by the states.
5. These were then projected forward for the recommendation period of 1990-91 to 1994-95 by allowing a growth rate of 7 percent. Further, year-wise adjustments were done to phase out expenditure by restricting the difference between the actual and normative estimates by 50 percent in 1989-90 and then by phasing the expenditure growth to reach the targeted level in 1994-95.

b. Tenth Finance Commission

b1. Tax revenues

State tax revenues were divided into six categories: sales tax, state excise duty, motor vehicle tax and good and passenger tax, stamp duties and registration fees, land and agricultural related taxes, and other taxes. For the four major taxes a regression exercise was done using the sample period of 1980-81 to 1989-90 in order to estimate buoyancy of these taxes with respect to SDP. These buoyancies were used to calculate growth rates of the concerned taxes for the recommendation period subject to a floor of unity and a tax by tax ceiling so that no state is penalized for showing extra buoyancy or rewarded for showing a buoyancy of less than one.

The base year was kept at 1994-95. For the base year numbers, budget estimates were not accepted. Instead trend growth rates were applied to the actuals of 1992-93 and further moderated by comparing with budget estimates and states forecasts for 1994-95. This was done in a dis-aggregated way for most items of revenue expenditures.

b2. Non-tax Revenues

For interest receipts, the Tenth Finance Commission applied a normative return of 4 percent on the loans outstanding to third parties as on 31st March, 1995. For dividends, state level public enterprises where divided into three categories: commercial, commercial cum promotional, and promotional. A normative rate of return of 7.5, 5, and 2.5 percent respectively, was applied on equity invested in these public enterprises by the state governments. For investment in major and minor irrigation, a normative rate of return of 1 percent on capital invested over and above covering operation and maintenance cost was applied. For hill states, a concessional view was taken. For minor irrigation, full recovery of expenditure on maintenance was provided in a graduated manner. For state electricity boards, a rate of return of 3, 5, and 7 percent was applied in a graduated manner on the investment in these boards. For the state road transport undertakings, a rate of return upto 2.5 percent rising to 6 percent on investment in the transport undertakings was applied.

b3. Non-plan Revenue Expenditure

A real growth rate of 1.7 percent was provided over and above a 5 percent inflation rate for most items. For health and elementary education, a real growth rate of 2.5 percent was provided over and above the inflation rate of 5 percent. For interest payments, projections were done using outstanding debt as on 31st March 1995 and application of state specific effective interest rates. The amount of debt was also allowed to increase at the rate of 10 percent.

c. Eleventh Finance Commission

c1. Own Tax Revenues

Base year was taken as 1999-00. Trend growth rate of total own tax revenue of each state was calculated and applied to the actuals of 1998-99. For this year, the tax-GSDP ratios were worked out. States were then divided into two groups: special category and general category. For each group average tax ratio with respect to GSDP were calculated. The base year tax numbers were adjusted as follows: Where the per capita GSDP of state fell below the average per capita GSDP of the respective group

by more than 15 percent, the tax-GSDP ratio of the state was increased by a margin of 10 percent of the difference between the tax ratio of that state and the average tax ratio of that group. Where the states per capita GSDP was not less than the average per capita of the relevant group by less than 15 percent, the tax-GSDP ratio was adjusted upwards by a margin of 30 percent of the difference between the tax-GSDP ratio of the state and the tax-GSDP ratio of the group. For the special category states, the upward adjustment was always limited to 10 percent of the difference between the tax-GSDP of the states and the group average. The base year adjusted own tax revenues were projected forward by applying a 3x3 tax revenue growth matrix, which made a distinction between historical tax-GSDP ratio and trend GSDP growth rate. State with a lower tax-GSDP states were asked to show higher buoyancy. The overall growth rates were assumed in the range of 12-14 percent and prescriptive buoyancies were kept at 1.1, 1.2, 1.3, and 1.35.

c2. Non-tax Revenues

The Eleventh Finance Commission used a normative rate of return of 3 percent on account of interest on loans and advances extended by the state governments which was increased in a graduated manner to 9 percent. For dividends, a norm of 2 percent was applied on equity investment which was gradually increased to 5 percent over the recommendation period. For investment in irrigation, a graduated percentage increase ranging from 10 – 25 percent was prescribed. For recovery through user charges in all cases a 25 percent step-up for year over the base year was prescribed. For investment in public sector undertakings, a 5 percent return on equity and 9 percent on loans and advances was postulated.

c3. Non-Plan Revenue Expenditures

For interest payments as well as pensions, a growth rate of 10 percent was allowed. For salary component of expenditure in general, social and economic services a 5 percent per annum growth was allowed. For non salary components, for general services a 7 percent growth rate, and for economic services a 11 percent growth rate was provided. For social services, a 15 percent per annum growth was allowed. For irrigation

projects normative return based on utilised and unutilized irrigation potential were applied.

d. Twelfth Finance Commission

d1. Own Tax Revenues

The trend growth rates of own tax revenues were estimated over the period 1993-94 to 2002-03. These were applied to 2002-03 levels and TGR based estimates for 2004-05 were derived. From these, the tax-GSDP ratios were calculated and compared with the corresponding group averages for special and general group categories. For all states, where the tax-GSDP ratio was below the category- average, it was adjusted upwards by a margin of 30 percent of the distance from the respective group average and own tax revenues with respect to this normative adjustment were calculated. For the projection period, the prescriptive buoyancy was used. A distinction was made taking into account the average OTR-GSDP ratio achieved in 2002-03, improvement in OTR-GSDP ratio in 2000-03 over 1993-96, and average per capita GSDP over 1999-02. States showing higher tax-GSDP ratio or higher improvement in tax-GSDP ratio were asked to achieve a lower prescriptive buoyancy. The nominal growth rates were kept at 11 percent, 12 percent, and 12.8 percent. The prescriptive buoyancies were kept at 1.20, 1.25, 1.30, and 1.35.

d2. Non-tax Revenues

For interest receipts, a 7 percent return on outstanding loans and advances, and for dividends, a 5 percent return on equity investment was provided for in a graduated manner. For irrigation receipts, cost recovery rates were provided in a graduated manner to cover 50 to 90 percent of maintenance expenditure on utilised potential for major, medium and minor irrigation projects. For other non-tax revenues, 12.5 percent of annual rate of growth for general services and 25 percent for social and economic services were applied.

d3. Non-plan Revenue Expenditures

Interest payment in the base was assessed on the basis of group averages using interest payment to total revenue receipts ratio, for states with ratios higher than group

averages 80 percent of the excess over the group average was allowed to be retained. Thereafter the reduce ratios of such states and un-adjusted ratios of the remaining states were applied to derive normative levels of interest payment for 2002-03. These were grown at 10 percent to arrive at 2004-05 figures. For the recommendation period, the following growth rates were applied 6.5, 7.5, and 8.5 percent with respect to states whose IP-TRR ratio was above 30 percent, between 23 and 30 percent, and below 20 percent, respectively. For pension payments, an annual growth rate of 10 percent was applied. For education after deriving the base year figures, 9.5 percent growth rate was applied for general education and 11.5 percent was applied for health. For maintenance of irrigation works, normative expenditure requirements of Rs. 600 per hectare for utilised potential and Rs. 300 for un-utilised potential of major and medium irrigation projects and Rs. 300 for utilised potential of minor projects was allowed for the base year and then a 5 percent annual growth rate was allowed. For maintenance of roads and building also norms were used. For other general, social and economic services, composite growth rates base on salary intensity with states grouped under different intensity threshold were used.

2.5 Empirical Trends

In examining the empirical trends regarding grants, we look at (a) the purposes for which grants were recommended by the Finance Commissions, (b) the share of grants in total transfers, (c) the importance of revenue-gap grants, and (d) state-wise shares in grants.

a. Objectives for Which Grants are given

In addition to the 'revenue-gap' grants, Commissions have recommended grants for a variety of purposes. The objectives for which grants are given have also evolved over the years (Table 2.2).

Table 2.2: Purpose of Grants: First to Twelfth Finance Commissions

Commission	Purpose of Grant			
First	Revenue gap	In lieu of export duty on jute and jute products (art 273)	Primary education	
Second	Revenue gap	In lieu of export duty on jute and jute products (art 273)	Grant in lieu of tax on railway passenger fares	
Third	Revenue gap	Grant in lieu of tax on railway passenger fares	Improvement of communications	
Fourth	Revenue gap	Grant in lieu of tax on railway passenger fares		
Fifth	Revenue gap			
Sixth	Revenue gap	Grant in lieu of tax on railway passenger fares	Grant on account of wealth on agricultural property	Provision for relief on account of natural calamities
Seventh	Revenue gap	Grant in lieu of tax on railway passenger fares	Grant on account of wealth on agricultural property	Provision for relief on account of natural calamities
Eighth	Revenue gap	Grant for upgradation and special problems	Grant in lieu of tax on railway passenger fares	Grant to cover net additional interest liability
Eighth (contd.)	Revenue gap	Grant on account of wealth on agricultural property		
Ninth (1)	Revenue gap	Grant for upgradation and special problems	Grant in lieu of tax on railway passenger fares	
Ninth (2)	Revenue gap	Grant for minimum revenue plan expenditure	Grant in lieu of tax on railway passenger fares	
Tenth	Revenue gap	Grant for upgradation and special problems	Grant in lieu of tax on railway passenger fares	Grant for local bodies
Eleventh	Revenue gap	Grant for local bodies	Upgradation and special problems	
Twelfth	Revenue gap	Grant for local bodies	Grant for health	Grant for education
Twelfth (contd.)		Grant for maintenance of forests	Grant for heritage conservation	Grant for state specific needs
Twelfth (contd.)		Grants for calamity relief	Grant for maintenance of public buildings	Grant for roads and bridges

Source (Basic Data): Reports of Finance Commissions, Government of India.
Notes: These do not include grants for natural calamities and debt relief, if any.

b. Relative Importance of Grants in Total Transfers

Within the scheme of transfers recommended by the Finance Commissions, the relative importance of grants in total transfers had varied considerably across Commissions. Table 2.3 provides a comparative picture.

Table 2.3: Relative Share of Taxes and Finance Commission Grants in Total Transfers

Commission	Relative Share of Taxes and Grants in Total Transfers					
	Recommended Amounts (Rs. crore)			Actual Amounts (Rs. crore)		
	Share in Taxes	Grants	Total	Share in Taxes	Grants	Total
First	335	46	382	370	34	404
Second	852	197	1049	768	240	1008
Third	1067	244	1311	1017	303	1320
Fourth	1323	422	1745	1282	471	1753
Fifth	4605	711	5316	4562	793	5355
Sixth	7099	2510	9609	8275	2763	11038
Seventh	19234	1609	20842	21386	1788	23174
Eighth	35683	3769	39452	42016	5219	47235
Ninth (1)	11786	1877	13663	13231	1594	14825
Ninth (2)	87882	18154	106036	99337	12433	111770
Tenth	206343	20300	226644	190520	20585	211105
Eleventh	376317	58587	434904	310721	58335	369056
Twelfth	613112	142640	755752	670274	142640	812914
Share in Total (percent)						
First	87.9	12.1	100.0	91.6	8.4	100.0
Second	81.2	18.8	100.0	76.2	23.8	100.0
Third	81.4	18.6	100.0	77.0	23.0	100.0
Fourth	75.8	24.2	100.0	73.1	26.9	100.0
Fifth	86.6	13.4	100.0	85.2	14.8	100.0
Sixth	73.9	26.1	100.0	75.0	25.0	100.0
Seventh	92.3	7.7	100.0	92.3	7.7	100.0
Eighth	90.4	9.6	100.0	89.0	11.0	100.0
Ninth (1)	86.3	13.7	100.0	89.2	10.8	100.0
Ninth (2)	82.9	17.1	100.0	88.9	11.1	100.0
Tenth	91.0	9.0	100.0	90.2	9.8	100.0
Eleventh	86.5	13.5	100.0	84.2	15.8	100.0
Twelfth	81.1	18.9	100.0	82.5	17.5	100.0

Source (Basic Data): Vithal and Sastry (2001) and Reports of Finance Commissions, Government of India.

The amounts of tax devolution can be quite different from what was estimated by the Finance Commission since it is only the share in the concerned divisible that taxes are recommended by the Commission. Similarly there may be differences in actual grants given to the states although in this case it is the absolute amounts that are recommended by the Finance Commissions. The difference may arise due to some conditions not being fulfilled or the relevant utilization certificates not being submitted in time or other procedural reasons. However, these differences are not likely to be large. Table 2.3 provides a comparison of relative shares based on recommended amounts as well as actual amounts.

It shows that the actual share of grants in total actual transfers has ranged between 7.7 percent (Seventh Finance Commission) and 26.9 percent (Third Finance Commission). In the case of recommended transfers, the share of grants has varied between 7.7 percent and 26.1 percent.

Table 2.4 shows the relative shares of general and special category states in the total (non-plan) revenue gap grants. Within the category of revenue gap grants, the share of the special category states, has been more than ninety percent in seven years. This implies that for the general category states, it is tax revenue sharing that has been the important principle for determining grants, while for the special category states, the determining principle has been the exercise that determines the revenue gap grants.

Table 2.4: Non-Plan Revenue Gap Grants: Shares of Special and General Category States

Commission	Year	General Category States	Special Category States
Ninth	1990-91	57.95	42.05
	1991-92	62.71	37.29
	1992-93	67.19	32.81
	1993-94	71.47	28.53
	1994-95	75.47	24.53
Tenth	1995-96	42.19	57.81
	1996-97	29.01	70.99
	1997-98	6.10	93.90
	1998-99	3.69	96.31
	1999-00	0.00	0.00
Eleventh	2000-01	42.49	57.51
	2001-02	18.89	81.11
	2002-03	12.07	87.93
	2003-04	0.00	100.00
	2004-05	0.00	100.00
Twelfth	2005-06	32.83	67.17
	2006-07	13.51	86.49
	2007-08	5.98	94.02
	2008-09	0.00	100.00
	2009-10	0.00	100.00

Source (Basic Data): Reports of Finance Commissions, Government of India.

Table 2.5 gives the amounts of the revenue gap grants awarded to states for the periods covered by the Ninth and the Twelfth Finance Commissions. The important recipients of these grants are only the special category states and a few of the low income states for some years. For the special category states grants are high because of the committed expenditures on account of large plan expenditures undertaken in the past. In their case, it is the historical trends that have been important. All Commissions, including the Ninth Commission, typically either had no norms or only diluted norms have been applied.

Table 2.5: State Wise Revenue Gap Grants: Ninth to Twelfth Finance Commission Period

(Rs. crore)

	Ninth 1990-95	Tenth 1996-2000	Eleventh 2001-45	Twelfth 2006-10
Andhra Pradesh	341.25	686.45		
Arunachal Pradesh	302.79	307.60	1228.02	1357.88
Assam	874.23	712.03	110.68	305.67
Bihar	1374.27	333.06		
Jharkhand				
Goa	166.58	77.26		
Gujarat				
Haryana				
Himachal Pradesh	523.09	772.18	4549.26	10202.38
Jammu & Kashmir	1096.42	1184.13	11211.19	12353.46
Karnataka				
Kerala	412.54			
Madhya Pradesh	1047.81			470.37
Chhattisgarh				
Maharashtra				
Manipur	371.65	350.92	1744.94	4391.98
Meghalaya	256.18	316.42	1572.38	1796.86
Mizoram	379.79	331.19	1676.3	2977.79
Nagaland	458.67	529.78	3536.24	5536.5
Orissa	1082.98	371.74	673.6	488.04
Punjab	53.91		284.21	3132.67
Rajasthan	1446.79	33.45	1244.68	
Sikkim	84.68	105.69	840.58	188.67
Tamil Nadu	43.79			
Tripura	466.01	488.78	2414.16	5494.2
Uttar Pradesh	3235.10	982.00	1026.74	0
Uttaranchal				5114.68
West Bengal	998.65		3246.09	3044.72
Total	**15017.18**	**7582.68**	**35359.07**	**56855.87**

Source (Basic Data): Reports of Finance Commissions, Government of India.

In terms of absolute amounts there is clearly some volatility in the amount of grants as well as the number and names of states who qualify for such grants. The main reason is that the determination of revenue gap grants was always taken up by the Finance Commissions as an exercise that determine only residuals. These residuals depended on states share in central taxes which changed overtime reflecting both the changes in the distribution of per capita GSDP across states as well as the changes in the weights assigned to different criteria. In addition these residuals were also affected by the differential growth rates of the state GSDPs which reflected changes in fiscal capacity aw well as changes in states revenue efforts.

c. Share of States in Grants

In this section, we look at the states' share in total grant from the First Finance Commission onwards. Although grants are recommended in absolute amounts, the respective shares of grants for states can be worked out based on the amounts of the recommended grants. The shares are given in Table 2.6.

Table 2.6: State wise Share in Total Grants Recommended by the Finance Commission

(percent)

State	First	Second	Third	Fourth	Fifth	Sixth
	1	**2**	**3**	**4**	**5**	**6**
General Category States						
Andhra Pradesh	0.0	10.1	15.6	9.6	9.1	8.2
Bihar	13.4	10.8	1.2	0.0	0.0	4.2
Chhattisgarh	0.0	0.0	0.0	0.0	0.0	0.0
Goa	0.0	0.0	0.0	0.0	0.0	0.0
Gujarat	0.0	0.0	8.6	0.0	0.0	0.0
Haryana	0.0	0.0	0.0	0.0	0.0	0.0
Jharkhand	0.0	0.0	0.0	0.0	0.0	0.0
Karnataka	4.3	15.2	11.1	14.8	2.5	0.0
Kerala	4.8	4.5	10.2	14.8	7.0	8.3
Madhya Pradesh	3.2	7.6	4.9	1.9	0.0	0.0
Maharashtra	0.9	0.0	0.0	0.0	0.0	0.0
Orissa	11.9	8.7	21.7	20.7	14.7	12.1
Punjab	15.3	5.7	0.0	0.0	0.0	0.0
Rajasthan	2.6	6.3	8.6	4.8	7.2	9.2
Tamil Nadu	0.0	0.0	4.9	4.9	3.2	0.0
Uttar Pradesh	0.0	0.0	0.0	7.0	0.0	7.9
West Bengal	24.8	12.1	0.0	0.0	10.2	9.4
Total	**81.2**	**81.0**	**86.9**	**78.5**	**54.1**	**59.4**
Special Category States						
Arunachal Pradesh	0.0	0.0	0.0	0.0	0.0	0.0
Assam	18.8	11.4	9.8	11.8	11.8	10.1
Himachal Pradesh	0.0	0.0	0.0	0.0	3.9	6.4
Jammu & Kashmir	0.0	7.6	3.3	4.7	10.4	6.9
Manipur	0.0	0.0	0.0	0.0	3.3	4.6
Meghalaya	0.0	0.0	0.0	0.0	1.6	3.0
Mizoram	0.0	0.0	0.0	0.0	0.0	0.0
Nagaland	0.0	0.0	0.0	5.0	11.0	5.1
Sikkim	0.0	0.0	0.0	0.0	0.0	0.0
Tripura	0.0	0.0	0.0	0.0	4.0	4.5
Uttaranchal	0.0	0.0	0.0	0.0	0.0	0.0
Total	**18.8**	**19.0**	**13.1**	**21.5**	**45.9**	**40.6**
Grand Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 2.6 (contd.): State wise Share in Total Grants Recommended by the Finance Commission

(percent)

State	Seventh	Eighth	Ninth (1)	Ninth (2)	Tenth	Eleventh	Twelfth
	7	**8**	**9 (1)**	**9 (2)**	**10**	**11**	**12**
General Category States							
Andhra Pradesh	1.2	3.8	2.8	3.7	8.6	3.5	3.7
Bihar	3.9	5.7	4.4	8.3	6.7	3.1	5.6
Chhattisgarh	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Goa	0.0	0.0	1.2	0.9	0.5	0.1	0.1
Gujarat	0.0	1.9	0.8	1.8	4.2	2.4	2.6
Haryana	0.0	0.3	1.5	0.4	1.2	1.1	1.0
Jharkhand	0.0	0.0	0.0	0.0	0.0	0.0	2.1
Karnataka	0.0	0.4	0.8	0.6	2.4	1.9	2.8
Kerala	0.3	0.8	0.4	2.9	2.5	1.4	2.3
Madhya Pradesh	4.0	4.5	2.4	7.2	4.0	3.0	3.6
Maharashtra	0.0	0.5	3.0	0.9	4.2	3.3	3.9
Orissa	10.5	9.2	5.8	6.9	4.5	2.9	3.7
Punjab	0.0	0.9	5.0	0.9	2.1	1.9	3.4
Rajasthan	1.2	3.7	4.1	10.5	5.6	5.1	3.3
Tamil Nadu	1.7	0.6	1.7	1.0	3.6	2.3	2.9
Uttar Pradesh	7.0	5.0	6.2	19.7	13.0	6.8	10.7
West Bengal	1.5	16.7	5.5	6.3	4.3	8.0	5.3
Total	**31.2**	**53.9**	**45.6**	**72.0**	**67.5**	**46.8**	**58.4**
Special Category States							
Arunachal Pradesh	0.0	0.0	4.6	1.7	2.0	2.4	1.2
Assam	1.3	9.4	8.4	5.4	6.2	1.6	3.1
Himachal Pradesh	13.4	6.5	6.1	3.3	5.0	8.3	7.9
Jammu & Kashmir	13.5	10.1	12.7	6.3	7.0	19.8	9.4
Manipur	9.7	4.5	3.9	2.1	2.2	3.1	3.3
Meghalaya	6.1	3.7	2.8	1.5	1.7	2.9	1.5
Mizoram	0.0	0.0	5.2	2.1	2.0	3.1	2.2
Nagaland	13.8	5.4	5.2	2.5	2.9	6.2	4.1
Sikkim	2.3	1.1	0.9	0.5	0.7	1.6	0.3
Tripura	8.7	5.4	4.6	2.6	2.7	4.3	4.1
Uttaranchal	0.0	0.0	0.0	0.0	0.0	0.0	4.5
Total	**68.8**	**46.1**	**54.4**	**28.0**	**32.5**	**53.2**	**41.6**
Grand Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source (Basic Data): Reports of Finance Commissions, Government of India.

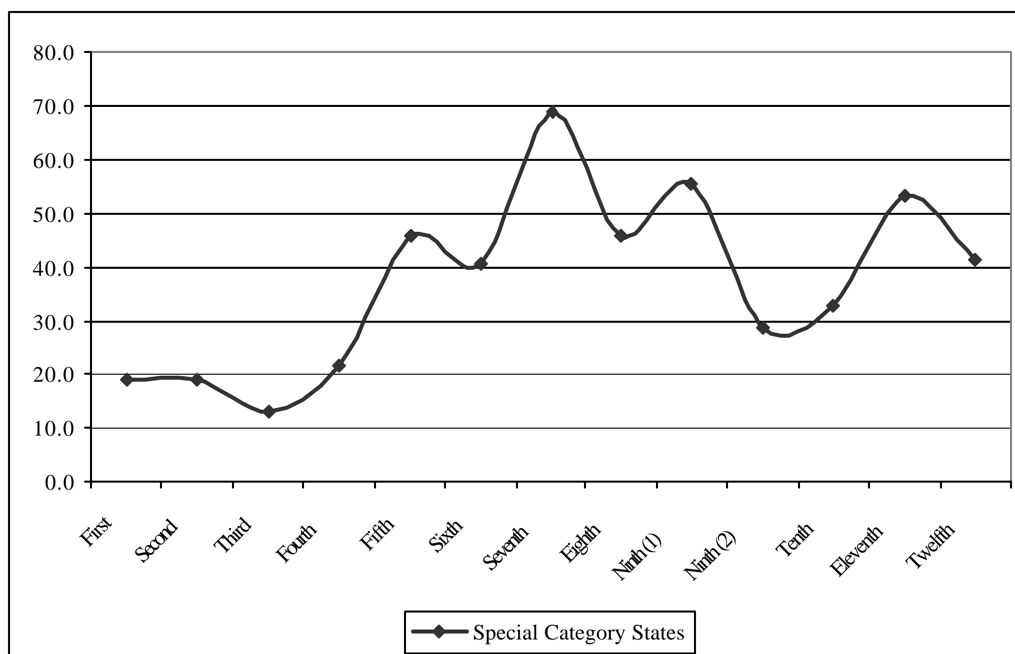

Chart 2.1 : Share of Special Category States in Total Grants

The share of special category states in total grants is far more than their share in tax devolution. It has also increased over time. At the lowest it was close to 10 percent for the Third Finance Commission but it steadily rose to a peak of close to 69 percent in the case of the Seventh Finance Commission. It has since varied in the range of 29 - 55 percent (Chart 2.1).

However, as noted earlier, the share of special category states in the revenue gap grants indicates that they have been getting the bulk of the revenue grants gaps, particularly for the more recent Finance Commissions.

2.6 Conclusions

States get grants from the Finance Commission, Planning Commission and other Central Ministries. The Finance Commission grants have been given for meeting the assessed revenue gap of the states (on non-plan of total revenue account) as also for various other purposes including special needs and upgradation of standards. From a methodological viewpoint, the determination of the so called revenue gap grants are the most important. It is the determination of these grants that necessitates the Finance

Commission to undertake a comprehensive examination of both central and state finances and projects these forward. It is in this context that the Finance Commissions have often been accused of following a gap filling approach which leads to significant adverse incentives. In this Chapter, we have looked at the overall methodology of determining such grants. From Ninth Finance Commission onwards the Commissions have attempted to apply normative principles at least partially for both tax and non tax revenues of the states as well as some expenditure heads. This has related to both the base year and the projection year. The Ninth Finance Commission used a panel modeling approach to determine the tax base in the base year. However, the Ninth Finance Commission did not apply such norms for the special category states which were the main recipients of the revenue gap grants. Some of the more recent Finance Commissions have used some partial adjustment in respect of those states that tax-GSDP ratio was below the average tax-GSDP ratio for the group of general and special category states. Commissions have also used a normative cum prescriptive set of parameters for projections for the recommendation periods using the adjusted base year figures. On the expenditure side, application of normative principles has been far more limited. In some priority services like health and education, higher growth rates have been adopted. Overall, the analyses have remained considerably adhoc.

The outcome of these exercises has been to determine the revenue gap grants. With the high buoyancy of central tax revenues, the resultant assessed gap for the general category states has progressively fallen. It is only the special category states that get a significant portion of the revenue gap grants. It may be worthwhile considering whether the revenue needs of the special category states, which are much higher in per capita terms than the general category states mainly on account of committed expenditures due to very large plan sizes in the past should be given through a separate window. If grants for the special category states are separately worked out, then the importance of the revenue grants for general category states would become quite marginal. In fact, it may be better to focus only on selected set of services like health and education for a full fledged application of the normative methodology guided by the equalization principle.

Chapter 3

Trends in Fiscal Transfers

3.1 Introduction

In this chapter, we look at the long term trends in fiscal transfers in India covering the period from 1950-51 to 2007-08 encompassing both states' share in central taxes and grants. This covers the full periods of the first eleven Finance Commissions and three years of the period of the Twelfth Finance Commission. For 2006-07 and 2007-08, data relate to revised and budget estimates. For long period trends, we have used data from Indian Public Finance Statistics (IPFS). In this chapter, we look at three types of patterns: (i) the structure of transfers from the centre to the states as divided between states' share in central taxes, statutory grants given by the Finance Commission (FC), and other grants. (ii) the share of centre and states in total revenue receipts before and after transfers, and (iii) the pattern of changes in the share of centre and states in the combined revenue expenditures of the centre and states as well as the combined total expenditures. This analysis would help us to indicate how vertical imbalance in the system, prior to transfers, gets resolved through the transfers.

Although the normal periodicity of the Finance Commission is 5 years, the periods of recommendations have been implemented sometimes for a lesser period (Third and Fourth Finance Commissions) and only once for a longer period (Ninth Finance Commission). Table 3.1 gives the details of the respective years covered by the successive Finance Commissions from the First to the Twelfth. In the overview of trends in fiscal transfers undertaken here, Commission-period averages will refer to the averages over these respective periods except for the Twelfth where the reference is for the period from 2005-06 to 2007-08 up to which only revised estimates are available.

Table 3.1: Years Covered in Different Finance Commission Recommendations

Finance Commission	Period for which recommendation was implemented	No. of Years
First	1952-53 to 1956-57	5
Second	1957-58 to 1961-62	5
Third	1962-63 to 1965-66	4
Fourth	1966-67 to 1968-69	3
Fifth	1969-70 to 1973-74	5
Sixth	1974-75 to 1978-79	5
Seventh	1979-80 to 1983-84	5
Eighth	1984-85 to 1988-89	5
Ninth	1989-90 to 1994-95	6
Tenth	1995-96 to 1999-00	5
Eleventh	2000-01 to 2004-05	5
Twelfth	2005-06 to 2009-10	5

Source: Fifty Years of Fiscal Federalism in India, 2005, Twelfth Finance Commission.

3.2 Trends in Fiscal Imbalance

The analysis in the growth of fiscal transfers is preceded with brief overview of trends in fiscal imbalance as measured by revenue deficits relative to GDP of the central, states, and their combined account. In so far as revenue deficit is concerned, the combined account went into a persistent revenue deficit since 1982-83 (Chart 3.1).

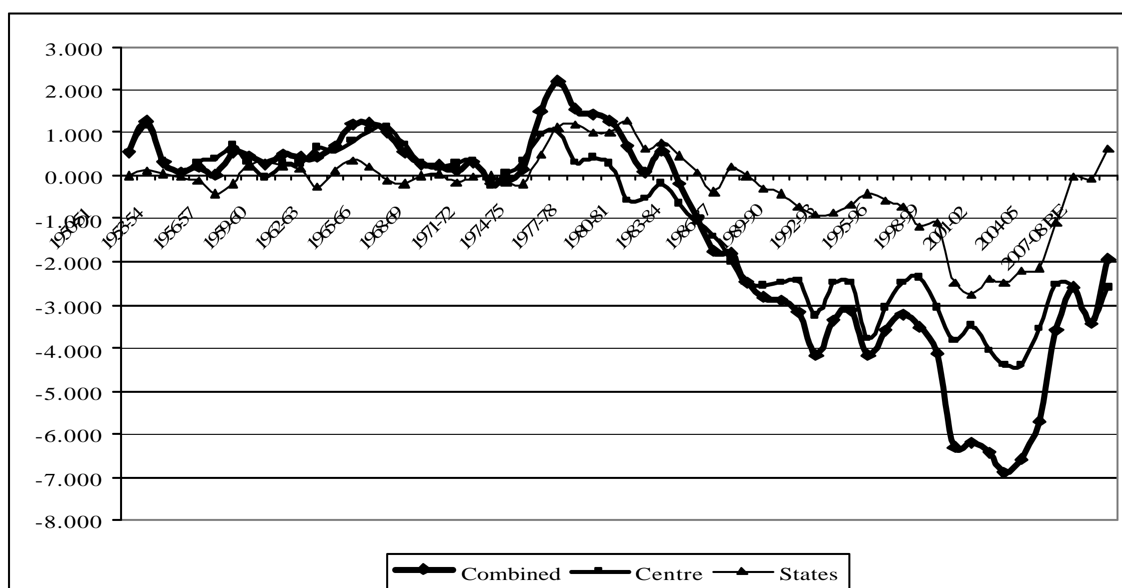

Chart 3.1: Revenue Surplus of Centre, States, and Combined Accounts

Since the revenue deficit of the centre and the states can be added to obtain the combined revenue deficit, the curve indicating revenue surplus (negative values indicate deficit) is the vertical addition of the corresponding curves of the centre and the states. The central account went into revenue deficit on permanent basis in (detailed data are given in Appendix 3.1) 1979-80 and has remained in revenue deficit in all years since then. The account of the states went into revenue deficit in 1987-88 on a persistent basis. It remained in such deficit until 2006-07. The combined account went into revenue deficit in 1982-83 and is still in revenue deficit. The combined revenue deficit peaked at close to 6.9 percent of GDP in 2001-02. After that there has been an improvement. As long as the centre was in revenue account surplus, even after transfers, transfers were easier to handle. But after the eighties, after transfers, the centre consistently showed larger revenue deficit compared to the states.

3.3 Trends in Volume of Transfers

Table 3.2 gives the volume of total transfers as percentage of centre's gross revenue receipts as well as GDP at market prices (1999-00 base). There is a noticeable improvement over time in the share of transfers as percentage of centre's gross revenue receipts. The lowest share of transfers was in the period of the Third Finance Commission at 25.1 percent. It increased to 38.2 percent in the period of Seventh Finance Commission and further to 39.1 percent in the period of the Ninth Finance Commission. During the award period of Tenth Finance Commission, it fell to about 36 percent. During the Tenth and Eleventh Finance Commission periods, it fell close to 36 percent. During the Twelfth Finance Commission period, going by the average of the first three years, it has increased to 40.8 percent. A similar pattern is noticeable in terms of the share of transfers as percentage of GDP at market prices. It has increased nearly five times from the period of First Finance Commission to the Twelfth Finance Commission. Year wise details are given in Appendix Tables 3.2.

Table 3.2: Transfers Relative to Centre's Gross Revenue Receipts (CGRR) and GDP

Finance Commission	Transfers as percent of	
	CGRR	GDP$
First	23.9	1.2
Second	30.7	2.0
Third	25.1	2.3
Fourth	31.1	2.6
Fifth	34.7	3.3
Sixth	31.8	3.5
Seventh	38.2	4.4
Eighth	38.1	4.8
Ninth	39.1	4.8
Tenth	35.6	4.1
Eleventh	35.9	4.2
Twelfth*	40.8	5.2

Source (Basic Data): Indian Public Finance Statistics, various years.
Note: * average of 3 years (2005-08) for CGRR and 2 years (2005-07) for GDP, $market prices.

Table 3.3: Composition of Transfers: Relative Shares of Tax Devolution and Grants

(Percent)

Average over Commission periods	States' share in central taxes	Grants from the centre	Statutory grants from the centre	Grants other than statutory grants
First	57.0	43.0	21.7	21.3
Second	49.5	50.5	18.1	32.4
Third	46.8	53.2	17.1	36.1
Fourth	44.8	55.2	17.1	38.1
Fifth	53.3	46.7	9.9	36.8
Sixth	50.5	49.5	17.4	32.1
Seventh	58.0	42.0	5.0	36.9
Eighth	53.3	46.7	6.5	40.2
Ninth	54.6	45.4	8.9	36.4
Tenth	60.4	39.6	6.9	32.7
Eleventh	57.2	42.8	11.1	31.7
Twelfth*	54.6	45.4	12.9	32.5
All-period Average	**53.8**	**46.2**	**12.3**	**33.9**

Source (Basic Data): Indian Public Finance Statistics, various years.
Note: * average of 3 years (2005-08).

Table 3.3 shows the changes in the composition of transfers in terms of a decomposition of transfers into the relative contribution of states' share in central taxes, and grants from centre, which are divided into statutory grants under Article 275 and other grants. In terms of the relative contributions of states' share in central taxes in total transfers, it has ranged between 45 to 60 percent. During the period from Seventh

Finance Commission to the Twelfth Finance Commission, this range has been limited to 53 to 60 percent. The all-period average is above 54 percent. For the share of central taxes, the corresponding average is 46 percent. In the total grants, statutory grants have had a share of only 5 to 9 percent during the period from the Seventh to Tenth Finance Commissions. For the other Finance Commissions, it has ranged between 10 to 22 percent. Grants other than statutory grants have been on an average around 33 percent. In the recommendation periods of Ninth to Twelfth Finance Commissions, this share has remained close to this average.

3.4 Share of Centre and State in Combined Revenue Receipts: Before and After Transfers: Vertical Imbalance

Transfers affect the availability of resources to the two tiers of government. The pattern of division of the resources between the two tiers changes completely before and after transfers reflecting the correction in the vertical imbalance brought about by the transfers in the centralization of assignment of resources according to the constitutional provisions. This analysis has been done by utilising the data from Indian Public Finance Statistics (IPFS)[3] in the following manner:

2

a. Centre's gross tax revenues: This is obtained by adding states' share in central taxes to centre's net tax revenues as given in Table 2.2 of IPFS (row A)
b. Centre's non-tax revenue: This is derived by deducting interest receipts from the states and UTs from non-tax revenues of the centre, since the combined revenue receipts are net of interest payments from the states. The interest receipts from states are derived by deducting the sum of interest payments of the centre and states from the combined interest payments.
c. States own tax revenues: This is taken from Table 1.7 of IPFS. The states own non-tax revenues are taken from IPFS Table 3.2 by deducting from the total receipts, grants from the centre and tax revenues of the states as given in Table 3.2. It may be noted that these tax revenue figures are inclusive of states' share in central taxes since these are also included in the total. Further, in this derived tax revenue, other adjustments including net transfer from funds are also accounted for. Adding states' own tax revenue and non-tax revenue, we derive states' own revenue receipts. Combined revenue receipts are derived by adding centre's adjusted revenue receipts (i.e. net of interest receipts from states and states' own revenue receipts). This sum giving combined revenue receipts is still different from the combined receipts figures given in the IPFS Table 1.2 reflecting the differences between figures of grants given by centre in centre's table and grants received by the states in states' revenue receipts table.

a. Share of Centre and States in Revenue Receipts before Transfers

Table 3.4 gives the share of the centre and states in the revenue receipts before transfers. From the period from Second Finance Commission onwards, the share of the centre has ranged between 60.9 to 66.3 percent. For the period covered by the Third to Seventh Finance Commissions, it has varied in the narrow range of 64.2 to 66.3 percent. After that it has fallen somewhat but it is currently at about 63 percent. Over the entire period covered by this analysis, the average share of the centre has been in the vicinity of 63.2 percent and that of states close to 37 percent prior to transfers. In other words, in raising revenues, the relative roles of centre and state have been relatively stable since the Third Finance Commission period. This indicates that the vertical imbalance in resources resulting from the scheme of assignment has been broadly stable.

Table 3.4: Share of Centre and States in Combined Revenue Receipts Before and After Transfers

	Before Transfers		After Transfers	
	Centre	States	Centre	States
First	58.1	41.9	44.2	55.8
Second	62.4	37.6	42.8	57.2
Third	66.3	33.7	48.1	51.9
Fourth	65.0	35.0	43.3	56.7
Fifth	65.6	34.4	41.2	58.8
Sixth	65.6	34.4	43.6	56.4
Seventh	64.2	35.8	38.5	61.5
Eighth	64.8	35.2	38.5	61.5
Ninth	62.5	37.5	35.9	64.1
Tenth	61.3	38.7	37.0	63.0
Eleventh	60.9	39.1	36.7	63.3
Twelfth*	62.8	37.2	36.5	63.5

Source (Basic Data): Indian Public Finance Statistics, various years.
Note: * average of 3 years (2005-08).

b. Share of Centre and States after Transfers

Table 3.4 also shows the relative share of after transfers. As envisaged in the constitution, fiscal transfers are meant to resolve this vertical imbalance. While the share of centre in the combined revenues of the centre and states were at a peak of 48 percent during the Third Finance Commission period, it has fallen to about 37 percent in the period of Twelfth Finance Commission. In contrast, the share of states has increased from

52 to 63 percent. It is noticeable that from the period of the Seventh Finance Commission these shares have been broadly stable. It is also noticeable that the accrual of revenue receipts to the centre and states has showed almost the reversal of the pattern observed in terms of raising of revenues by the two-tiers of governments.

Chart 3.2 highlights the pattern of stability after transfers in the share of centre and states in the combined revenue receipts since the period of award of the Ninth Finance Commission. The line representing states' share has always been above that representing centre's share. The closest they came to each other was in Third Finance commission period. They moved away from each other in favour of the states' until the Ninth Finance Commission period after which the distance between the two seems to have stabilized.

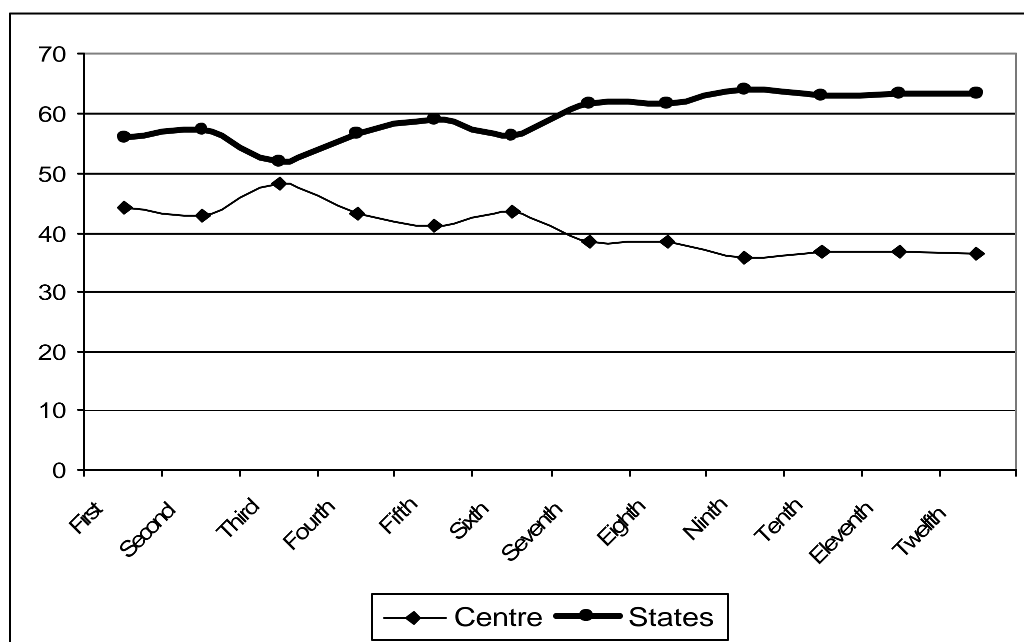

Chart 3.2 : Relative Shares of Centre and States in Combined Revenue Receipts after Transfers

3.5 Relative Shares of Centre and States in Revenue and Total Expenditure

Table 3.5 gives the relative shares of the centre and the states in revenue and total expenditures. There has been a remarkable stability in regard to these shares particularly for revenue expenditures throughout the periods covered from the First to the Twelfth

Finance Commissions. The share in the revenue expenditure has been hovering around the all-period average of 43 percent through out the award periods covered by the First to Twelfth Finance Commissions. At the highest, it was 46 percent in the Third Finance Commission period and at the lowest it was 40 percent in the period of the Fifth Finance Commission. Correspondingly, the share of states in the combined revenue expenditures has been around 57 percent. At the highest, it was at 67 percent and at the lowest, it was 56 percent. As far as total expenditures are concerned, the share of the centre has been slightly higher at around the average of 46 percent and correspondingly that for states has been around the average of 54 percent. For the periods covered by the Tenth to Twelfth Finance Commissions both revenue and total expenditures seem to be remaining closely around the averages of 43 and 57 percent respectively for the centre and the states.

Table 3.5: Relative Shares of Centre and States in Revenue and Total Expenditures

(Percent)

Average for Finance Commission Periods	Relative Shares			
	Total Expenditure		Revenue Expenditure	
	Centre	States	Centre	States
First	43.83	56.17	40.77	59.2
Second	49.47	50.53	41.83	58.2
Third	50.51	49.49	46.10	53.9
Fourth	47.69	52.31	41.77	58.2
Fifth	43.14	56.86	40.00	60.0
Sixth	47.35	52.65	44.19	55.8
Seventh	44.79	55.21	41.98	58.0
Eighth	47.86	52.14	44.22	55.8
Ninth	45.58	54.42	43.45	56.5
Tenth	43.35	56.65	43.18	56.8
Eleventh	43.77	56.23	44.03	56.0
Twelfth*	43.18	56.82	43.52	56.5
All-period Average	**45.88**	**54.12**	**42.9**	**57.1**

Source (Basic Data): Indian Public Finance Statistics, various years.
Note: * average of 3 years (2005-08)

Chart 3.3 shows the year-wise figures over period from 1950-51 to 2007-08. Year wise details are given in Appendix Table 3.3.

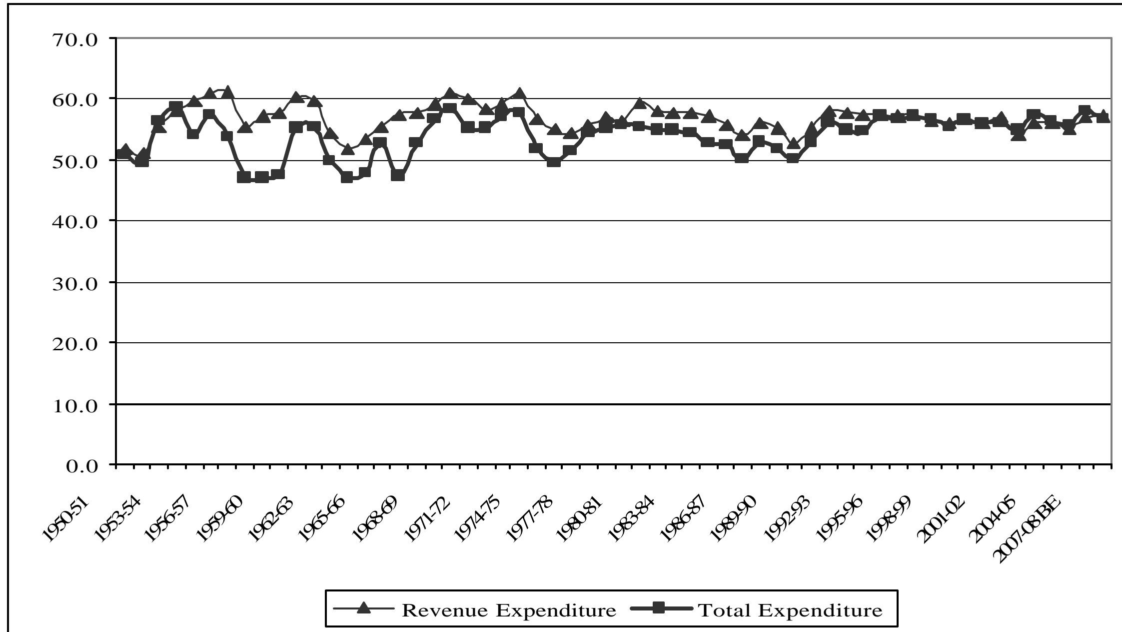

Chart 3.3: Share of States in Combined Revenue and Total Expenditures

a. Trends in Transfers: State-wise Trends

For state-wise analysis, we will focus only on Finance Commission transfers, rather than total transfers, which included plan grants and other central grants. In Chapters 1 and 2, we looked at the state wise shares of transfers in terms of tax devolution and grants. However, a complete analysis should look at the total transfers comprising both tax devolution and grants. However, in order to add these for deriving the shares of individual states in total transfers, we need to combine tax devolution where shares rather than absolute amounts are recommended by the Finance Commission with grants that are recommended in absolute amounts. Two options are possible: first one is to take the absolute amounts of tax devolution (as originally estimated by the Commissions) and the grants recommended by the Commission. The other is that since there are estimation errors in tax devolution estimated by the Finance Commissions, we can take total actual amounts of tax devolution and apply the tax shares as worked out on the basis of recommendations of the Finance Commissions, to work out the state-wise shares. We have done both exercises and the results are by and large comparable with small differences.

Table 3.6 shows state-wise share in central taxes and grants taken together based on Finance Commission estimates of amounts of tax devolution. The combined share of the special category states has progressively increased reaching a peak of 12.2 percent in the Twelfth Finance Commission period. Among the general category states, there is a pattern indicating higher shares for low income states.

Table 3.6: State wise Share in Central Taxes and Grants Recommended by the Finance Commission

(Percentage Share)

States	First	Second	Third	Fourth	Fifth	Sixth
	1	2	3	4	5	6
General Category States						
Andhra Pradesh	4.3	8.6	9.4	8.1	7.8	8.1
Bihar	11.9	9.1	7.8	6.9	9.6	9.0
Chhattisgarh	0.0	0.0	0.0	0.0	0.0	0.0
Goa	0.0	0.0	0.0	0.0	0.0	0.0
Gujarat	0.0	3.3	6.5	4.2	4.3	4.0
Haryana	0.0	0.0	0.0	1.2	1.4	1.3
Jharkhand	0.0	0.0	0.0	0.0	0.0	0.0
Karnataka	1.4	7.2	6.2	7.5	4.6	4.1
Kerala	0.9	3.6	5.3	6.6	4.4	4.9
Madhya Pradesh	6.0	6.8	6.6	5.6	6.4	5.9
Maharashtra	16.8	10.3	9.0	8.9	9.1	7.7
Orissa	5.1	4.6	7.8	8.1	5.4	5.8
Punjab	5.3	5.0	4.5	2.2	2.1	1.8
Rajasthan	3.7	4.6	5.4	4.5	5.0	5.7
Tamil Nadu	10.1	6.8	7.0	7.1	7.0	5.8
Uttar Pradesh	16.7	13.2	11.2	12.9	14.5	14.3
West Bengal	13.4	9.9	7.1	6.7	8.4	8.5
Total	95.5	93.1	93.8	90.6	90.2	86.9
Special Category States						
Arunachal Pradesh	0.0	0.0	0.0	0.0	0.0	0.0
Assam	4.5	4.5	4.5	5.1	3.7	4.4
Himachal Pradesh	0.0	0.0	0.0	0.0	0.4	0.5
Jammu & Kashmir	0.0	0.9	1.0	1.1	1.3	2.1
Manipur	0.0	1.6	0.6	1.2	1.5	1.8
Meghalaya	0.0	0.0	0.0	0.0	0.6	1.2
Mizoram	0.0	0.0	0.0	0.0	0.2	0.7
Nagaland	0.0	0.0	0.1	0.8	0.1	0.1
Sikkim	0.0	0.0	0.0	1.2	1.5	1.2
Tripura	0.0	0.0	0.0	0.0	0.1	0.2
Uttaranchal	0.0	0.0	0.0	0.0	0.5	1.0
Total	**2.4**	**3.0**	**3.7**	**4.1**	**3.6**	**3.7**
Grand Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 3.6 (contd.): State wise Share in Central Taxes and Grants Recommended by the Finance Commission

(Percentage Share)

States	Seventh	Eighth	Ninth (1)	Ninth (2)	Tenth	Eleventh	Twelfth
	7	8	9 (1)	9 (2)	10	11	12
General Category States							
Andhra Pradesh	7.3	7.4	6.7	6.9	8.0	7.0	6.7
Bihar	10.7	10.8	10.7	10.6	10.8	12.8	10.1
Chhattisgarh	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Goa	0.0	0.0	0.2	0.3	0.2	0.2	0.2
Gujarat	4.7	3.8	3.2	3.5	3.9	2.7	3.4
Haryana	1.5	1.1	1.2	1.1	1.2	1.0	1.1
Jharkhand	0.0	0.0	0.0	0.0	0.0	0.0	3.1
Karnataka	4.9	4.4	4.3	3.9	4.6	4.5	4.2
Kerala	3.7	3.3	3.0	3.3	3.4	2.8	2.6
Madhya Pradesh	7.7	7.5	7.1	7.4	7.1	7.9	6.2
Maharashtra	8.3	6.8	6.8	5.9	6.0	4.4	4.8
Orissa	4.7	4.8	4.5	5.2	4.3	4.7	4.9
Punjab	2.0	1.6	2.0	1.6	1.6	1.3	1.7
Rajasthan	4.4	4.3	4.8	6.1	5.0	5.4	5.2
Tamil Nadu	7.3	6.3	6.5	5.9	5.9	4.9	4.9
Uttar Pradesh	16.0	15.6	16.0	16.4	15.9	17.7	17.8
West Bengal	7.7	8.6	7.0	7.0	6.6	8.1	6.8
Total #	**90.7**	**86.4**	**83.9**	**85.2**	**84.7**	**85.4**	**86.0**
Special Category States							
Arunachal Pradesh	0.0	0.0	1.1	0.8	0.8	0.6	0.5
Assam	2.5	4.0	4.1	3.7	3.7	3.0	3.2
Himachal Pradesh	0.5	1.4	1.2	1.4	1.7	0.6	1.8
Jammu & Kashmir	1.7	2.4	2.5	2.6	3.1	2.4	2.7
Manipur	1.1	1.6	2.1	1.7	1.4	3.4	0.9
Meghalaya	0.9	1.0	0.9	0.9	0.9	0.8	0.6
Mizoram	0.4	0.3	0.9	0.8	0.8	0.6	0.6
Nagaland	0.1	0.8	1.2	1.1	1.2	0.7	0.9
Sikkim	1.0	0.6	0.8	0.5	0.5	1.1	0.2
Tripura	0.4	1.0	0.8	1.0	1.1	0.7	1.1
Uttaranchal	0.6	0.4	0.6	0.4	0.3	0.7	1.6
Total	**4.4**	**9.8**	**9.2**	**10.4**	**12.2**	**6.1**	**6.7**
Grand Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Vithal and Sastry (2001) upto the Tenth Finance Commission, and Reports of the later Finance Commission

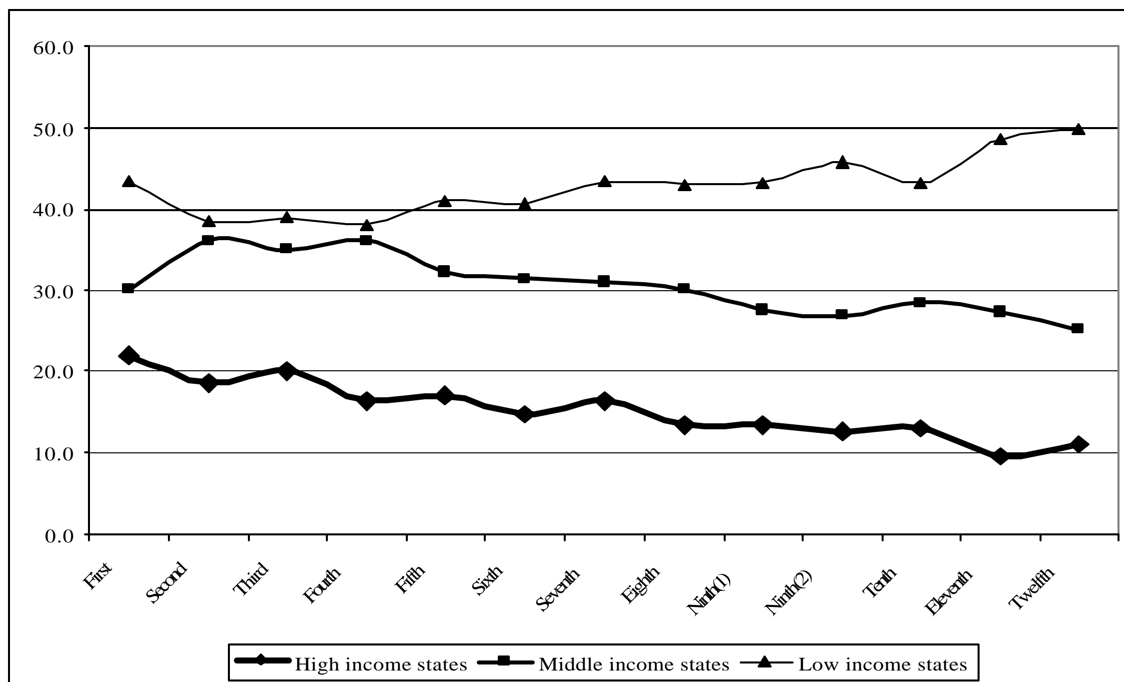

Chart 3.4: Share of High, Middle, and Low Income General Category States: Long Term Trends

Chart 3.4 shows that over the periods covered by the Twelve Finance Commissions, initially, up to the Third Finance Commission, in spite of having a relatively larger share of population, the share of the low income states (Bihar, Uttar Pradesh, Orissa, Madhya Pradesh, and Rajasthan) taken together was only marginally higher than that of the middle income states (West Bengal, Andhra Pradesh, Karnataka, Kerala and Tamil Nadu). Since the Fourth Finance Commission, there has been an increase in the share of the low income states with a corresponding fall in the share of both the middle income states and the high income states (Goa, Gujarat, Haryana, Maharashtra and Punjab). After the recent bifurcation of the states, we have included Chhattisgarh and Jharkhand in the low income states for the sake of comparability. In the periods covered by the Seventh, Ninth (First Report), and Eleventh Finance Commissions, this movement has been somewhat more pronounced.

3.6 Conclusions

The finances of the central and the state governments went into revenue deficit on permanent basis since 1979-80 for the centre, 1987-88 for the states considered together,

and 1982-83 for their joint account. These accounts have remained in such deficit until 2006-07. At its peak, the combined revenue deficit was close to 6.9 percent of GDP in 2001-02. After that there has been an improvement. Large revenue deficits have made the task of achieving vertical balance through fiscal transfers quite difficult. By implication the centre had to rely relatively more on fiscal deficit.

There is a steady improvement in the share of transfers as percentage of centre's gross revenue receipts. From the level of about 25 percent under the Third Finance Commission, this share has increased to 39.1 percent for the Ninth Finance Commission period and may turn out to be above 40 percent for the Twelfth Finance Commission period.

The share of the centre and the states in the combined revenue receipts before transfers and after transfers get completely reversed. Before transfers, centre's share has been in the range of 61-66 percent from the Second Finance Commission period onwards. However, after transfers centre's share in the combined revenue receipts has been in the range of 36-37 percent on an average. The share of combined revenue receipts available to the centre has fallen over time from the Seventh Finance Commission period onwards when it was about 44 percent to about 37 percent in the Twelfth Finance Commission period. State's share in the combined revenue receipts on the other hand has increased from 56 to 64 percent between the Seventh and the Twelfth Finance Commission periods. The relative shares in revenue expenditures, however, have remained stable throughout the period covered by the First to Twelfth Finance Commission periods. States' share in revenue expenditure throughout this period has been on average at about 57 percent whereas that of centre has been at 43 percent with small variations. A falling share in revenue receipts after transfers for the centre while maintaining a stable share in revenue and total expenditure can only imply that centre's share in borrowing must have increased over these years.

Looking at the state-wise picture of transfers recommended by the Finance Commissions including share in taxes as well as Finance Commission grants, the trend

seems to be that Finance Commission transfers have moved in favour of lower income states whereas the share of middle incomes states fell marginally and that of high income state have fallen even more. This indicates that for the more recent Finance Commissions particularly from the Seventh Finance Commission onwards, there has been an attempt at achieving a greater degree of equalization. It may also imply a response to increasing inequalities in per capita incomes across states.

On the overall strategy in determining fiscal transfers to the states by the successive Finance Commissions the following observation can be made:

a. The central taxes empirically proved to be more buoyant over time as a result the share of central taxes in the combined tax revenue was progressively increasing. The Finance Commissions recognized that the states had relatively larger expenditure responsibilities, and by increasing the share in the sharable pool of central taxes, the Finance Commissions were able to stabilise the respective relative shares in expenditures.
b. There was a conscious effort on the part of some of the Commissions to increase the share of tax devolution in total transfers because they considered that this was a more non-discretionary route to transfers which also automatically adjust to changes in economic conditions effecting growth and tax performance.
c.

Chapter 4

Projections of Central Taxes by the Finance Commission: Measuring Accuracy

4.1 Finance Commission Forecasts of Central Tax Revenues

Under the constitutional provisions, the Finance Commissions are required to determine the shares of divisible central taxes for each state. However, in order to determine the grants under article 275, the Finance Commissions follow a methodology that requires that the absolute levels of the shares of central taxes that will accrue to the states be forecasted. This is because the revenue gap grants are determined as the difference between the assessed needs and assessed own tax and non-tax revenues as well as the respective shares in central taxes during the recommendation period. The quality of the forecasts of central taxes is quite important for the determination of the amount of grants that are fixed in nominal terms. If the share of states in the central taxes is overestimated, grants would be less than what is actually required. If, on the other hand, states' shares in central taxes are underestimated, larger grants would be recommended as compared to what is actually required. In this chapter, we compare the forecasts of central taxes against the corresponding actuals in order to assess the quality of forecasts of the Finance Commissions over the years.

4.2 Methodology of Forecast Evaluation

In this section, we briefly describe the methodology for measuring forecast errors and the diagnostic checks used for this analysis.

a. Summary Measures

Once a forecast series P_t and a series of realizations A_t for $t = 1,2,\ldots n$ are available, there are various ways to describe how closely the predictions emulate the

realizations. Many of the descriptive measures of forecast accuracy can be defined with reference to levels of variables as well as changes in the levels.

a1. Correlation Coefficient between Predictions and Realizations

The correlation coefficient between the two series indicates how closely the two series move together. The properties of this measure, viz. that it is independent of the origin and unit of measurement, render it somewhat inappropriate in the context of measuring forecast accuracy. These properties imply that if all the forecasts were multiplied by a constant or a constant was added to these, the measure would not reflect the higher errors. The implicit scale of the measure from a minimum of (-) 1 to a maximum of 1, however, remains a useful property.

a2. Average Absolute Error

Average absolute error is defined as $\Sigma |(P_t - A_t)|$. It has a minimum value of zero when all $P_t = A_t$. It has no maximum value and it is not able to distinguish between turning point errors and ordinary errors.

a3. Mean Square and Root Mean Square Errors

These measure are respectively defined as

$$Mp = [\ 1/n\ \Sigma\ ((P_t - A_t)^2\ ] \text{ and } RMSQ = v\ Mp$$

They also have a minimum value of zero in the case of perfect forecasts. There is no upper limit. Their inadequacy lies in not having a proper unit of measurement. They give the same weight to a deviation whether a variable is measured in rupees or crore of rupees or percentages. They however, have interesting mathematical and statistical properties and lend themselves to useful decompositions.

a4. Inequality Coefficients

The inequality coefficients [Theil (1961, 1966)] as defined below are based on the mean square error. But, in addition, they provide a suitable unit of measurement. They may be defined with respect to levels as well as changes in levels [4].

$$\text{Levels: } U = [\Sigma\ ((P_t - A_t)^2 / \Sigma\ A_t^2\ ]^{½}$$

Most of the statistics defined above have an implicit quadratic cost of error function and lead to a least squares ranking criterion. This has attractive properties.

a5. Limitations of Comparisons and Realizations

The intuitive basis of these measures is the belief that the more closely predictions follow realizations, the better they are. This must however be qualified by the consideration that for all stochastic processes, forecasts will be made with errors even if all the information in the universe is used (Granger, 1973). In such a case, optimal predictors are not necessarily those where the variances of predictions are equal to the variance of realizations. The point has been illustrated by decomposing the expected squared forecast error in the following manner

$$S = E\ (P- A)^2 = (\mu_P - \mu_A)^2 + s^2_P + s^2_A - 2\ ?\ s_P\ s_A$$

where $\mu_{P,}$ μ_A and o_p and o_A are respectively the population means and variances of predictions and realizations and ? is the correlation coefficient. Assuming S to be a function of μ_P, o_p and ?, the following necessary conditions for minimizing S can be obtained. Thus S is minimised by taking ? as large as possible with $\mu_P = \mu_A$ and $o_p = ?\ o_A$. Thus, whereas the mean of the two series should coincide, the variances need not be equal.

---

[4] With respect to changes, Theil's inequality coefficient may be defined as follows:

$$U_{c1} = \frac{[S\ (\Delta\ P_t - \Delta\ A_t)^2]^{½}}{(S\ \Delta\ A_t^{\ 2})^{½}}$$

b. Diagnostic Checks on Forecasts

Apart from ranking forecasts, a comparison of predictions and realizations may also be used for diagnostic checks on the forecasting procedures with a view to modify. Some insight into the nature of prediction errors is obtained by regressing realizations as shown in chart 4.1.

$$A_t = \alpha + \beta P_t + U_t$$

A zero value of α means that the regression line passes through the origin, and a unit value of β means that it coincides with the line of perfect forecasts (LPF). In the case of unit correlation between P_t and A_t, we expect the two means to coincide ($\mu_P = \mu_A$) and $\beta = 1$. Thus, the non-zero values of α and non-unity values of β have been interpreted as 'systematic' errors in the forecast.

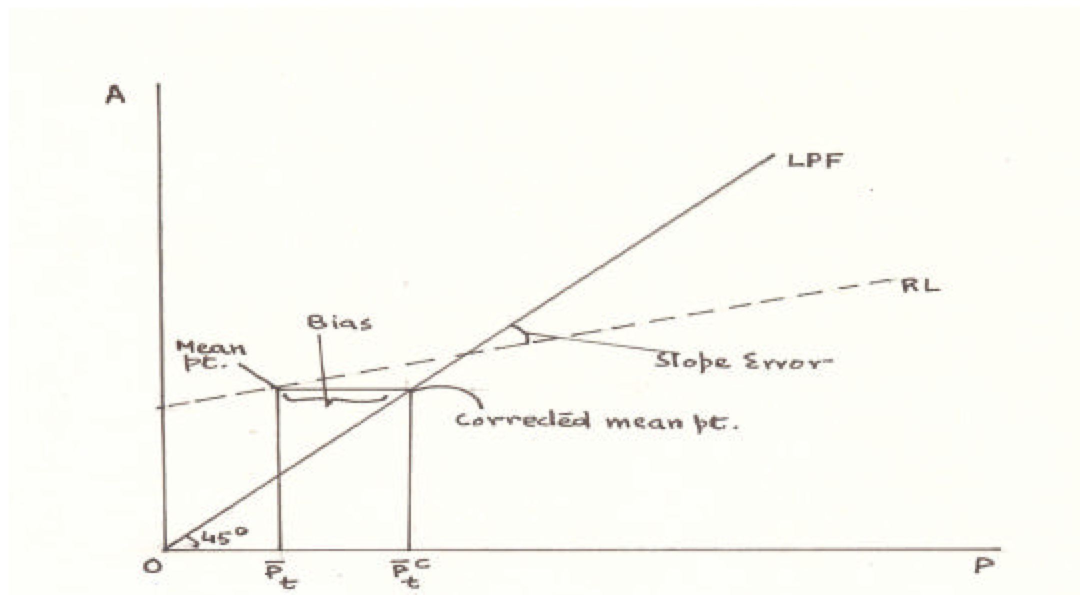

Chart 4.1: Errors of Bias and Slope

We observe that the mean point (μ_P, μ_A) does not lie on the LPF. This is a source of systematic bias and can be removed by shifting the regression line until the mean point lies on the LPF. As it is desirable for the mean point to be on the LPF, so also it is

intuitively desirable that the whole regression line coincides with the LPF. If this is so, the forecast is called efficient (Mincer and Zarnotwitz, 1969).

b1. Decomposition of Mean Square Error

Theil (1961) has suggested that the mean square error M_P can be decomposed as follows

$$M_P = (\mu_P - \mu_A)^2 + (S_p - r\, S_A)^2 + (1- r^2)S^2_A$$

where μ_P and μ_A are the sample means of predictions and realizations, S_P and S_A are their standard deviations and r is the correlation coefficient between them. The division of the terms on the right-hand side by the mean square error gives rise to the following quantities which have been called 'inequality proportions'

$U^M = (\mu_P - \mu_A)^2 / M_P$ mean proportion

$U^R = (S_P - r\, S_A)^2 / M_P$ slope proportion

$U^D = (1-r^2)\, S^2_A / M_P$ disturbance proportion

The terms thus provide information on the relative importance of different sources of error rather than another. The mean proportion has a positive value if $\mu_P \neq \mu_A$. This is due therefore to 'bias'. The deviation of S_P from $r\, S_A$ is due to slope error, and the third term is a disturbance component.

4.3 Analysing Forecast Errors of Central Tax Revenues by Finance Commissions

For looking at the quality of forecasts implicit in the assessments undertaken by the Finance Commissions, we consider recommendation periods under the Ninth to Twelfth Finance Commissions. For the Seventh and Eighth Commissions, there is information only about the assumed growth rates for given central taxes. For the Ninth Finance Commission, the First Report covered one year (1989-90) and the Second Report, five years (1990-95). For the Twelfth Finance Commission, we consider the first three years viz., 2005-06 to 2007-08. In all cases we make a comparison of Finance

Commission forecasts of central tax revenues against the corresponding actuals. This exercise has been done for the following taxes: income tax, corporation tax, union excise duties, customs duties and centre's total gross tax revenues.

a. Income Tax

Table 4.1 gives a comparison of income tax revenues as projected by the Finance Commissions against the corresponding actuals alongwith the absolute and percentage errors involved in these projections. For the Ninth Finance Commission period, there was an underestimation of income tax revenues in all the years. This underestimation grew over time and it was as high as 43 percent by 1994-95, which was the last year of the projection period. For the Tenth Finance Commission period also, there was implicit underestimation but the extent of error was comparatively less ranging from a minimum of 1.6 percent to a maximum of 19.3 percent. For the Eleventh Finance Commission period, the nature of error changed. The Finance Commission overestimated the income tax revenue of the central government in four out of five years. However, for the first year, the forecast was very close to the actuals, the extent of error being 0.5 percent. For the remaining four years the extent of overestimation ranged from 17.3 to 27.9 percent. For the Twelfth Finance Commission, the extent of error is negligible for the first year being close to zero percent. For the second and third years, there is an underestimation. Chart 4.2 indicates the departures of Finance Commission projections against the actuals. Chart 4.3 gives the percentage error for projections for income tax revenues. The percentage error was less than 5 percent only in two years during the period from 1989-90 to 2007-08. It was between 8 to 10 percent in only one year. It was between 10 to 20 percent in five years. In all the remaining years, the forecast error was higher than 20 percent.

Table 4.1: Forest Errors: Income Tax

(Rs. crore)

Years	FC Projections (P)	Actuals (A)	A-P	(A-P)/A (%)
1989-90	3915	5004.0	1089.0	21.8
1990-91	4670	5377.1	707.1	13.2
1991-92	5136	6731.1	1595.1	23.7
1992-93	5650	7895.7	2245.7	28.4
1993-94	6215	9122.6	2907.6	31.9
1994-95	6837	12029.3	5192.3	43.2
1995-96	12860	15591.8	2731.8	17.5
1996-97	14712	18231.0	3519.0	19.3
1997-98	16831	17097.0	266.0	1.6
1998-99	19154	20240.3	1086.3	5.4
1999-00	21682	25654.5	3972.5	15.5
2000-01	31590	31764.0	174.0	0.5
2001-02	37545	32004.0	-5541.0	-17.3
2002-03	44622	36866.0	-7756.0	-21.0
2003-04	53033	41387.0	-11646.0	-28.1
2004-05	63030	49268.0	-13762.0	-27.9
2005-06	55981	55985.0	4.0	0.0
2006-07	65386	75093.0	9707.0	12.9
2007-08	76371	118320.0	41949.0	35.5

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

Table 4.2 gives Commission wise summary statistics for the extent of error in regards to income tax in terms of the root mean square error and Theil inequality coefficient. Measured by these, the best forecasts are given by the Tenth Finance Commission followed by Eleventh and Twelfth Finance Commissions. Among these four Commissions, as far as income tax is concerned, the least satisfactory forecast was given by the Ninth Finance Commission. It will further be seen that the most important reason for forecast error was mis-prediction of the mean of the forecasted variable. Error of bias (difference between predicted and actual means) is able to explain 71 to 74 percent of the mean square error.

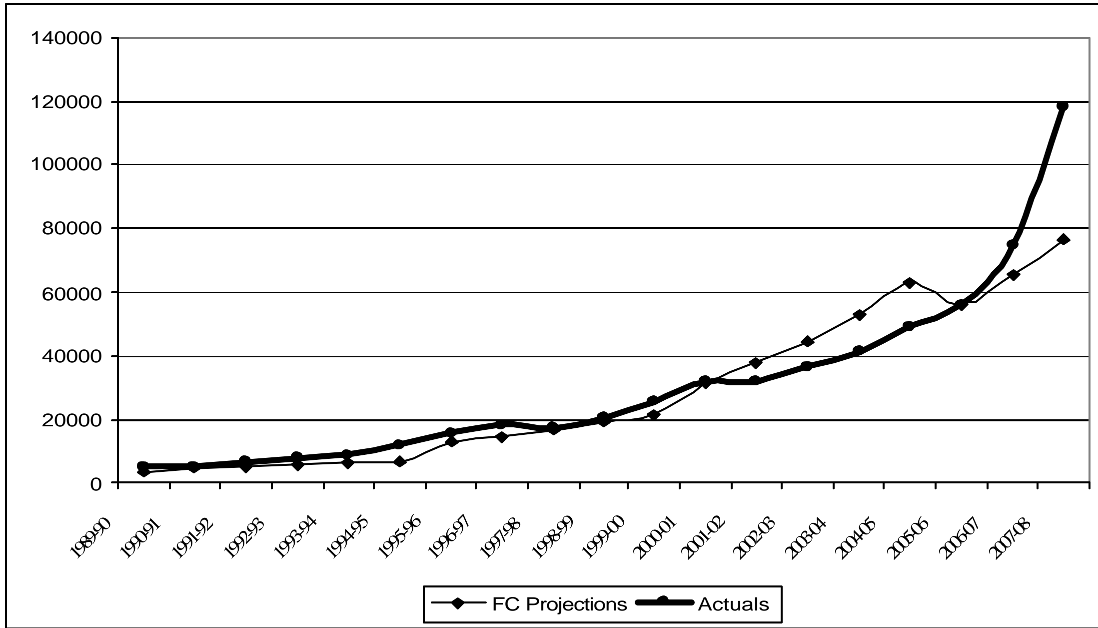

Chart 4.2 : Income Tax: FC Projections and Actuals

As for as the Eighth, Ninth and the Eleventh Finance Commissions are concerned the least bias is shown by the Twelfth Finance Commission but even here it accounts for 50 percent of the mean square error. The forecast done by Tenth Finance Commission was the most efficient in the sense that the slope error was close to zero. The contribution of the slope error is the highest for the Twelfth Finance Commission.

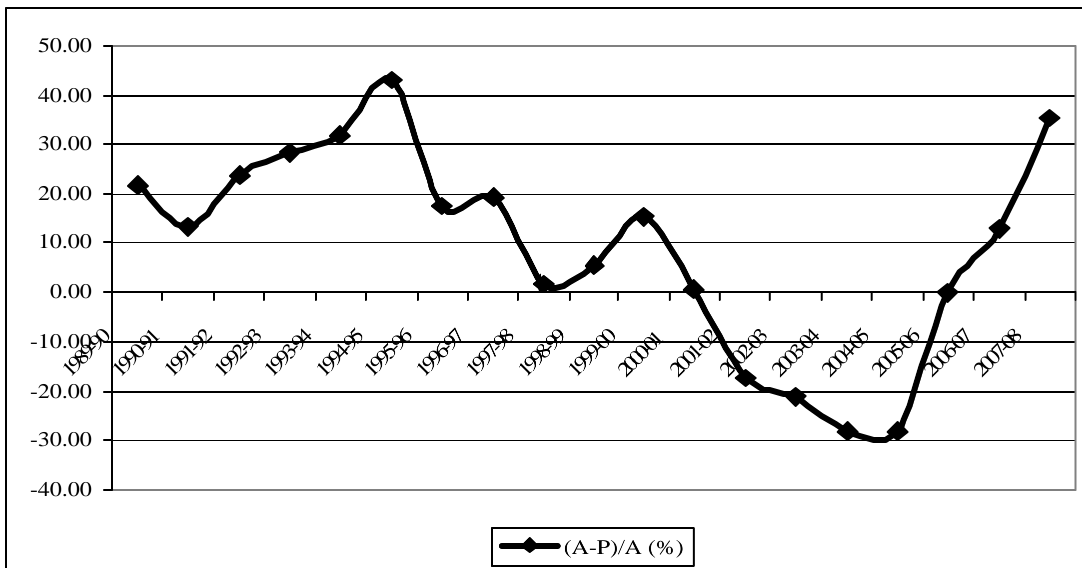

Chart 4.3 : Income Tax: Percentage Error

Table 4.2: Income Tax: Forecast Errors: Summary Measures

Forecast Evaluation Measures	Ninth (Second Report)	Tenth	Eleventh	Twelfth (3 years)
RMSQ	2949.6	2715.8	9120.4	24859.2
Theil Inequality Coefficient	0.345	0.138	0.235	0.285
Decomposition of Mean Square Error				
Bias	0.735	0.727	0.714	0.480
Slope	0.249	0.001	0.267	0.487
Covariance	0.0157	0.2728	0.0188	0.0334
Sum	1.000	1.000	1.000	1.000

Source (Basic Data): As in Table 4.1.

b. Union Excise Duties

Until the 80th constitutional amendment, which made the sharing of all central taxes possible with the states, the Union excise duties provided the other important shareable tax for the state governments. Leaving 1989-90 (First Report of the Ninth Finance Commission), for all the years during 1990-91 to 2007-08, revenues from the Union excise duties were over-projected by the Finance Commissions and there was always a shortfall in the actuals as compared to the projected amounts (Table 4.3). The extent of this shortfall was the highest for the Tenth and Eleventh Finance Commissions and more limited for the Ninth and Tenth Finance Commission periods. There are four years out of this period when the forecast error was less 5 percent of the corresponding actual. Chart 4.4 shows that the projected tax revenues were almost always higher than the corresponding actuals and that the error was least in the initial years of the Finance Commission award periods. The extent of error progressively increased as time increased and this pattern is repeated for all the four Finance Commission studied here.

Table 4.3: Forecast Errors: Union Excise Duties

(Rs. crore)

Years	FC Projections (P)	Actuals (A)	A-P	(A-P)/A (%)
1989-90	20670	22406.3	1736.3	7.75
1990-91	25426	24514.4	-911.6	-3.7
1991-92	28477	28109.8	-367.2	-1.3
1992-93	31894	30831.5	-1062.5	-3.4
1993-94	35721	31696.6	-4024.4	-12.7
1994-95	40008	37347.2	-2660.8	-7.1
1995-96	45822	40187.3	-5634.8	-14.0
1996-97	52420	45007.8	-7412.2	-16.5
1997-98	59969	47961.6	-12007.4	-25.0
1998-99	68245	53246.2	-14998.8	-28.2
1999-00	77254	61901.8	-15352.2	-24.8
2000-01	73452	68526.1	-4925.9	-7.2
2001-02	84911	72555.0	-12356.0	-17.0
2002-03	98157	82310	-15847.0	-19.3
2003-04	113469	90774	-22695.0	-25.0
2004-05	131170	99125	-32045.0	-32.3
2005-06	114741	111226	-3515.0	-3.2
2006-07	127133	117613	-9520.0	-8.1
2007-08	140864	127947	-12917.0	-10.1

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

Chart 4.5 shows the pattern of percentage error for the Union excise duties. The summary measures of forecast error indicate that in terms of the Theil inequality coefficient, the smallest error were for the Ninth and Twelfth Finance Commission periods. The magnitudes of errors are particularly large for the last 3 years of both the Tenth and Eleventh Finance Commission periods. An analysis of the mean square error in terms of decomposition once again shows that the systematic error of bias in mis-predicting the mean of the forecasted series was very largely responsible for the forecast errors (Table 4.4).

Table 4.4: Union Excise Duties: Forecast Errors: Summary Measures

Forecast Evaluation Measures	Ninth (Second Report)	Tenth	Eleventh	Twelfth (3 Years)
RMSQ	2252.6	11760.3	19849.5	9483.9
Theil Inequality Coefficient	0.073	0.234	0.238	0.080
Decomposition of Mean Square Error				
Bias	0.642	0.888	0.784	0.832
Slope	0.202	0.104	0.214	0.162
Covariance	0.1556	0.0086	0.0024	0.0059
Sum	1.000	1.000	1.000	1.000

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

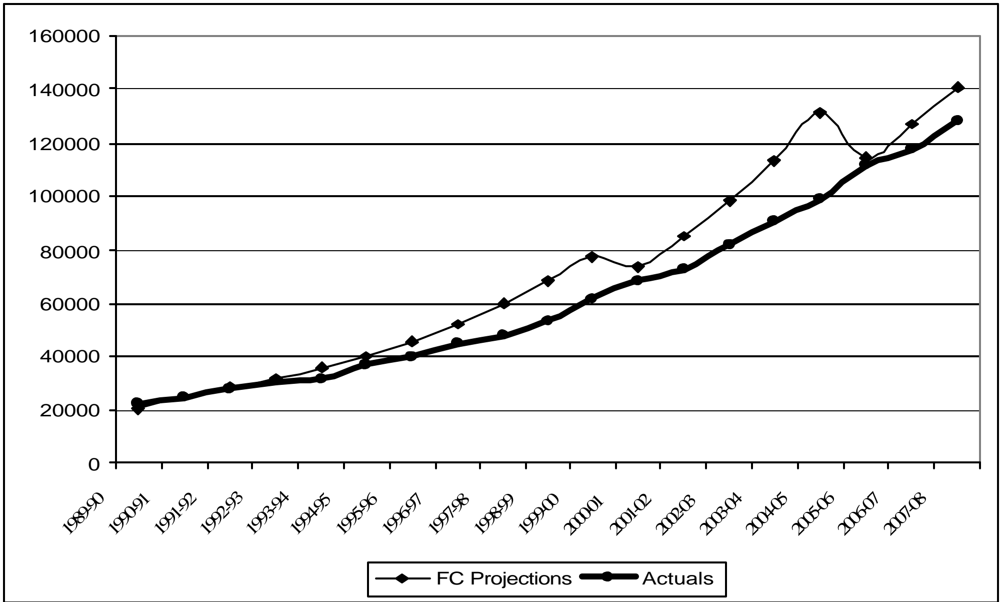

Chart 4.4 : Union Excise Duties: FC Forecasts and Actuals

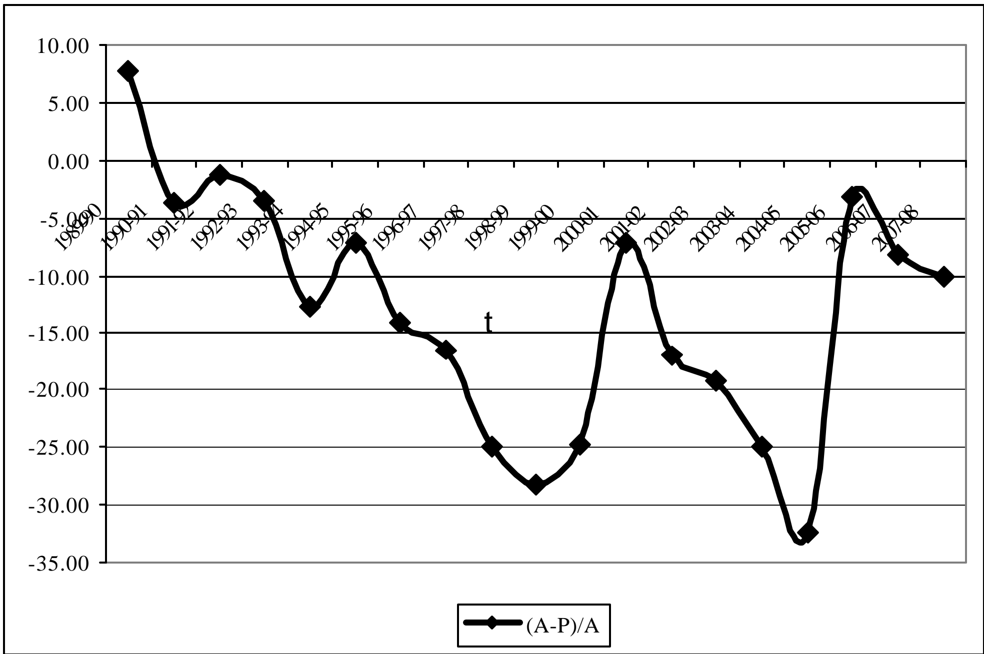

Chart 4.5 : Union Excise Duties: Percentage Error

c. Corporation Tax

Table 4.5 indicates the forecast errors in the case of corporation tax. For the corporation tax, the projection errors were smallest for the projections given by the Tenth Finance Commission although all of these represented underestimation (Charts 4.6 and

4.7). For the Eleventh Finance Commission, for four out of five years there were over-projections. For the Ninth and Twelfth Finance Commissions there was under-projection and the magnitude of errors seem to increase in the later years of the respective recommendation periods. Except for the Eleventh Finance Commission, as shown by Table 4.6, the bias error was rather large for the Ninth, Tenth and Twelfth Finance Commissions and the slope error is relatively high for the Twelfth Finance Commission.

Table 4.5: Forecast Errors: Corporation tax

Years	FC Projections (P)	Actuals (A)	A-P	(A-P)/A (%)
1989-90	4630.0	4728.9	98.9	2.1
1990-91	5326.0	5335.3	9.3	0.2
1991-92	5965.0	7853.0	1888.0	24.0
1992-93	6681.0	8898.5	2217.5	24.9
1993-94	7483.0	10060.1	2577.1	25.6
1994-95	8381.0	13821.8	5440.8	39.4
1995-96	14586.0	16487.1	1901.1	11.5
1996-97	16949.0	18566.6	1617.6	8.7
1997-98	19695.0	20016.0	321.0	1.6
1998-99	22753.0	24529.1	1776.1	7.2
1999-00	26132.0	30692.3	4560.3	14.9
2000-01	37978.0	35696.3	-2281.7	-6.4
2001-02	45384.0	36609.0	-8775.0	-24.0
2002-03	54233.0	46172.0	-8061.0	-17.5
2003-04	64809.0	63562.0	-1247.0	-2.0
2004-05	77447.0	82680.0	5233.0	6.3
2005-06	96845.0	101277.0	4432.0	4.4
2006-07	116601.0	144318.0	27717.0	19.2
2007-08	140388.0	186125.0	45737.0	24.6

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

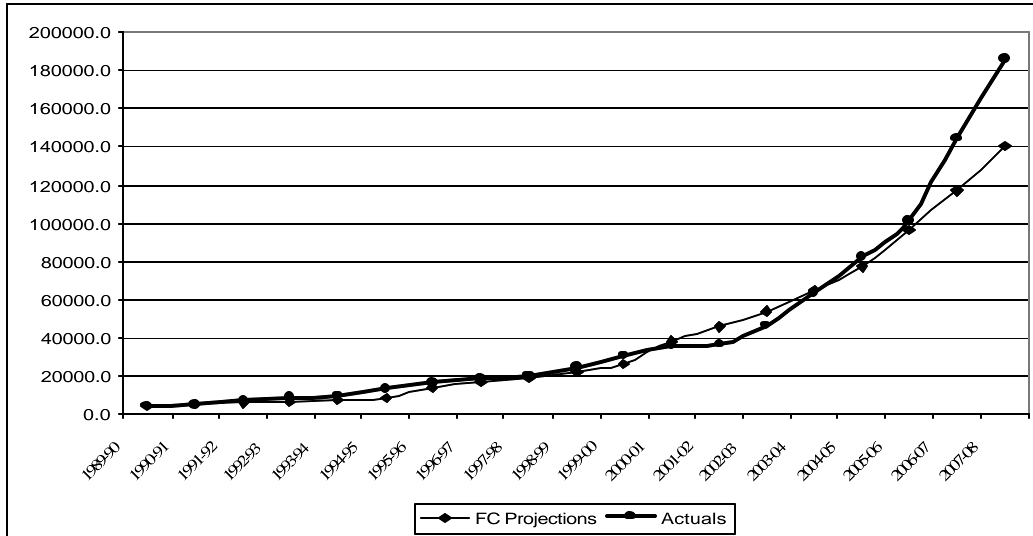

Chart 4.6 : Corporation Tax: FC Forecasts and Actuals

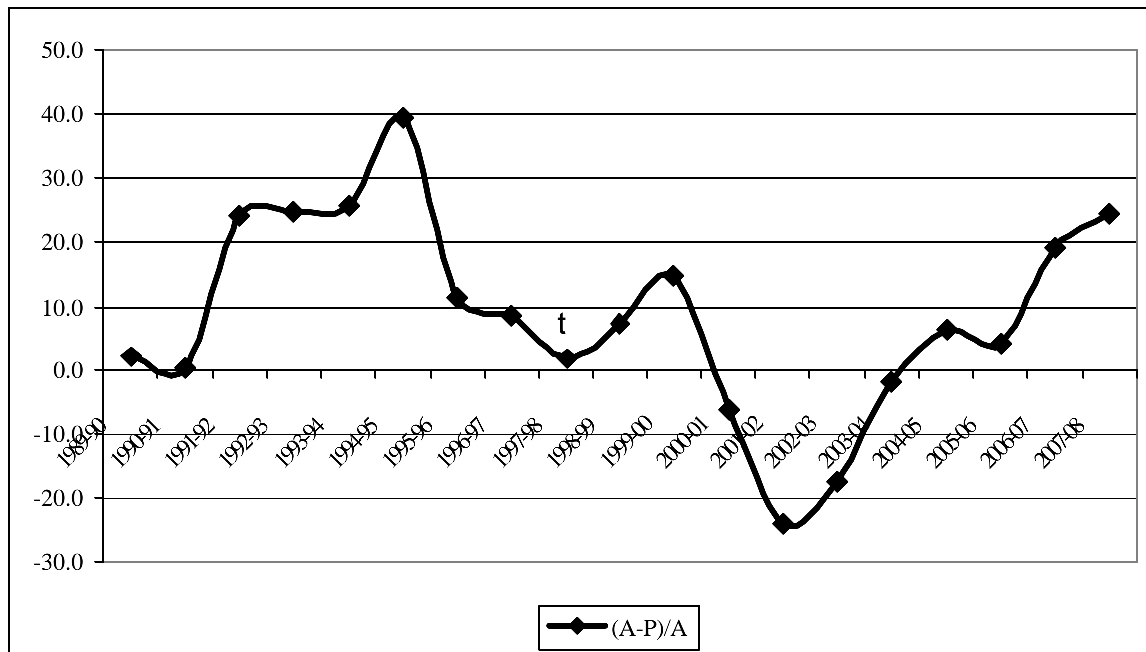

Chart 4.7 : Corporation Tax: Percentage Error

Table 4.6: Corporation Tax: Forecast Errors: Summary Measures

Forecast Evaluation Measures	Ninth (Second Report)	Tenth	Eleventh	Twelfth (3 Years)
RMSQ	2990.8	2461.1	5935.1	30982.5
Theil Inequality Coefficient	0.311	0.109	0.106	0.209
Decomposition of Theil Inequality Coefficient				
Bias	0.658	0.684	0.260	0.702
Slope	0.303	0.118	0.361	0.293
Covariance	0.0383	0.1984	0.3792	0.0048
Sum	1.000	1.000	1.000	1.000

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

d. Customs Duties

In the case of customs duties, out of the nineteen years under consideration, there was an underestimation for twelve years. This related to most of the years covered by the Ninth Finance Commission, all the years covered by the Eleventh Finance Commission and two of the years covered by the Tenth Finance Commission. It is clear that the impact of custom duty reforms undertaken in the nineties, particularly since the latter half of the nineties, where the peak tariff rates were brought down significantly to bring these in line with internationally more competitive levels, was not fully taken into account by the Finance Commissions. In fact, for the years covered by the Eleventh Finance Commission, the errors have been as large as 52 -65 percent (Table 4.7). Charts 4.8 and 4.9 provide a comparison of projections of customs duty revenues by the Finance Commission and the corresponding actuals and the related percentage errors, respectively.

Table 4.7: Forecast Errors: Customs Duty Revenues

(Rs. crore)

Years	FC Projections (P)	Actuals (A)	A-P	(A-P)/A (%)
1989-90	18529	18036.13	-492.87	-2.73
1990-91	20473	20643.8	170.8	0.8
1991-92	23441	22256.7	-1184.3	-5.3
1992-93	26840	23776.4	-3063.6	-12.9
1993-94	30732	22192.7	-8539.3	-38.5
1994-95	35188	26789.1	-8398.9	-31.4
1995-96	29901	35756.8	5855.8	16.4
1996-97	34208	42851.0	8643.0	20.2
1997-98	39135	40192.8	1057.8	2.6
1998-99	44537	40668.3	-3868.7	-9.5
1999-00	50417	48420.0	-1997.0	-4.1
2000-01	53572	47542.2	-6029.8	-12.7
2001-02	61233	40268.0	-20965.0	-52.1
2002-03	69989	44852	-25137.0	-56.0
2003-04	79998	48629	-31369.0	-64.5
2004-05	91437	57611	-33826.0	-58.7
2005-06	58156	65067	6911.0	10.6
2006-07	62343	86327	23984.0	27.8
2007-08	66832	100766	33934.0	33.7

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

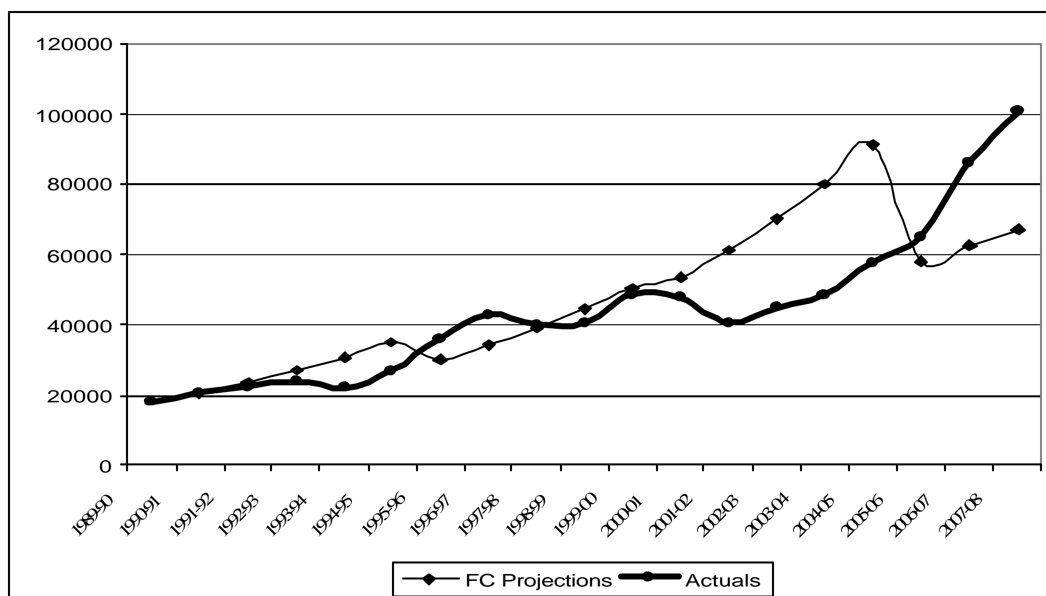

Chart 4.8: Custom Duty Revenues: FC Forecasts and Actuals

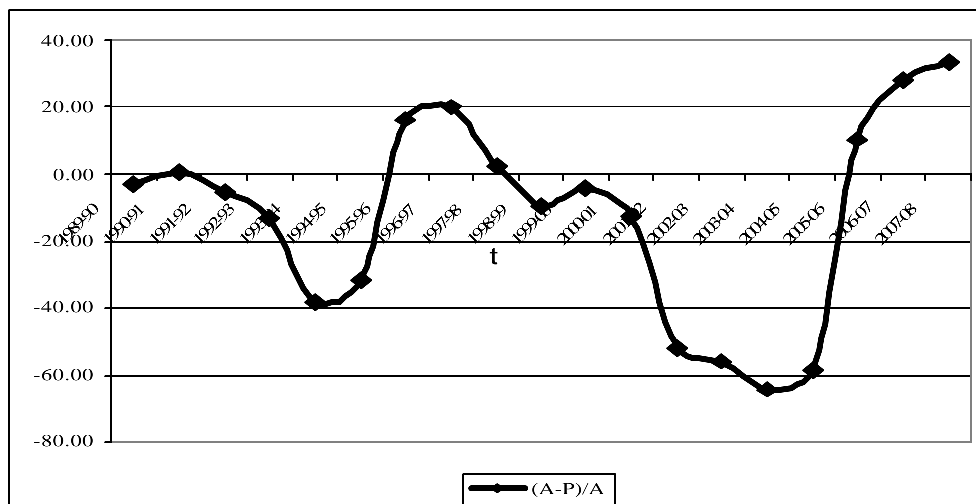

Chart 4.9 : Customs Duties : Percentage Error

An analysis of the decomposition of the summary measures of forecast errors indicates that the error of bias, i.e., mis-prediction of the means accounted for nearly 85 percent of the total error as far as the Eleventh Finance Commission was concerned. In the case of the Twelfth Finance Commission also, although we now have a case of over estimation, the error of bias accounts for nearly 79 percent of the total error (Table 4.8).

Table 4.8: Customs Duty Revenues: Forecast Errors: Summary Measures

Forecast Evaluation Measures	Ninth (Second Report)	Tenth	Eleventh	Twelfth (3 years)
RMSQ	5554.8	5080.7	25440.0	24320.8
Theil Inequality Coefficient	0.239	0.122	0.529	0.285
Decomposition of Theil Inequality Coefficient				
Bias	0.573	0.146	0.851	0.789
Slope	0.387	0.615	0.128	0.204
Covariance	0.0405	0.2393	0.0215	0.0061
Sum	1.000	1.000	1.000	1.000

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

e. Total Central Tax Revenues

While the quality of projections of individual taxes like income tax and Union excise duties was material upto the Ninth Finance Commission, since the application of

the global sharing mechanism of all central taxes except earmarked cesses and surcharges after the 80th Constitution amendment, it is the quality of projection of the overall central tax revenues, which is critical. Some of the individual errors of over-estimation and under estimation may cancel out and for the central tax revenues as a whole the mis-prediction may be more limited in its impact. Table 4.9 and Chart 4.10 give a comparison of Finance Commission projections and corresponding actuals for total central tax revenues.

Table 4.9: Forecast Errors: Total Central Tax Revenues

(Rs. crore)

Years	Total Central Tax Revenues			
	FC Projections (P)	**Actuals (A)**	**A-P**	**(A-P)/A (%)**
1989-90	49000.0	51636.0	2636.0	5.1
1990-91	57356.0	57577.0	221.0	0.4
1991-92	64670.0	67361.0	2691.0	4.0
1992-93	72931.0	74636.0	1705.0	2.3
1993-94	82260.0	75742.0	-6518.0	-8.6
1994-95	92797.0	92297.0	-500.0	-0.5
1995-96	106022.0	111224.0	5202.0	4.7
1996-97	121637.0	128762.0	7125.0	5.5
1997-98	139559.0	139221.0	-338.0	-0.2
1998-99	159299.0	143797.0	-15502.0	-10.8
1999-00	180894.0	171752.0	-9142.0	-5.3
2000-01	198226.0	188603.0	-9623.0	-5.1
2001-02	230961.0	187060.0	-43901.0	-23.5
2002-03	269185.0	216266.0	-52919.0	-24.5
2003-04	313833.0	254348.0	-59485.0	-23.4
2004-05	366002.0	304958.0	-61044.0	-20.0
2005-06	343703.0	366151.0	22448.0	6.1
2006-07	393140.0	473512.0	80372.0	17.0
2007-08	450597.0	585410.0	134813.0	23.0

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

The percentage errors (Chart 4.11) for the Ninth Finance Commission period were limited in the range of 0.4 percent to (-) 6.8 percent with signs changing within the forecast period. In the case of the Tenth Finance Commission, the errors range between (-) 10.8 percent to 5.5 percent with errors changing sign within the forecast period. For the Eleventh Finance Commission period, for all the years, there is an overestimation and errors range between (–) 5.1 to (–) 24.5 percent. For the Twelfth Finance Commission

also, the errors range between 6.1 to 23 percent for the three years considered here although these are cases of underestimation.

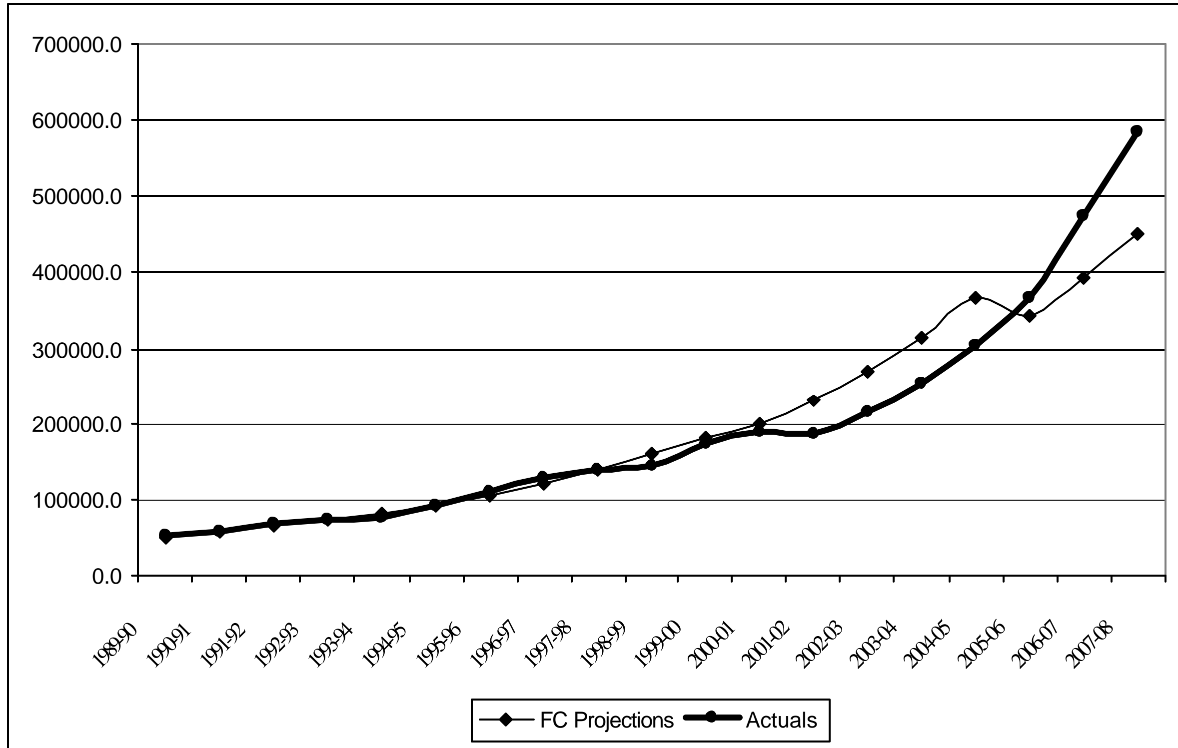

Chart 4.10: Total Central Tax Revenues: FC Forecasts and Actuals

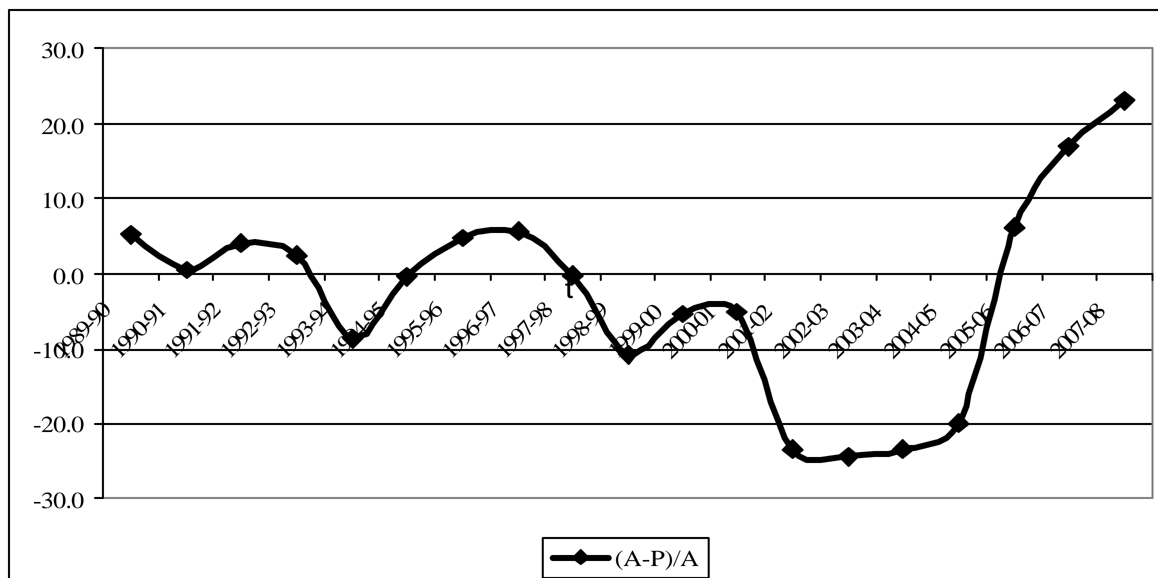

Chart 4.11: Total Central Tax Revenues: Percentage Error

Table 4.10: Total Central Tax Revenues: Forecast Errors: Summary measures

Forecast Evaluation Measures	Ninth (Second Report)	Tenth	Eleventh	Twelfth (3 Years)
RMSQ	3253.7	8964.7	49163.3	91538.9
Theil Inequality Coefficient	0.044	0.064	0.210	0.189
Decomposition of Theil Inequality Coefficient				
Bias	0.022	0.080	0.853	0.749
Slope	0.211	0.653	0.105	0.250
Covariance	0.7668	0.2675	0.0422	0.0009
Sum	1.000	1.000	1.000	1.000

Source (Basic Data): Budget Documents and Reports of the Finance Commission.

As indicated by Table 4.10, the error of bias was the largest for the Eleventh and Twelfth Finance commission whereas the slope error was the largest for the Tenth Finance Commission and the covariance error was the largest for the Ninth Finance Commission. In Table 4.11, we undertake an analysis as to whether the source of error was mis-prediction of growth rate of tax revenues or mis prediction of tax buoyancy. This analysis has been done for only the total central tax revenues. It can be seen that for the Ninth Finance Commission, it was the GDP growth rate that was under-projected and the buoyancy was over-predicted by a large margin. In the case of Tenth Finance

Commission, the nature of the error is the same although the differences are less. In the case of Eleventh Finance Commission, the underestimation arose primarily because the actual growth rate turned out to be much lower than what was assumed. In the early part of the decade, the Indian economy experienced low growth rates as well as low inflation rates.

Table 4.11: Analysis of Difference between Actual and Assumed Growth Rates and Buoyancies in Finance Commission Projections

Years	GDP growth rate assumed by Commission	Growth rate of total tax revenue in projections	Implicit buoyancy of tax revenue	Actual GDP growth rate	Growth rate of actual central tax revenue	Implicit buoyancy
	(percent per annum)		(units)	(percent per annum)		(units)
1990-91	11.0	17.05	1.55	16.80	11.51	0.68
1991-92	11.0	12.75	1.16	14.94	16.99	1.14
1992-93	11.0	12.77	1.16	14.95	10.80	0.72
1993-94	11.0	12.79	1.16	15.04	1.48	0.10
1994-95	11.0	12.81	1.16	17.32	21.86	1.26
Average	**11.00**	**13.64**	**1.24**	**15.81**	**12.53**	**0.78**
1995-96	12.5	15.32	1.23	17.33	20.51	1.18
1996-97	12.0	14.73	1.23	15.67	15.77	1.01
1997-98	12.0	14.73	1.23	10.77	8.12	0.75
1998-99	11.5	14.14	1.23	14.67	3.29	0.22
1999-00	11.0	13.56	1.23	11.47	19.44	1.70
Average	**11.80**	**14.50**	**1.23**	**13.98**	**13.43**	**0.97**
2000-01	13.0	16.62	1.28	7.70	9.81	1.27
2001-02	13.0	16.51	1.27	8.50	-0.82	-0.10
2002-03	13.0	16.55	1.27	7.76	15.61	2.01
2003-04	13.0	16.59	1.28	12.51	17.61	1.41
2004-05	13.0	16.62	1.28	13.06	19.90	1.52
Average	**13.00**	**16.58**	**1.28**	**9.91**	**12.42**	**1.22**
2005-06	12.0	20.07	1.67	14.51	20.07	1.38
2006-07	12.0	29.32	2.44	15.79	29.32	1.86
Average	**12.00**	**24.69**	**2.06**	**15.15**	**24.69**	**1.62**

Source (Basic Data): Finance Commission Reports and Central Budget Documents.

Note: For the first year of the forecasts of the Finance Commissions, we have taken the base year figures as estimated by the Finance Commissions rather than the forecast for the last year of the preceding Finance Commission. Detailed basic data are given in Appendix Table 4.1111.

The assumed buoyancy for the Eleventh Finance Commission period comes very close to the actual buoyancy. In the case of Twelfth Finance Commission, the growth rate is underestimated. None of the Finance Commissions are able to pick up the volatility in

GDP growth rates and also the volatility in tax buoyancies. They tend to assume constant or nearly constant growth rates as well as constant buoyancies. While this may be done, it is important to clearly identify whether the recommendation period will have years containing a large part of either a boom or a trough in respect of the growth of GDP.

4.4 Comparison of State's Own Tax Revenue Assessment with Actuals: Selected States

In this section, we look at the comparison of Finance Commission's assessments of own tax revenues of selected states and the corresponding actuals. For this analysis, we have selected four states, viz., Andhra Pradesh, Gujarat, Orissa, and Assam. These represent middle-, high-, low-income and special category states, respectively. It may be noted that the assessment of own tax revenue by a Finance Commission may not be taken as a forecast. Instead it should be taken as containing normative or prescriptive elements indicating what the concerned state is expected to raise in terms of own tax revenues following certain norms rather that what it is likely to raise. The departures of assessed amounts compared to the corresponding actual may be interpreted as underperformance or better than prescribed performance as the case may be.

a. Andhra Pradesh

In the case of Andhra Pradesh the comparison of Finance Commission projections with actuals indicates an interesting difference between the approaches of different Finance Commissions. While the Ninth, Tenth and Twelfth Finance Commissions had assessed own tax revenues of Andhra Pradesh at less than their actual tax effort. The Eleventh Finance Commission had prescribed tax performance much higher than what Andhra Pradesh was able to achieve. This pattern is summarised in Table 4.12 and Chart 4.12.

Table 4.12: Andhra Pradesh Own Tax Revenue: Finance Commission Projections and Actuals

(Rs. crore)

	FC Projections	Actuals	A-P	(A-P)/A (%)
1989-90	2465.4	2384.1	-81.2	-3.4
1990-91	2707.4	2647.2	-60.2	-2.3
1991-92	2973.3	3055.0	81.7	2.7
1992-93	3265.2	3388.7	123.5	3.6
1993-94	3585.8	3832.9	247.1	6.4
1994-95	3937.9	4227.4	289.6	6.9
1995-96	4232.3	4120.4	-111.9	-2.7
1996-97	4793.2	4881.8	88.6	1.8
1997-98	5432.6	7113.5	1680.9	23.6
1998-99	6131.4	7961.4	1830.0	23.0
1999-00	6889.7	9008.6	2119.0	23.5
2000-01	11028.0	10551.9	-476.1	-4.5
2001-02	13112.3	11550.6	-1561.7	-13.5
2002-03	15590.5	12617.6	-2972.9	-23.6
2003-04	18537.1	13805.9	-4731.2	-34.3
2004-05	22040.6	16254.5	-5786.1	-35.6
2005-06	19543.0	19207.4	-335.6	-1.7
2006-07	22123.0	23926.2	1803.2	7.5
2007-08	25043.0	31401.6	6358.6	20.2

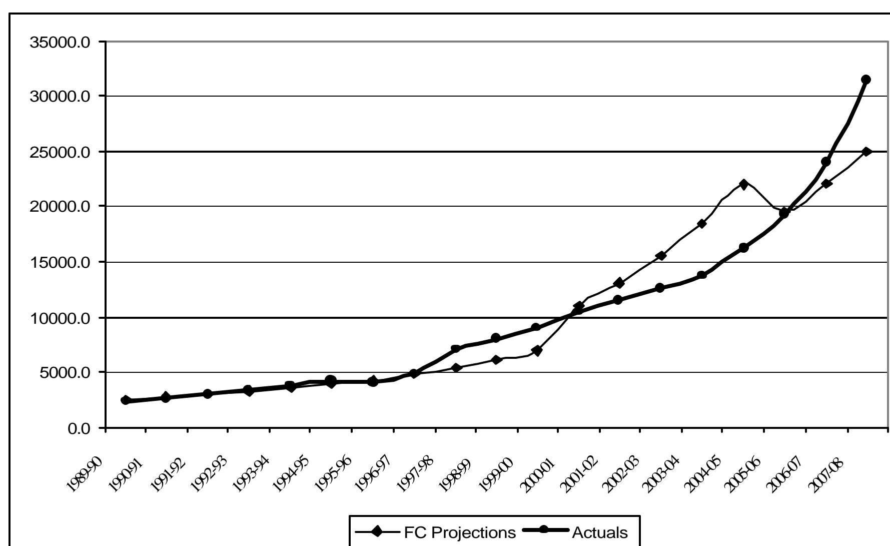

Chart 4.12: Own Tax Revenue: Finance Commission Projections and Actuals: Andhra Pradesh

As indicated in Table 4.13 and Chart 4.13 the pattern of differences in the Finance Commission assessment and the corresponding actual for Gujarat is similar to that of Andhra Pradesh in as much as except the Eleventh Finance Commission, the projection by Finance Commission was lower than the corresponding actual indicating that the Ninth, Tenth and Twelfth Finance Commissions did not take into account the higher than average tax effort of Gujarat also. This is in line with what would be expected if the equalization principle is applied because in these cases the extra revenue arising from the application of more than average tax effort was not taken into account while considering the issue of determining grants. In the case of Eleventh Finance Commission much higher tax effort was expected from these examples of middle and high income states.

Table 4.13: Gujarat Own Tax Revenue: Finance Commission Projections and Actuals

(Rs. crore)

	FC Projections	Actuals	A-P	(A-P)/A (%)
1989-90	1876.5	2159.7	283.2	13.1
1990-91	2088.9	2399.8	311.0	13.0
1991-92	2325.2	2893.4	568.2	19.6
1992-93	2588.3	3456.5	868.3	25.1
1993-94	2881.1	3941.7	1060.6	26.9
1994-95	3207.1	4742.9	1535.7	32.4
1995-96	5125.8	5322.9	197.1	3.7
1996-97	5809.1	6066.0	256.8	4.2
1997-98	6589.8	6590.5	0.7	0.0
1998-99	7446.7	7615.2	168.5	2.2
1999-00	8380.8	8161.7	-219.1	-2.7
2000-01	10481.9	9046.8	-1435.1	-15.9
2001-02	12463.0	9236.8	-3226.1	-34.9
2002-03	14818.5	9520.5	-5298.0	-55.6
2003-04	17619.1	11173.4	-6445.7	-57.7
2004-05	20949.2	12957.6	-7991.6	-61.7
2005-06	13896.5	15697.9	1801.4	11.5
2006-07	16208.9	18464.6	2255.7	12.2
2007-08	18906.0	21472.5	2566.5	12.0

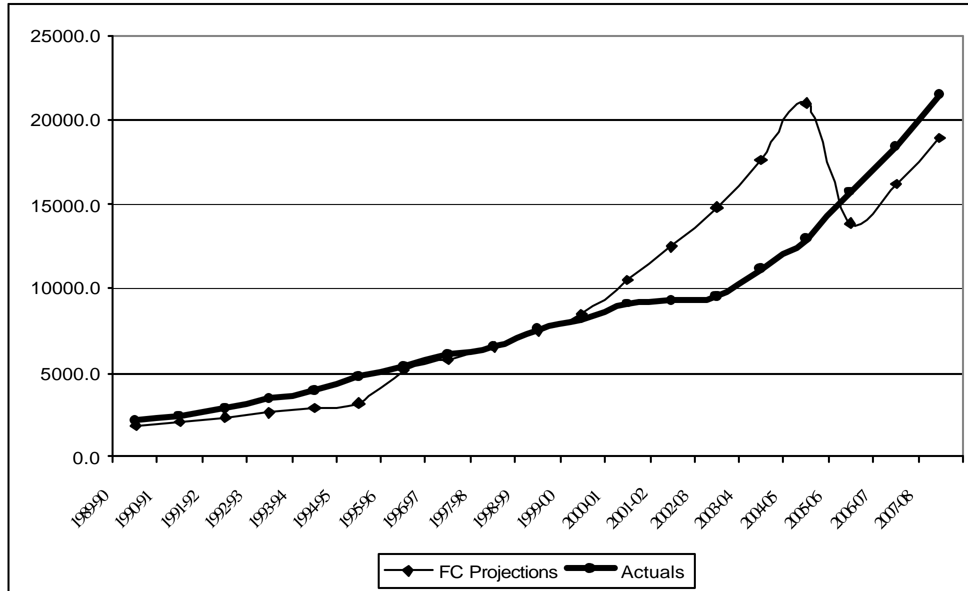

Chart 4.13: Gujarat Own Tax Revenue: Finance Commission Projections and Actuals

In the case of Orissa much lower than actual tax revenue was expected by the Ninth, Eleventh and Twelfth Finance Commissions. It is only the Tenth Finance Commission that required Orissa to raise its tax effort. In terms of relative departures of projections from actuals the minimum deviation was in the case of the Eleventh Finance Commission (refer Table 4.14 and Chart 4.14).

Table 4.14: Orissa Own Tax Revenue: Finance Commission Projections and Actuals

(Rs. crore)

	FC Projections	Actuals	A-P	(A-P)/A (%)
1989-90	399.5	524.8	125.3	23.9
1990-91	450.7	668.8	218.1	32.6
1991-92	508.5	673.6	165.1	24.5
1992-93	573.7	761.9	188.2	24.7
1993-94	647.3	859.9	212.6	24.7
1994-95	730.2	922.6	192.4	20.9
1995-96	1270.4	1127.2	-143.2	-12.7
1996-97	1418.0	1342.0	-76.0	-5.7
1997-98	1586.8	1421.7	-165.1	-11.6
1998-99	1772.0	1487.1	-284.8	-19.2
1999-00	1973.7	1704.1	-269.6	-15.8
2000-01	2012.2	2184.0	171.8	7.9
2001-02	2302.0	2466.9	164.9	6.7
2002-03	2633.5	2871.8	238.4	8.3
2003-04	3012.7	3301.7	289.0	8.8
2004-05	3446.5	4176.6	730.1	17.5
2005-06	4358.2	5002.3	644.1	12.9
2006-07	4933.5	6065.1	1131.6	18.7
2007-08	5584.7	6792.9	1208.2	17.8

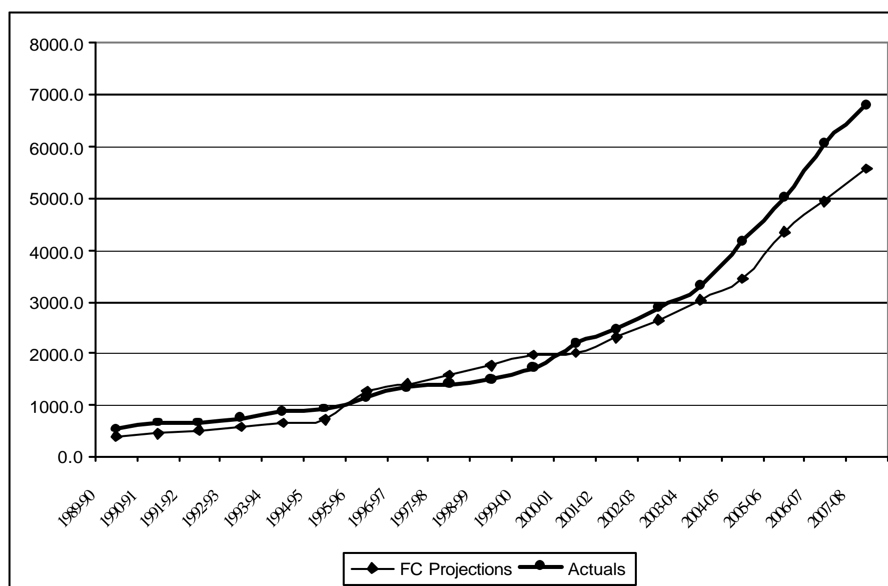

Chart 4.14: Orissa Own Tax Revenue: Finance Commission Projections and Actuals

In the case of Assam the year wise amounts for the assessed tax under the normative exercise of the Ninth Finance Commission are not available because these were applied only to fourteen major general category states. A comparison between Tenth, Eleventh and Twelfth Finance Commissions indicates that while the Tenth Finance Commission expected Assam to raise its tax effort, the Eleventh Finance Commission assessed the tax revenue at amounts lower than what the state was actually able to achieve. In the case of the Twelfth Finance Commission for the first two years of the award period the difference between actual and assessed tax revenues in relative terms is quite small.

Table 4.15: Assam Own Tax Revenue: Finance Commission Projections and Actuals

(Rs. crore)

	FC Projections	Actuals	A-P	(A-P)/A (%)
1995-96	794.3	702.5	-91.9	-13.1
1996-97	891.8	766.9	-124.9	-16.3
1997-98	1002.9	881.9	-121.0	-13.7
1998-99	1125.0	982.6	-142.4	-14.5
1999-00	1258.0	1224.8	-33.3	-2.7
2000-01	1269.5	1409.7	140.2	9.9
2001-02	1437.1	1556.9	119.9	7.7
2002-03	1626.8	1934.5	307.7	15.9
2003-04	1841.5	2070.3	228.8	11.1
2004-05	2084.6	2713.3	628.7	23.2
2005-06	3125.5	3232.2	106.8	3.3
2006-07	3538.0	3483.3	-54.7	-1.6
2007-08	4005.0	3511.8	-493.3	-14.0

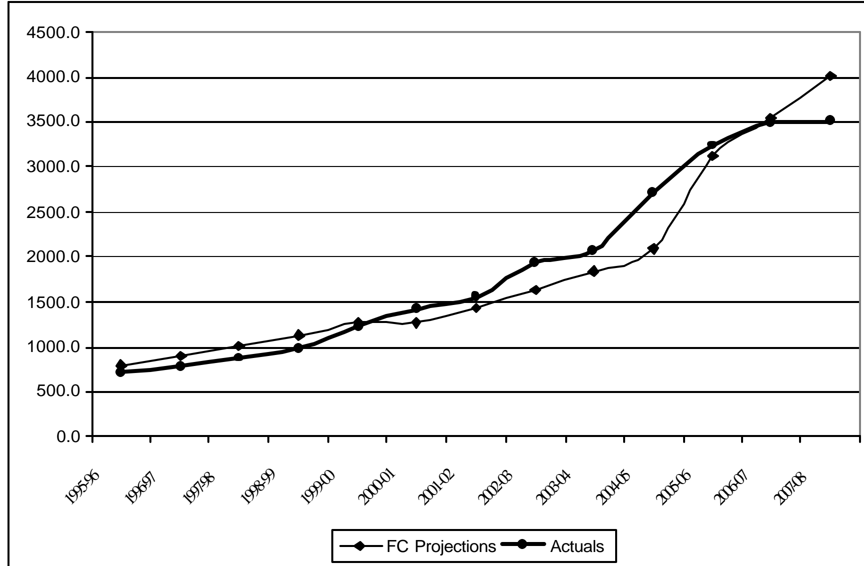

Chart 4.15: Assam Own Tax Revenue: Finance Commission Projections and Actuals

4.5 Conclusions

Finance Commissions in India require to make their recommendations for a period of five years based on information about central and state fiscal aggregates that are generally dated. Between the last year of the recommendation period and the last year for which accounts data are available, the gap could be seven to eight years. The Finance Commissions have to make forecasts for various fiscal aggregates and then determine grants that are specified in absolute amounts. In this Chapter, we have looked at the nature of forecast error in one core determinant of grants, viz., forecast of central revenues. It turns out that most Finance Commission have underestimated the central revenues but some have overestimated these.

We have analysed the forecast error for major central taxes as well as total central taxes particulars for the Ninth Finance Commission onwards. Some of the findings may be highlighted as below:

1. For income tax, for the period 1989-90 to 2007-08, revenues were underestimated for 15 out of nineteen years. The percentage error ranged from (-) 28.1 percent to 43.2 percent. The four years of overestimation are all in the recommendation period of the Eleventh Finance Commission.

2. In the case of the Union excise duties, the revenues were overestimated by all Commissions. For 18 out of 19 years analyzed here, there was overestimation. The error of overestimation ranges from (-) 1.3 to (-) 32.3 percent.
3. In the case of corporation tax, there was under-estimation except for 4 years under the Eleventh Finance Commission.
4. In the case of customs duties, there was over estimation in 12 out of 19 years.
5. For total central taxes revenues, for 10 years there is under-estimation and for 9 years there is over-estimation. The errors range from (-) 24.5 to 23.0 percent.
6. The extent of percentage error increases, as we move towards the later years in a Commission's recommendation period.
7. An analysis of errors indicates that almost always the systematic error of bias (mis-prediction of means) accounts for a relatively large part of the prediction error.
8. A comparison between assessed own tax revenues and corresponding actual for the period covered by Ninth to Twelfth Finance Commission for four selected states viz., Andhra Pradesh, Gujarat, Orissa and Assam highlights some difference between the approaches followed by different Commissions. In particular, there are similarities between the approaches of the Ninth, Tenth and Twelfth Finance Commissions in the way middle and higher income states were assessed. In contrast the Eleventh Finance Commission required that they raise tax revenues much higher than what they were able to achieve.

Chapter 5

Decomposing Finance Commission Transfers: Vertical and Horizontal Components

5.1 Introduction

Transfers recommended by the Finance Commission are given to meet either vertical deficiency in states' resources or even only horizontal imbalances. Vertical deficiency refers to the mismatch between centre's and states (considered together) relative needs and available resources. The constitutional scheme of transfers was designed such that a vertical imbalance was built into the assignment of resources and responsibilities for the two tiers of governments. While the centre was given relatively larger resources, the states were given the larger responsibilities relative to the resources. In order to remove this vertical imbalance, the constitution provided for fiscal transfers from the centre to the states. Horizontal imbalances refer to the differential fiscal capacities of the states relative to their needs in respect of their assigned responsibilities.

In this Chapter, we look at a decomposition of transfers from the centre to the states from the Finance Commission into vertical and horizontal components. Vertical transfers are given to all states regardless of their individual fiscal capacities. There are two ways of looking at vertical transfers. One is to consider vertical transfers as total transfers given to the states. Since this encompasses all the transfers, horizontal transfers are also embedded into it. This would require measuring per capita transfers given to the 'average' state. Deviation of transfers in per capita terms from this average can then be seen as a redistribution of these transfers from the richer to the poorer states. This would imply that some states will have negative horizontal transfers and some states will have positive horizontal transfers. Alternatively, vertical transfers can be measured as transfers given to the highest per capita fiscal capacity state and an equal amount given to all states. Compared to this amount, for the states that have larger per capita transfers, the difference between this vertical component and the total per capita transfer to the state is

taken as the horizontal component of transfer. In this analysis, the latter method of decomposition is used. The benchmark highest income state can be such that it is reasonably 'representative' and not exceptionally small in term of size or other characteristics (such as Goa)

This analysis has been done for the period from the Ninth Finance Commission (Second Report) period onwards. It covers total actual transfers given under the Finance Commission recommendations including actual shares in the central taxes and grants. Total transfers are divided into Finance Commission transfers covering shares in central taxes and statutory grants recommended by the Finance Commission (including grants for natural calamities)

Data are as given by the RBI. For each Commission, since the volume of grants often falls in the latter years of the period of recommendation, average for the award period is taken. As such transfers are centered in the middle of the award period. The Ninth Finance Commission period was 1990-91 to 1994-95, the Tenth Finance Commission period was from 1995-96 to 1999-00, the Eleventh Finance Commission period was from 2000-01 to 2004-05 and for the Twelfth Finance Commission, the award period is 2005-06 to 2009-10. The available data including revised/budget estimates are upto 2008-09. As such, the relevant middle years for the Ninth, Tenth, and Eleventh Finance Commissions are 1992-93, 1997-98 and 2002-03. For the Twelfth Finance Commission we have taken figures for 2005-06 to 2007-08, as centered in 2006-07.

5.2 Total Per Capita Transfers

Table 5.1 shows the per capita transfers for the periods pertaining to the Ninth to the Twelfth Finance Commissions. The per capita transfers to the special category states are several times higher than per capita transfer of the general category states. In the case of the Ninth Finance Commission, per capita transfers to the special category states were nearly three times as high as those of general category states. This relativity came down

to 2.5 for the Eleventh Finance period and has gone up to about 6 for the Twelfth Finance Commission period.

Table 5.1: Per Capita Finance Commission Transfers

(Rupees)

States	Per Capita Finance Commission Devolution			
	1990-95 (Avg.)	**1995-00** (Avg.)	**2000-05** (Avg.)	**2005-08** (Avg.)
General Category States	**231.8**	**386.3**	**622.0**	**1119.4**
Andhra Pradesh	241.4	454.8	629.6	1100.7
Bihar	284.2	433.1	867.4	1398.8
Chhattisgarh			605.6	1277.7
Goa	870.5	838.6	878.0	1854.3
Gujarat	164.6	327.3	432.4	793.4
Haryana	151.8	245.6	267.4	601.1
Jharkhand			687.9	1283.3
Karnataka	202.0	385.8	612.0	954.4
Kerala	236.4	423.2	626.8	1147.2
Madhya Pradesh	224.1	386.4	713.3	1160.3
Maharashtra	176.7	255.0	299.6	592.0
Orissa	328.1	480.9	855.1	1579.7
Punjab	191.9	288.6	303.1	620.7
Rajasthan	272.5	407.7	683.5	1208.1
Tamil Nadu	249.4	403.3	538.1	1024.9
Uttar Pradesh	233.8	412.9	700.2	1369.5
West Bengal	216.2	366.2	725.0	1193.1
Special Category States	**714.0**	**1135.7**	**1567.5**	**2891.7**
Arunachal Pradesh	1901.7	2890.6	3193.6	5978.8
Assam	336.9	579.4	758.9	1388.9
Himachal Pradesh	715.6	1389.1	2039.4	4383.2
Jammu and Kashmir	980.4	1381.1	2860.2	3797.8
Manipur	1180.9	1742.4	2391.2	5047.5
Meghalaya	910.1	1555.2	1668.8	1772.2
Mizoram	2885.3	3684.8	4000.4	9017.2
Nagaland	2014.6	2681.5	4009.8	6295.4
Sikkim	1012.5	1863.4	4000.0	5347.0
Tripura	1045.5	1582.3	2171.5	4527.4
Uttarakhand			490.9	2565.0
Total	**945.83**	**1522.01**	**2189.42**	**4011.05**

Source (Basic Data): RBI, Study of State Finances, and Central Statistical Orginasation.

The lowest per capita transfers was for Haryana for all the Finance Commission periods except the Twelfth Finance Commission when it was for Maharashtra. The highest per capita transfers were for Mizoram in all cases. In the general category states,

Goa has always got the highest per capita shares even though it is the highest per capita income state. This is because of cost considerations as Goa is a very small state in terms of area. Leaving Goa, within the remaining group of general category states, the highest per capita transfers were for Orissa, in the case of Ninth and Twelfth Finance Commissions and Bihar in the case of the Eleventh Finance Commission. The relativity between the highest and the lowest per capita transfers in the group of general category states excluding Goa has been as follows: Ninth Finance Commission (2.2), Tenth Finance Commission (1.98), Eleventh Finance Commission (3.24), and Twelfth Finance Commission (2.67). One would expect, therefore, that transfers under the Eleventh Finance Commission recommendations would be most equalizing.

Table 5.2 gives an estimation of the vertical transfers. This is derived by multiplying the per capita transfers received by the highest per capita state viz., Haryana/Maharashtra by the population of the respective states. This amount indicates the minimum transfer that was given to every state independent of differences in fiscal capacity. As such, it was given to the highest income state also.

Table 5.2: Finance Commission: Vertical Transfers

(Rs. crore)

States	Vertical Transfers 1990-95 (Avg.)	1995-00 (Avg.)	2000-05 (Avg.)	2005-08 (Avg.)
With Reference to Minimum Per Capita Transfer (Rs.)	151.8	245.6	267.4	592.0
General Category States	**12348.7**	**22029.8**	**26035.1**	**61168.6**
Andhra Pradesh	1039.0	1808.2	2078.3	4788.0
Bihar	1358.4	2449.9	2288.4	5422.2
Chhattisgarh	0.0	0.0	572.3	1365.1
Goa	18.3	31.3	38.4	92.3
Gujarat	645.6	1144.0	1392.8	3269.0
Haryana	259.0	475.0	584.0	1375.0
Jharkhand	0.0	0.0	741.8	1739.7
Karnataka	700.4	1239.2	1443.3	3342.4
Kerala	452.1	758.9	865.4	1997.3
Madhya Pradesh	1038.1	1871.0	1666.5	3991.7
Maharashtra	1236.3	2227.9	2657.6	6205.0
Orissa	495.1	862.3	1003.0	2324.8
Punjab	317.3	564.0	670.6	1547.1
Rajasthan	691.5	1270.8	1560.5	3729.2
Tamil Nadu	861.9	1479.1	1693.7	3880.8
Uttar Pradesh	2173.3	3964.8	4587.4	10989.3
West Bengal	1062.3	1883.3	2191.1	5109.7
Special Category States	**705.7**	**1272.6**	**1755.9**	**4153.1**
Arunachal Pradesh	13.7	25.1	30.0	69.7
Assam	352.4	623.0	730.6	1731.1
Himachal Pradesh	81.0	142.1	168.2	382.2
Jammu and Kashmir	121.4	229.2	282.8	697.9
Manipur	28.9	52.4	63.4	152.6
Meghalaya	28.2	51.8	63.3	147.3
Mizoram	11.0	20.3	24.7	56.9
Nagaland	19.2	40.2	57.4	127.1
Sikkim	6.4	11.9	14.8	34.5
Tripura	43.4	76.7	87.3	203.9
Uttarakhand	0.0	0.0	233.2	549.8
Total	**13054.4**	**23302.4**	**27791.0**	**65321.7**

Source (Basic Data): RBI, Study of State Finances, and Central Statistical Orginasation.

Table 5.3 shows the per capita horizontal transfers, which are derived by deducting from per capita total transfers the amount of per capita vertical transfer (common for all states). We expect horizontal transfers to be relatively low for high income states and relatively high for low income states. Goa, which gets a large amount of horizontal transfer, is an exception and its higher horizontal transfers are on account of

cost considerations. Among the remaining states, states like Bihar and Orissa get somewhat larger amounts but not significantly different from those of some of the middle income states.

Table 5.3: Finance Commission: Per Capita Horizontal Transfers

(Rupees)

With Reference to Minimum Transfer	151.8	245.6	267.4	592.0
States	**Horizontal Transfers (per capita)**			
	1990-95 (Avg.)	**1995-00** (Avg.)	**2000-05** (Avg.)	**2005-08** (Avg.)
General Category States	**80.0**	**140.7**	**354.5**	**527.3**
Andhra Pradesh	89.6	209.2	362.2	508.7
Bihar	132.4	187.5	599.9	806.8
Chhattisgarh			338.2	685.7
Goa	718.6	593.0	610.6	1262.3
Gujarat	12.8	81.8	165.0	201.4
Haryana	0.0	0.0	0.0	9.0
Jharkhand			420.5	691.2
Karnataka	50.2	140.3	344.6	362.3
Kerala	84.6	177.7	359.3	555.1
Madhya Pradesh	72.2	140.8	445.9	568.2
Maharashtra	24.9	9.5	32.1	0.0
Orissa	176.3	235.4	587.7	987.6
Punjab	40.1	43.1	35.6	28.7
Rajasthan	120.6	162.2	416.0	616.1
Tamil Nadu	97.6	157.7	270.7	432.8
Uttar Pradesh	81.9	167.4	432.8	777.4
West Bengal	64.4	120.7	457.6	601.0
Special Category States	**562.2**	**890.2**	**1300.0**	**2299.6**
Arunachal Pradesh	1749.9	2645.1	2926.1	5386.7
Assam	185.1	333.9	491.4	796.8
Himachal Pradesh	563.8	1143.5	1772.0	3791.1
Jammu and Kashmir	828.5	1135.6	2592.8	3205.7
Manipur	1029.1	1496.8	2123.8	4455.5
Meghalaya	758.3	1309.7	1401.3	1180.1
Mizoram	2733.5	3439.3	3733.0	8425.1
Nagaland	1862.7	2435.9	3742.4	5703.4
Sikkim	860.7	1617.8	3732.6	4755.0
Tripura	893.7	1336.8	1904.1	3935.3
Uttarakhand			223.4	1973.0
Total	**794.0**	**1276.5**	**1922.0**	**3419.0**

Source (Basic Data): RBI, Study of State Finances, and Central Statistical Orginasation.

Table 5.4 gives the total amount for the horizontal transfers, which is obtained by multiplying the per capita horizontal transfers by the respective populations. From this, we can derive the relative importance given to the vertical and horizontal objectives by different Commissions in their schemes of transfers.

Table 5.4: Finance Commission: Horizontal Transfers

(Rs. crore)

With Reference to Minimum Transfer

States	Horizontal Transfers (total)			
	1990-95 (Avg.)	**1995-00** (Avg.)	**2000-05** (Avg.)	**2005-08** (Avg.)
General Category States	**6504.3**	**12627.2**	**34512.9**	**54483.4**
Andhra Pradesh	613.0	1540.8	2814.7	4114.0
Bihar	1184.6	1871.1	5133.6	7388.8
Chhattisgarh			723.7	1580.9
Goa	86.7	75.7	87.6	196.7
Gujarat	54.4	381.0	859.2	1112.0
Haryana	0.0	0.0	0.0	21.0
Jharkhand			1166.2	2031.3
Karnataka	231.6	707.8	1859.7	2045.6
Kerala	251.9	549.1	1162.6	1872.7
Madhya Pradesh	493.9	1073.0	2778.5	3831.3
Maharashtra	202.7	86.1	319.4	0.0
Orissa	574.9	826.7	2204.0	3878.2
Punjab	83.7	99.0	89.4	74.9
Rajasthan	549.5	839.2	2427.5	3880.8
Tamil Nadu	554.1	949.9	1714.3	2837.2
Uttar Pradesh	1172.7	2702.2	7423.6	14430.7
West Bengal	450.7	925.7	3748.9	5187.3
Special Category States	**2613.3**	**4613.4**	**8535.1**	**16131.9**
Arunachal Pradesh	157.3	270.9	328.0	634.3
Assam	429.6	847.0	1342.4	2329.9
Himachal Pradesh	301.0	661.9	1114.8	2447.8
Jammu and Kashmir	662.6	1059.8	2742.2	3779.1
Manipur	196.1	319.6	503.6	1148.4
Meghalaya	140.8	276.2	331.7	293.7
Mizoram	198.0	283.7	345.3	810.1
Nagaland	235.8	398.8	803.6	1223.9
Sikkim	36.6	78.1	207.2	277.5
Tripura	255.6	417.3	621.7	1355.1
Uttarakhand			194.8	1832.2
Total	**9117.6**	**17239.6**	**43048.0**	**70613.3**

Source (Basic Data): RBI, Study of State Finances, and Central Statistical Orginasation.

5.3 Relative Share of Vertical and Horizontal Components

Given that total transfers can be decomposed into their vertical and horizontal components, it is useful to take note of the relative importance given by different Commissions to resolving the vertical and horizontal needs of the states for which the fiscal transfers have been recommended. This decomposition is given in Table 5.5. It will be seen that the ratios indicating the relative importance of the two components show considerable variation across the four Commissions considered here.

The importance to the vertical component was as high as 59 percent in the scheme of transfers in the main Report of the Ninth Finance Commission. In the case of the Tenth Finance Commission, the share of vertical transfers was still quite large at 57.5 percent. It was about 39 percent in the case of the Eleventh Finance Commission highlighting the predominance of the horizontal objective. For the Twelfth Finance Commission, taking into account the years given here, about 48 percent was used for vertical transfers and 52 percent for horizontal transfers.

Table 5.5: Decomposition of Transfers: Relative Importance of Vertical and Horizontal Components

(Rs. crore)

Details of Transfers	1990-95	1995-00	2000-05	2005-08
Vertical Transfers	13054.4	23302.4	27791.0	65321.7
Horizontal transfers	9117.6	17239.6	43048.0	70613.3
Total transfers	22172.0	40542.0	70839.0	135935.0
Percentage shares				
Vertical Transfers	58.88	57.48	39.23	48.05
Horizontal transfers	41.12	42.52	60.77	51.95

Source (Basic Data): Reports of the Finance Commissions.

This indicates that Finance Commissions have not followed any objective criteria to determine explicitly how far they would achieve the horizontal objectives of transfers (equalization with consideration for cost disabilities) and how far the exercise should aim to deliver vertical transfers that go to all states in equal per capita amounts regardless of the differences in their fiscal capacities. One possible approach would be: determine fiscal capacity equalization needs first, which depend on the average tax effort, distribution of population and per capita GSDPs, and the selected benchmark for

equalization and then determine what is the total amount of transfer that can be recommended. The vertical component of transfers can then be determined automatically.

5.4 Responsiveness of Per Capita Transfer to Per Capita GSDP

We may examine the redistributive content of fiscal transfers in the scheme of transfers of different Commissions by examining the rate of responsiveness of per capita transfers to changes in per capita GSDP. We expect that for a redistributive scheme of transfers, the estimated slope coefficient in the equation [ln tr = a + b ln pcgsdp + u], will have a negative sign and the magnitude of the coefficient (b) in such a specification will provide a measure of elasticity. This exercise has been done taking into account 14 general category states leaving Goa, Chhattisgarh, Jharkhand and the special category states (Table 5.6).

Table 5.6: Regression of Per Capita Transfer on Per Capita Nominal GSDP

Commission	Intercept	Slope	t (slope)	R^2
Ninth	9.416	-0.442	-4.028	0.575
Tenth	9.331	-0.357	-3.248	0.468
Eleventh	13.531	-0.728	-4.754	0.653
Twelfth	12.380	-0.536	-4.325	0.609

Source (Basic Data): Reports of the Finance Commissions and CSO.

For the purpose of this exercise, we have used per capita GSDP figures based on the 1999-00 base series[5]. The estimated coefficients indicate the responsiveness in terms of percentage fall in per capita transfers as per capita GSDP increases by one percent. As expected the most equalising schemes appears to be that of the Eleventh Finance Commission, followed by the Twelfth, Ninth and Tenth Finance Commissions, in that order. All the transfer schemes indicate a negative coefficient pointing out that the overall design was aimed at achieving a degree of horizontal equity.

[5] We have used GSDP data for 1993-94 for the Ninth Finance Commission, average of 1996-97 to 1998-99 centered in 1997-98 for the Tenth Finance Commission, and average of 2001-02 to 2003-04 centered in 2002-03 for the Eleventh Finance Commission. For the Twelfth Finance Commission, only 2005-06 data could be used.

5.5 Conclusions

In this Chapter we have looked at a decomposition of the transfers from the centre to the states under the recommendation of the Finance Commissions. These transfers include shares of states in central taxes and statutory grants and grants for natural calamities. Vertical transfers are given in equal per capita amount to all states including the highest fiscal capacity states. Horizontal transfers are given in per capita terms over and above the vertical transfers. These are meant to redress deficiency in fiscal capacity of the states relative to a benchmark and also to take into account more than average costs of providing services due to demographic factors or cost factors beyond the control of the state governments like rainfall, nature of terrain etc. This analysis has been done for periods covered by the Ninth, Tenth, Eleventh, and Twelfth Finance Commissions. The following are the some of the salient findings.

1. For the Ninth and Tenth Finance Commissions, the relative share of vertical transfers was 59 and 57 percent respectively. This share came down to 39 percent for the Eleventh Finance Commission and 48 percent for the Twelfth Finance Commission. Correspondingly, the Eleventh Finance Commission devoted 61 percent of total transfers for meeting the horizontal objectives.
2. A regression of per capita transfers on per capita nominal GSDP indicates that in all cases relating to the four Finance Commissions reviewed here, a one percent increase in per capita GSDP would lead to a fall in per capita transfer. The elasticity of response varies from (-) 0.36 for the Tenth Finance Commission to (-) 0.73 for the Eleventh Finance Commission.
3. Per capita transfers are considerably higher for the special category states as compared to the general category states. For the Twelfth Finance Commission these are nearly 6 times as high as those for the general category states.

Chapter 6

Dependence of States on Central Transfers: Aggregate and State-wise Analysis

States derive a certain portion of their revenue receipts from central transfers in the form of share in central taxes and grants from the Finance Commission and other channels. The share of total transfers from the centre in the total revenue receipts of the states or revenue expenditures indicates the extent to which a state depends on the transfers from the centre. These shares show variations across states and over time. In this Chapter, we undertake an aggregate analysis of the degree of dependence of the states taken together on central transfers for the period from 1950-51 to 2007-08. We also undertake an analysis of the degree of dependence of individual states (or groups of states) on central transfers for the period from 1990-91 to 2007-08. This covers the periods of awards of the Second Report of the Ninth Finance Commission, Tenth Finance Commission, Eleventh Finance Commission, and Twelfth Finance Commission. States are divided into five groups: for general category states the groups pertain to high, middle and low income states; the special category states are divided into two groups: Group 1 and Group 2. Group 1 contains the following states: Himachal Pradesh, Jammu and Kashmir, Uttaranchal, Sikkim and Meghalaya. Group 2 contains the following states: Arunachal Pradesh, Manipur, Mizoram, Nagaland, and Tripura.

In this Chapter, we look at the pattern of changes in states' dependence particularly on the share of central taxes, which they get on the basis of the recommendations of the Finance Commissions. State's dependence on the share of central taxes has changed over time. These changes are partly due to the recommendation of the Finance Commission as to the share that should be given to the states from centre's shareable portion of tax revenues as well as on changes in economic growth and tax-efforts of both the central and state governments. Important among the macro variables are the ratios of the centre's gross tax revenue and state's own revenue receipts to GDP.

We look at the changes over the period from 1950-51 to 2007-08 for individual years as well as for Commission-period averages.

6.2 States' Share in Central Taxes: Aggregate Analysis

We can decompose the states share in central taxes in to three components for purposes of understanding the pattern of changes over time. We define the variables as follows:

SCTR: States' share in central taxes

GCTR: Gross central tax revenue

Y: GDP at market prices

SRR: States' revenue receipts

We can define states' share in central taxes as a proportion of states' revenue receipts as follows:

$$SCTR/SRR = (SCTR/GCTR)*(GCTR/Y)*(Y/SRR)$$

or

$$SCTR/SRR = (SCTR/GCTR)*(GCTR/Y)*[(SRR/Y)^{-1}]$$

This indicates that the states' dependence on the share of central taxes will move positively with (a) an increase in their share in the gross central tax revenues (which depends on Finance Commission recommendations), (b) share of central taxes in GDP at market prices (which depends on centre's tax effort), and (c) inversely with the share of states' revenue receipts in GDP at market prices (which depends on states' revenue effort).

We may represent these ratios as follows:

$$SCTR/SRR = Z$$
$$SCTR/GCTR = A$$
$$GCTR/Y = B$$
$$Y/SRR = C$$

Taking logarithms we can express this decomposition as follows:

$$\ln Z = \ln A + \ln B - \ln C$$

6.3 Pattern of Change in States' Share in Central Taxes

Table 6.1 indicates the profile of states' share in central taxes as percentage of states' revenue receipts indicating how the dependence of the states has increased over time in the share in central taxes. For the First Finance Commission period, the average share of central taxes in states' revenue receipts was 14.2 percent. It increased over successive Finance Commission periods to reach a level of 22 percent for the Fifth Finance Commission period. After which it fell for the period of Sixth Finance Commission and increased again to 24.3 percent in the Seventh Finance Commission period.

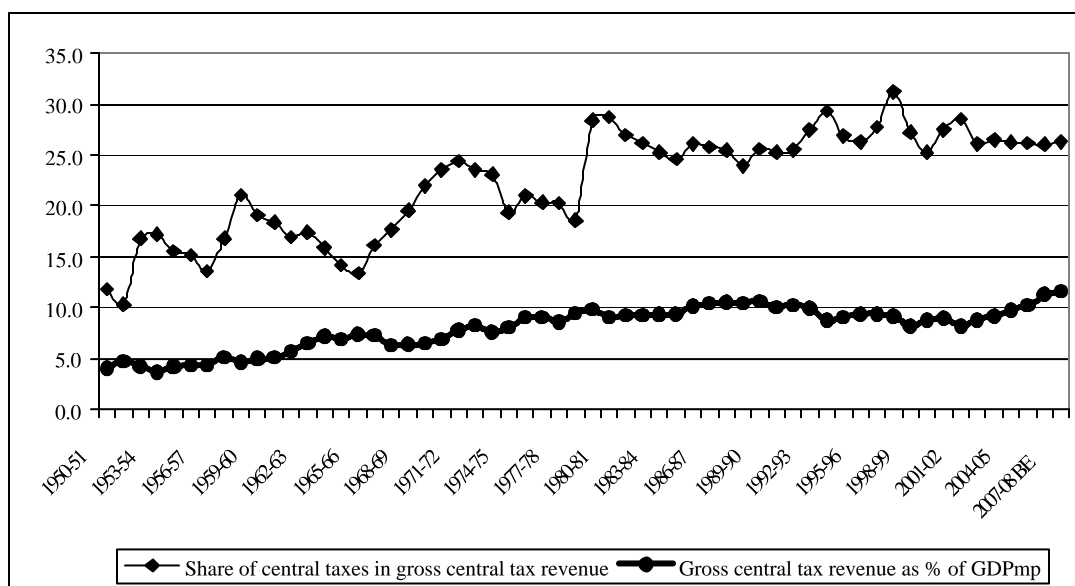

Chart 6.1: States' Dependence on Share in Central Taxes

During the period covered by the recommendations of the Eighth to Twelfth Finance Commissions, this ratio was stable in the range of 22.1 to 23.5 percent (Chart 6.1). Year-wise details are given in Appendix Table 6.1.

Table 6.1: Share of States' in Central Taxes and Related Aggregate Determinants

Commission period Averages	States' share in central taxes as % of States' revenue receipts	Share of central taxes in gross central tax revenue	Gross central tax revenue as % of GDPmp	States' revenue receipts as % of GDPmp
First	14.2	15.7	4.2	4.6
Second	16.6	18.5	5.1	5.7
Third	16.4	15.2	7.0	6.4
Fourth	17.2	17.8	6.7	6.9
Fifth	22.1	23.3	7.4	7.8
Sixth	19.6	19.9	8.9	9.0
Seventh	24.3	27.1	9.3	10.4
Eighth	22.8	25.2	10.2	11.3
Ninth	22.7	26.7	9.8	11.5
Tenth	23.5	27.6	9.0	10.5
Eleventh	22.1	27.0	9.0	11.0
Twelfth*	22.8	26.2	11.0	12.7

Source (Basic Data): Indian Public Finance Statistics, various issues.
Note: * average of three years (2005-08).

From Table 6.1, it can be seen that the share of central taxes in gross central tax revenues also shows a corresponding pattern. This share was the highest for the Tenth Finance Commission period at 27.6 percent. It was relatively stable during the period covered by the Ninth to Eleventh Finance Commissions at around 27.0 percent. There is clearly a stability in this ratio observed throughout the period covered by the Seventh Finance Commission onwards (Chart 6.2).

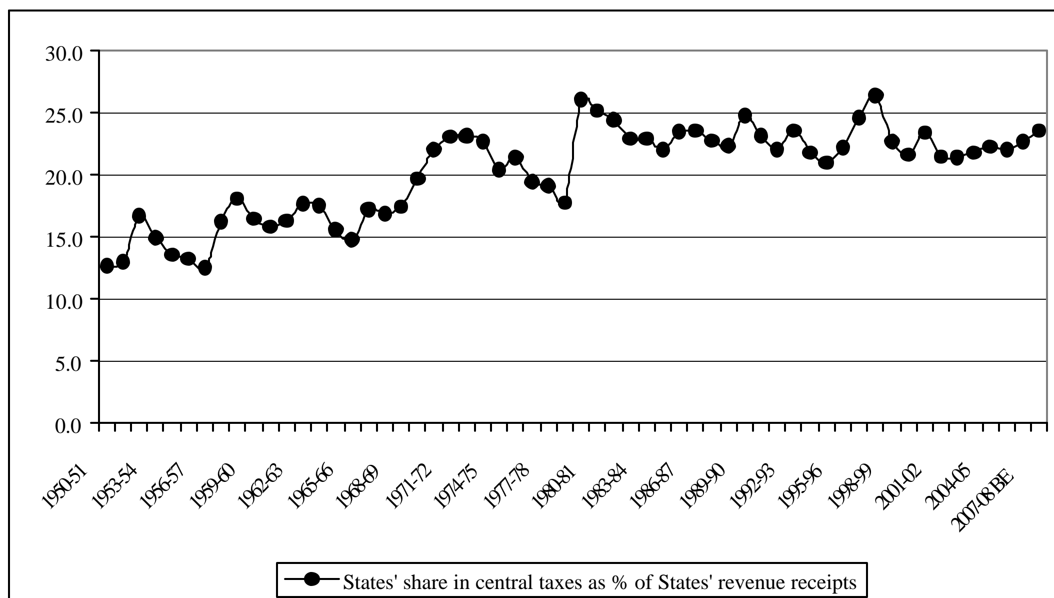

Chart 6.2 : States’ Share of Central Taxes in Gross Central Tax Revenues and Gross Central Taxes relative to GDP

Table 6.2 indicates changes in states' dependence on the share in central taxes over successive Finance Commissions. Column 1 of Table 6.2 indicates states dependence on share in central taxes in particular it indicates the direction of change in dependence between one Finance Commission and its preceding Finance Commission. Column 2 indicates changes in share in central taxes in gross central tax revenue over successive Finance Commission periods. We expect that as the share of central taxes in gross central tax revenue increases, the dependence of states on central taxes would also increase unless it is counter balanced by a higher increase in their own revenue receipts. We find that the changes reflected in column 1 and 2 are similar in direction for the Second Finance Commission period until the Eight Finance Commission period although there are large difference in magnitudes in the case of the Third and the Seventh Finance Commissions. The signs are different between these indicators only for the Ninth and the Twelfth Commission periods. In the case of the Ninth Finance Commission period while the share of central taxes in gross central tax revenue increases states dependence on central taxes falls. The opposite is observed in the case of the Twelfth Finance Commission. This pattern needs to be explained by examining changes in centre's tax-GDP ratio as also states' revenue effort relative to GDP.

Table 6.2: Changes in States' Dependence on Share in Central Taxes Over Successive Commissions

Commission period averages	States' share in central taxes as % of States' revenue receipts	Share of central taxes in gross central tax revenue	Gross central tax revenue as % of GDPmp	States' revenue receipts as % of GDPmp
Change relative to the previous Commission Period Average				
Second	2.41	2.81	0.96	1.07
Third	-0.20	-3.25	1.84	0.77
Fourth	0.79	2.58	-0.30	0.43
Fifth	4.93	5.51	0.77	0.95
Sixth	-2.49	-3.39	1.42	1.19
Seventh	4.68	7.22	0.49	1.42
Eighth	-1.47	-1.94	0.86	0.83
Ninth	-0.09	1.49	-0.42	0.21
Tenth	0.78	0.89	-0.82	-0.95
Eleventh	-1.43	-0.58	0.01	0.44
Twelfth*	0.69	-0.82	2.06	1.72

Source (Basic Data): Indian Public Finance Statistics, various issues.
Note: * average of three years (2005-08).

In the third column of Table 6.2, it is indicated that the gross central tax revenues as percentage of GDP at market prices increased in all the Commission periods except for the periods covered by the Fourth, Ninth and Tenth Finance Commissions. During the ten year period of the nineties, covered by the Ninth and Tenth Finance Commissions the average tax-GDP ratio for the centre fell. As a result, inspite of an increase in the share of central taxes in gross central tax revenues, states' share in central taxes as percentage of their revenue receipts fell.

Table 6.3 highlights the role of different factors in explaining the pattern of changes in terms of additive changes by taking logarithms of the factors.

Table 6.3: Decomposition of Percentage Change in States' Share in Central Taxes Relative to States' Revenue Receipts

Commission	States' share in central taxes as % of states' revenue receipts	Share of central taxes in gross central tax revenue	Gross central tax revenue as % of GDPmp	States' revenue receipts as % of GDPmp
First	2.65	2.75	1.42	-1.53
Second	2.81	2.91	1.63	-1.74
Third	2.79	2.72	1.94	-1.86
Fourth	2.84	2.88	1.89	-1.93
Fifth	3.09	3.15	2.00	-2.06
Sixth	2.97	2.99	2.18	-2.20
Seventh	3.19	3.30	2.23	-2.35
Eighth	3.13	3.23	2.32	-2.42
Ninth	3.12	3.28	2.28	-2.44
Tenth	3.15	3.31	2.19	-2.35
Eleventh	3.09	3.30	2.19	-2.39
Twelfth*	3.13	3.27	2.40	-2.54
Change Relative to Successive Previous Commission Average				
Second	0.161	0.165	0.206	-0.210
Third	-0.014	-0.195	0.309	-0.128
Fourth	0.050	0.159	-0.045	-0.064
Fifth	0.251	0.272	0.107	-0.129
Sixth	-0.120	-0.157	0.177	-0.140
Seventh	0.214	0.309	0.055	-0.149
Eighth	-0.062	-0.073	0.088	-0.076
Ninth	-0.005	0.057	-0.043	-0.019
Tenth	0.032	0.032	-0.086	0.087
Eleventh	-0.061	-0.019	0.000	-0.042
Twelfth*	0.031	-0.030	0.207	-0.146

Source (Basic Data): Indian Public Finance Statistics, various issues.
Note: * average of three years (2005-08).

The following observations can be made. There are only five Commission periods were the dependence of states on central taxes increased compared to the previous Commission average. These relate to Fourth and Fifth Finance Commissions, the Seventh Finance Commission period and the Tenth and Twelfth Finance Commission periods. The percentage change is high only in the case of Fifth and Seventh Finance Commission period at 0.25 percent and 0.21 percentage points, respectively. In both cases, it is explained by the increase in the share of central taxes in the gross central tax revenue which was 27 percent and 31 percentage points respectively.

Chart 6.3 highlights the pattern of these changes.

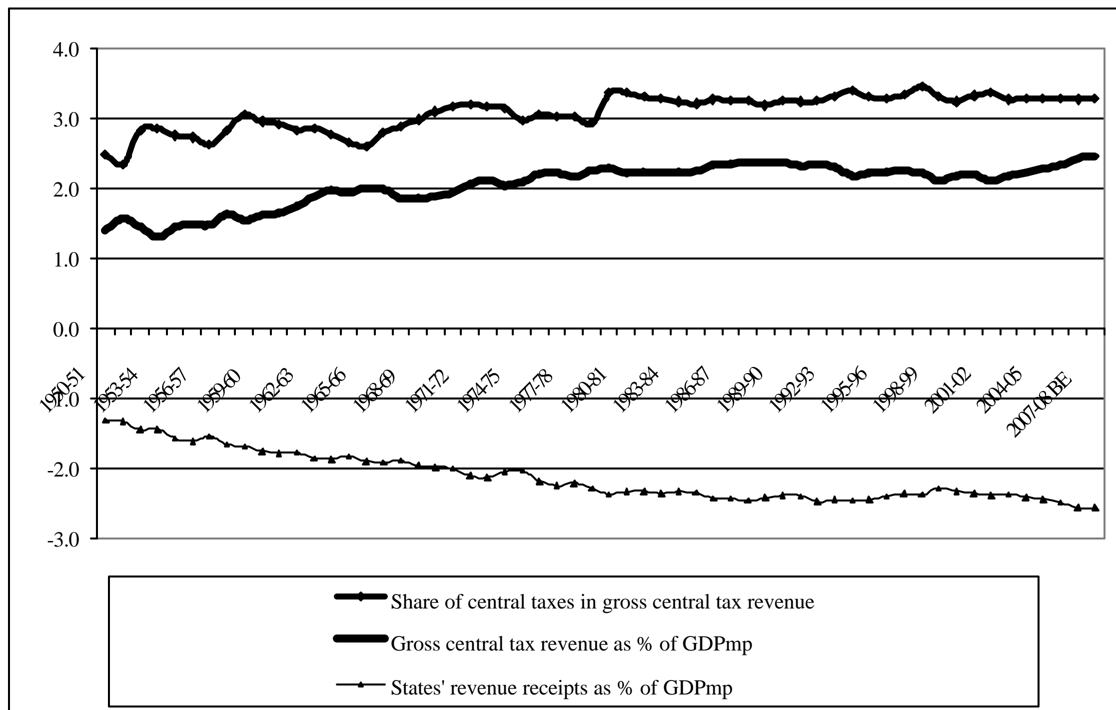

Chart 6.3: Logarithmic Changes in Determinants of States' Dependence on Share in Central Taxes

6.4 Total Transfers as Percentage of States Revenue Receipts

In this section, as part of the aggregate analysis, taking all states together, we examine the pattern of dependence of the states on total transfers from the centre taking into account the share in central taxes as well as grants from all sources. Chart 6.4

indicates the long term profile of states' dependence on central transfers. It is clear that up to about 1971-72, the dependence on the states on central transfers increased steadily reaching a peak of a little more than 44 percent. After this, the share of total transfer in states' revenue receipts seems to have stabilized except for a tangible fall to a trough of 37.6 percent around the middle of the Eleventh Finance Commission recommendation period.

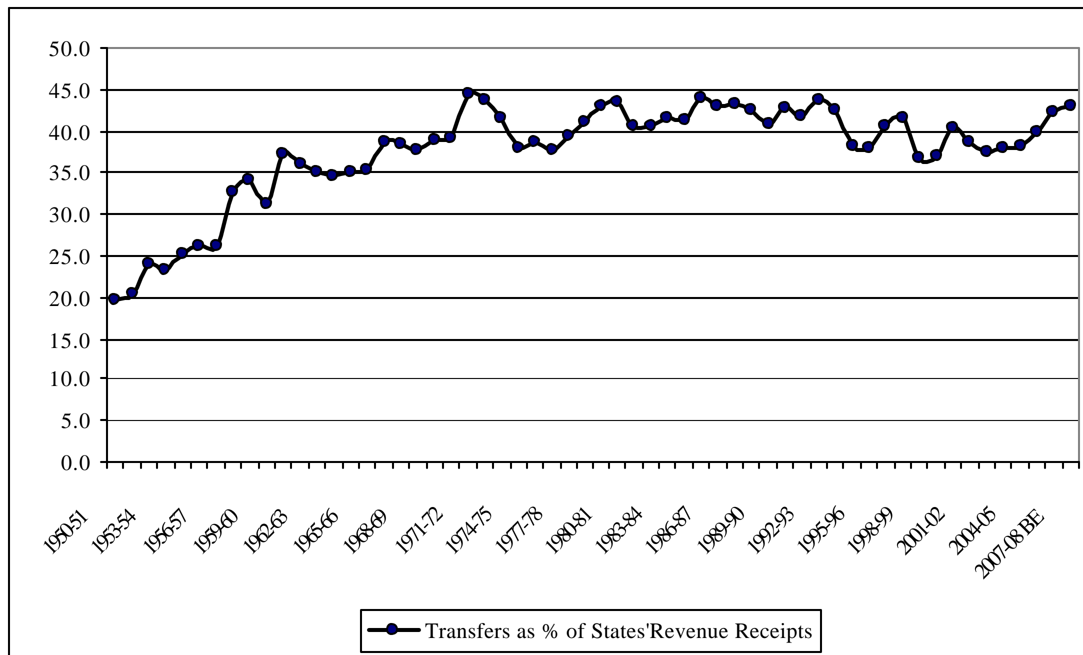

Chart 6.4: Transfers as percent of States' Revenue Receipts

6.5 Share of Transfers in Revenue Receipts and Expenditures: High Income General Category States

In this section, we undertake state-wise analysis of the pattern of dependence of the states on central transfers.

a. Transfers as percentage of Revenue Receipts

The high income general category states receive the lowest transfers relative to their revenue receipts. On average, Haryana is shown to be the least dependent state on central transfers, followed by Punjab, Maharashtra, Gujarat, and Goa. As shown in Table

6.4, there are interesting patterns over time across states and across Finance Commissions.

a. In the case of Goa, the extent of transfer has come down over time from an average of 37 percent during 1990-95 to just about 10 percent during 2000-05, subsequently there is a marginal incrrease.
b. For Haryana the share has ranged between 11.9-16.4 percent.
c. For Maharashtra it has ranged between 11.4 percent on an average to 21.6 percent. The lowest share was in the Eleventh Finance Commission period.
d. For Punjab the share has varied between 9.7-19.8 percent. Here also the lowest share was during the Eleventh Finance Commission award period.
e. Comparing across Finance Commissions, the high income group states obtained the lowest shares during Eleventh Finance Commission period, followed by Tenth Finance Commission period.

Table 6.4: Total Transfers from the Centre as Percentage of Revenue Receipts: High Income States

	Goa	**Gujarat**	**Haryana**	**Maharashtra**	**Punjab**
1990-91	45.35	17.05	17.39	20.52	21.73
1991-92	38.06	13.60	17.64	20.78	14.19
1992-93	36.01	21.93	19.79	21.49	25.10
1993-94	30.17	24.03	15.86	22.39	21.76
1994-95	29.60	20.18	8.86	18.11	13.17
1995-96	17.64	18.96	13.14	17.21	14.59
1996-97	19.79	20.99	12.77	15.12	15.97
1997-98	14.48	20.79	15.23	14.55	14.96
1998-99	12.16	18.52	15.35	18.23	17.13
1999-00	11.08	20.28	17.17	16.10	15.52
2000-01	11.62	21.24	12.52	14.36	16.49
2001-02	8.92	18.63	12.66	13.79	12.86
2002-03	10.46	24.39	15.01	12.14	11.96
2003-04	11.59	20.84	12.93	16.47	10.94
2004-05	12.87	20.81	10.45	15.33	10.90
2005-06	14.35	24.00	16.72	18.50	20.28
2006-07	17.10	26.09	14.96	24.26	21.33
2007-08	15.72	24.93	15.30	24.42	23.09
Averages					
1990-95	35.84	19.36	15.91	20.66	19.19
1995-00	15.03	19.91	14.73	16.24	15.63
2000-05	11.09	21.18	12.71	14.42	12.63
2005-08	15.72	25.01	15.66	22.39	21.57

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

b. Transfers as percentage of Revenue Expenditures

Table 6.5 shows total transfers from the centre as percentage of revenue expenditures for the five states included in the high income group. The pattern showed here, both in terms of inter-state comparisons and over time comparisons, reflects by and large, the same pattern as that for the case of revenue receipts. The difference between the role of transfers in financing revenue expenditure arises because in addition to revenue receipts, revenue expenditures also get financed by fiscal deficits as long as states are in revenue deficit. The following observations can be made on the basis of Table 6.5.

1. For some years, the dependence of Goa on transfers for financing their revenue expenditures has been as low as 4.2 percent. In terms of Commission period averages, for the Eleventh and Twelfth Finance Commission periods, Goa's dependence on transfers has fallen to just about 10-12 percent.
2. Compared to the Eleventh Finance Commission period, for all high income states, the share of transfers has increased for the Twelfth Finance Commission period.
3. Across states in this group, dependence is least for Goa and highest for Gujarat. For the Twelfth Finance Commission period, it ranges between 12.2 to 25.9 percent among the states in this group.

Table 6.5: Total Transfers from the Centre as Percentage of Revenue Expenditure: High Income States

Years	Goa	Gujarat	Haryana	Maharashtra	Punjab
1990-91	46.53	14.11	17.22	20.39	17.04
1991-92	36.98	12.10	17.39	17.59	12.56
1992-93	36.81	20.88	19.77	20.13	20.44
1993-94	32.50	24.37	16.23	22.18	17.63
1994-95	33.09	20.88	8.31	18.44	11.55
1995-96	18.38	18.48	12.29	16.60	13.42
1996-97	20.33	19.78	11.42	13.22	12.84
1997-98	14.29	19.05	13.57	12.91	12.13
1998-99	10.83	15.13	11.98	15.44	11.76
1999-00	9.47	16.09	14.24	13.77	11.37
2000-01	10.08	15.17	11.46	11.35	13.20
2001-02	7.95	13.11	11.11	10.84	9.03
2002-03	9.58	20.33	13.91	9.33	8.93
2003-04	10.67	17.32	12.58	13.26	8.45
2004-05	12.05	17.35	10.21	12.32	8.75
2005-06	4.17	23.62	18.32	17.14	18.90
2006-07	16.87	27.74	14.37	23.04	19.21
2007-08	15.68	26.24	16.35	24.60	21.36
Averages					
1990-95	37.18	18.47	15.78	19.75	15.84
1995-00	14.66	17.71	12.70	14.39	12.30
2000-05	10.07	16.66	11.85	11.42	9.67
2005-08	12.24	25.87	16.35	21.60	19.82

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

6.6 Share of Transfers in Revenue Receipts: Middle Income General Category States

a. Transfers as percentage of Revenue Receipts

Among the middle income general category states, across states, the lowest dependence on Finance Commission transfers is that of Karnataka and the highest, that of West Bengal. Total transfers as percentage of revenue receipts have remained relatively stable for Karnataka with Commission period averages in the range of 26-27 percent. For Andhra Pradesh, there is a significant decline comparing the Ninth and Tenth Finance Commission period averages at round to 36 percent to 31 percent for the Eleventh and Twelfth Finance Commission period averages. For Kerala, after declining from 34 percent for the Ninth Finance Commission period to 26.2 for the Eleventh, the share of

transfers in total revenue receipts increased for the Twelfth Finance Commission period (Table 6.6).

Table 6.6: Total Transfers from the Centre as Percentage of Revenue Receipts: Middle Income States

Years	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	West Bengal	Chhattisgarh
1990-91	35.97	26.79	35.53	31.10	42.74	
1991-92	35.76	26.26	33.08	28.38	42.45	
1992-93	36.78	28.06	34.72	31.95	45.35	
1993-94	37.16	28.12	31.97	31.75	45.59	
1994-95	34.47	26.28	31.52	28.34	40.67	
1995-96	42.02	23.81	27.76	24.43	39.53	
1996-97	41.87	26.11	28.20	25.85	43.16	
1997-98	35.69	27.67	29.01	27.82	44.99	
1998-99	31.22	25.09	27.66	24.39	45.04	
1999-00	31.86	27.51	27.92	24.82	44.30	
2000-01	31.73	27.80	25.22	23.60	50.89	43.29
2001-02	29.13	28.55	28.59	22.59	49.92	44.88
2002-03	29.80	27.53	24.95	22.24	43.27	37.94
2003-04	35.20	25.20	24.71	20.30	43.56	39.38
2004-05	30.40	22.68	27.54	24.20	43.42	37.70
2005-06	31.43	25.85	29.94	23.65	51.92	38.31
2006-07	31.85	25.82	31.23	23.51	49.18	41.96
2007-08	30.38	29.96	30.42	24.02	49.27	40.24
Averages						
1990-95	36.03	27.10	33.37	30.30	43.36	
1995-00	36.53	26.04	28.11	25.46	43.40	
2000-05	31.25	26.35	26.20	22.59	46.21	40.64
2005-08	31.22	27.21	30.53	23.73	50.12	40.17

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

b. Transfers as percentage of Revenue Expenditures

As shown by Table 6.7 as far as dependence of revenue expenditures on transfers is concerned for the middle income states, the following are the noticeable points.

1. In the case of Kerala and Tamil Nadu, the dependence on transfers for financing revenue expenditure came down close to 20 percent during the Eleventh Finance Commission period, although since then both of these shares increased to a little more than 24 percent for the Twelfth Finance Commission period.

2. Leaving Chhattisgarh, the highest dependence on transfers among the middle income states for financing revenue expenditures has been that for West Bengal, which has been in the range of 30-39 percent.

3. The next state in this order is Andhra Pradesh where the dependence on transfers for financing revenue expenditures has ranged between 27.7 to 35.2 percent.

4. The range of variation in these ratios across Finance Commission period averages is relatively narrow.

Table 6.7: Total Transfers from the Centre as Percentage of Revenue Expenditure: Middle Income States

Years	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	West Bengal	Chhattisgarh
1990-91	34.94	26.26	30.22	28.05	34.25	
1991-92	34.82	25.31	29.33	22.16	37.29	
1992-93	36.15	27.21	31.52	26.24	41.85	
1993-94	38.24	28.65	29.21	29.24	39.10	
1994-95	31.83	25.21	29.03	27.12	36.58	
1995-96	39.09	23.98	25.84	23.73	33.80	
1996-97	32.56	24.63	25.53	23.67	34.27	
1997-98	33.96	26.97	25.06	25.28	35.87	
1998-99	26.27	22.64	21.57	19.66	29.68	
1999-00	29.68	23.31	19.17	19.55	23.20	
2000-01	26.79	24.69	18.53	19.88	33.43	40.04
2001-02	25.74	23.51	22.21	19.72	31.02	52.42
2002-03	26.31	23.66	17.98	18.04	27.13	33.78
2003-04	31.71	24.58	18.84	19.04	28.09	38.58
2004-05	27.91	24.17	21.65	23.62	30.73	34.04
2005-06	31.37	27.98	24.85	25.10	39.59	39.10
2006-07	31.81	27.90	23.80	23.37	37.50	45.77
2007-08	30.36	31.21	24.43	23.97	39.93	47.70
Averages						
1990-95	35.20	26.53	29.86	26.56	37.81	
1995-00	32.31	24.31	23.43	22.38	31.36	
2000-05	27.69	24.12	19.84	20.06	30.08	39.77
2005-08	31.18	29.03	24.36	24.15	39.01	44.19

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

6.7 Share of Transfers in Revenue Receipts: Low Income General Category States

a. Transfers as percentage of Revenue Receipts

For the low income states in the general category, the share of transfers in revenue receipts is far more compared to the middle and high income groups. As shown by Table 6.8, for the Twelfth Finance Commission period, it varies from a minimum of 42 percent for Rajasthan to a maximum of 78.7 percent for Bihar. The following general observations can be made based on Table 6.8.

1. For Bihar the role of transfers in the revenue receipts has increased over time since 1990 and to some extent for Madhya Pradesh also.

2. It has been rather stable for Orissa, Rajasthan and Uttar Pradesh with possibly a small fall, if we compare the average for the Ninth Finance Commission period to that of the Twelfth Finance Commission period.

Table 6.8: Total Transfers from the Centre as Percentage of Revenue Receipts: Low Income States

Years	Bihar	Madhya Pradesh	Orissa	Rajasthan	Uttar Pradesh	Jharkhand
1990-91	55.88	42.85	59.93	44.17	52.59	
1991-92	61.85	41.28	61.86	44.77	52.65	
1992-93	60.74	41.42	60.52	43.95	54.55	
1993-94	60.25	42.28	60.24	44.05	51.78	
1994-95	58.65	41.12	56.46	43.01	49.47	
1995-96	60.86	38.80	54.88	34.63	48.29	
1996-97	58.79	39.30	57.45	40.67	52.43	
1997-98	68.02	41.52	57.63	40.83	52.82	
1998-99	58.83	39.27	55.11	38.31	46.00	
1999-00	57.10	37.41	58.87	37.64	46.91	
2000-01	67.14	46.12	58.43	43.65	47.77	
2001-02	72.57	43.72	55.18	40.92	52.66	50.24
2002-03	73.31	41.71	54.58	40.20	47.23	56.28
2003-04	71.86	42.13	53.43	39.59	49.80	53.94
2004-05	76.07	38.03	53.40	40.55	51.05	50.35
2005-06	77.11	45.03	53.61	39.45	51.95	47.83
2006-07	78.62	49.71	56.90	43.00	50.37	55.03
2007-08	80.44	49.48	57.90	43.01	53.22	55.65
Averages						
1990-95	59.47	41.79	59.80	43.99	52.21	
1995-00	60.72	39.26	56.79	38.42	49.29	
2000-05	72.19	42.34	55.00	40.98	49.70	52.70
2005-08	78.73	48.07	56.14	41.82	51.85	52.84

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

b. Transfers as percentage of Revenue Expenditures

There are some noticeable differences in the pattern of dependence of the low income states in financing their revenue expenditures. The dependence of Bihar on transfers in financing its revenue expenditures has gone up from 52.6 to nearly 82 percent. Similarly, the dependence of Madhya Pradesh on transfers has gone up from 41 to nearly 51 percent, comparing the Ninth Finance Commission period with the Twelfth Finance Commission period. In the interim, during the Tenth and the Eleventh Finance Commission periods, for Madhya Pradesh the dependence on transfers was limited to only about 35 and 38 percent, respectively (Table 6.9). For Orissa and Rajasthan, any

increase in dependence is not noticeable although they all seem to follow a U-shaped pattern where dependence was more for the Ninth and Twelfth Finance Commission periods and less for Tenth and Eleventh Finance Commission periods.

Table 6.9: Total Transfers from the Centre as Percentage of Revenue Expenditure: Low Income States

Years	Bihar	Madhya Pradesh	Orissa	Rajasthan	Uttar Pradesh	Jharkhand
1990-91	49.41	41.04	59.39	46.30	45.82	
1991-92	52.31	40.95	57.45	45.30	48.98	
1992-93	55.13	43.34	57.83	42.99	50.19	
1993-94	54.57	39.76	55.49	41.80	47.30	
1994-95	51.57	40.11	50.03	40.30	42.96	
1995-96	53.09	36.77	45.45	31.71	41.85	
1996-97	57.25	34.34	48.13	36.49	43.75	
1997-98	66.01	39.86	48.21	38.18	41.82	
1998-99	51.35	31.34	36.80	28.39	30.66	
1999-00	44.53	30.61	40.95	27.44	35.07	
2000-01	53.29	42.06	45.67	36.01	38.08	
2001-02	59.04	34.08	39.38	31.18	42.42	51.08
2002-03	60.47	38.36	45.99	30.91	39.89	53.88
2003-04	66.42	32.08	46.44	32.40	31.37	54.98
2004-05	81.67	41.65	51.15	36.18	43.05	43.70
2005-06	77.46	45.10	55.50	38.24	50.54	40.22
2006-07	76.11	53.51	59.42	43.16	53.36	49.69
2007-08	92.14	53.30	61.18	43.34	58.04	53.33
Averages						
1990-95	52.60	41.04	56.04	43.34	47.05	
1995-00	54.45	34.58	43.91	32.44	38.63	
2000-05	64.17	37.65	45.73	33.34	38.96	50.91
2005-08	81.90	50.63	58.70	41.58	53.98	47.75

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

6.8 Share of Transfers in Revenue Receipts: Special Category States Group 1

a. Transfers as percentage of Revenue Receipts

For the special category states considered in Group 1, the dependence is highest for Jammu and Kashmir, followed by Meghalaya and then Himachal Pradesh. For Sikkim the share of transfers in revenue receipts has come down quite significantly. It was 70 percent during the Ninth Finance Commission period and for the Twelfth Finance

Commission period, it is about 46 percent. This reflects more an increase in their own revenues rather than a fall in the transfers (Table 6.10).

Table 6.10: Total Transfers from the Centre as Percentage of Revenue Receipts: Special Category States: Group 1

Years	Himachal Pradesh	Jammu and Kashmir	Meghalaya	Sikkim	Uttaranchal
1990-91	72.70	80.79	84.50	76.17	
1991-92	73.06	84.36	83.86	78.07	
1992-93	72.59	79.30	85.47	79.68	
1993-94	74.31	86.40	84.76	81.39	
1994-95	66.92	85.95	82.10	36.68	
1995-96	73.84	86.74	80.53	31.21	
1996-97	71.94	83.61	82.91	26.48	
1997-98	67.83	84.32	85.16	26.33	
1998-99	66.37		83.21	27.16	
1999-00	54.88	82.64	80.20	28.96	
2000-01	70.27	82.29	81.87	58.86	61.22
2001-02	70.02	78.65	79.52	33.12	61.33
2002-03	70.95	79.06	81.56	31.68	56.61
2003-04	67.94	79.08	78.08	51.89	55.65
2004-05	59.81		77.93	41.37	51.24
2005-06	66.66		77.18	42.10	56.03
2006-07	65.47		82.04	51.36	56.47
2007-08	62.30		84.20	44.74	59.75
Averages					
1990-95	71.92	83.36	84.14	70.40	
1995-00	66.97	84.33	82.40	28.03	
2000-05	67.80	79.77	79.79	43.39	57.21
2005-08	64.81		81.14	46.07	57.42

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

b. Transfers as percentage of Revenue Expenditures

There are significant changes in the pattern of dependence on transfers in financing revenue expenditures for these special category states. In particular, the extent of dependence increases rather than falls for most of these states. In the case of Jammu and Kashmir, the dependence on transfers for financing revenue expenditures has been as high as 97 percent (Eleventh Finance Commission period). For Meghalaya also this dependence has been in the range of 82-92 percent looking at Commission period averages (Table 6.11).

Table 6.11: Total Transfers from the Centre as Percentage of Revenue Expenditure: Special Category States: Group 1

Years	Himachal Pradesh	Jammu and Kashmir	Meghalaya	Sikkim	Uttaranchal
1990-91	65.05	86.13	95.97	94.82	
1991-92	73.79	97.00	91.98	91.84	
1992-93	66.70	73.77	89.26	92.79	
1993-94	80.56	111.84	87.91	96.91	
1994-95	54.15	108.92	95.28	38.06	
1995-96	68.01	92.22	94.89	33.34	
1996-97	66.75	81.76	98.16	27.40	
1997-98	54.55	91.66	86.61	27.20	
1998-99	46.02		84.97	26.16	
1999-00	53.35	89.74	81.57	29.00	
2000-01	48.91	106.12	85.86	66.52	61.93
2001-02	56.86	93.79	77.21	35.97	59.17
2002-03	50.49	93.82	87.28	35.01	49.56
2003-04	48.40	94.11	83.14	58.93	45.94
2004-05	47.85		75.48	45.43	41.57
2005-06	67.61		80.52	46.79	55.29
2006-07	64.97		95.21	63.08	59.59
2007-08	60.24		99.90	51.96	66.74
Averages					
1990-95	68.05	95.53	92.08	82.89	
1995-00	57.74	88.85	89.24	28.62	
2000-05	50.50	96.96	81.79	48.37	51.64
2005-08	64.27		91.88	53.94	60.54

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

6.9 Share of Transfers in Revenue Receipts: Special Category States Group 2

a. Transfers as percentage of Revenue Receipts

For the relatively lower income states included in the Group 2 of the special category states, as shown in Table 6.12, the minimum dependence on transfers has been for Assam in the range of 63-69 percent of the revenue receipts. In comparison, the highest dependence has been for Nagaland where transfers accounted for 90-93 percent of their revenue receipts. Except for Assam, all the four other states are now deriving

nearly 87-92 percent of their revenue receipts from transfers as shown by the relevant percentages for the Twelfth Finance Commission period.

Table 6.12: Total Transfers from the Centre as Percentage of Revenue Receipts: Special Category States: Group 2

Years	Arunachal Pradesh	Assam	Manipur	Mizoram	Nagaland	Tripura
1990-91	87.86	60.73	89.69	70.49	89.39	91.05
1991-92	88.04	67.96	91.99	91.67	90.79	91.72
1992-93	88.42	62.57	92.26	91.51	91.32	90.88
1993-94	83.75	71.01	91.96	92.86	93.33	90.31
1994-95	85.77	67.63	87.53	92.75	86.19	90.63
1995-96	88.23	69.25	89.39	91.77	92.97	90.77
1996-97	90.91	71.76	90.92	92.05	91.72	90.17
1997-98	92.29	70.80	91.16	92.56	92.06	90.16
1998-99	91.79	68.17	93.06	93.83	92.25	89.83
1999-00	92.07	65.51	92.28	94.53	91.94	87.63
2000-01	91.21	65.59	91.31	93.38	92.95	86.56
2001-02	90.07	64.81	93.14	92.63	93.26	86.28
2002-03	61.88	61.32	90.84	92.11	92.44	85.02
2003-04	89.62	61.16	91.65	93.30	94.51	82.04
2004-05	85.37	61.93	91.34	92.33	91.51	83.84
2005-06	85.72	61.05	92.88	89.41	91.08	88.11
2006-07	88.38	67.65	90.77	90.83	92.59	86.66
2007-08	89.04	66.23	90.09	91.42	92.64	86.90
Averages						
1990-95	86.77	65.98	90.69	87.86	90.21	90.92
1995-00	91.06	69.10	91.36	92.95	92.19	89.71
2000-05	83.63	62.96	91.66	92.75	92.93	84.75
2005-08	87.71	64.98	91.25	90.55	92.10	87.22

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

b. Transfers as percentage of Revenue Expenditures

For the special category states included in this Group, we find that the share of transfers in revenue expenditures is more than 100 percent for some years and some states (Table 6.13). This applies to all states in this group except Assam. The reason for this is that part of the transfers in the form of plan grants that are meant for capital expenditures.

Table 6.13: Total Transfers from the Centre as Percentage of Revenue Expenditure: Special Category States: Group 2

Years	Arunachal Pradesh	Assam	Manipur	Mizoram	Nagaland	Tripura
1990-91	121.92	56.19	115.55	106.82	88.29	90.74
1991-92	136.48	76.49	109.85	114.21	91.95	94.33
1992-93	130.80	66.71	111.31	103.07	89.08	99.85
1993-94	114.73	81.20	121.56	111.46	86.86	90.28
1994-95	118.33	61.23	101.95	107.73	75.34	95.20
1995-96	131.10	65.38	99.92	101.89	85.92	108.16
1996-97	122.12	77.47	103.75	99.01	92.65	102.27
1997-98	116.20	75.83	98.62	100.93	91.06	92.00
1998-99	113.56	69.56	105.82	99.82	91.07	96.92
1999-00	114.38	54.25	68.75	100.80	89.12	86.27
2000-01	96.43	57.63	84.35	75.71	92.92	81.77
2001-02	92.52	56.47	81.92	71.25	96.15	88.87
2002-03	66.49	58.57	85.25	83.20	85.84	81.52
2003-04	101.49	56.20	88.91	99.33	123.02	86.26
2004-05	84.93	60.16	96.40	99.45	99.92	98.98
2005-06	95.06	69.80	111.63	93.11	100.21	111.41
2006-07	107.23	65.09	122.63	99.64	108.70	104.69
2007-08	95.72	69.93	105.53	99.82	115.49	105.28
Averages						
1990-95	124.45	68.36	112.05	108.66	86.30	94.08
1995-00	119.47	68.50	95.37	100.49	89.96	97.13
2000-05	88.37	57.81	87.37	85.79	99.57	87.48
2005-08	99.34	68.27	113.26	97.52	108.14	107.13

Source (Basic Data): Reserve Bank of India, State Finances A Study of Budgets, various years.

6.10 Some General Observations

In a scheme of transfers that aims to achieve a suitable degree of equalization, it is to be expected that the share of transfers in revenue receipts and dependence of states on transfers for financing their revenue expenditures would in general be larger for the states that have relatively lower fiscal capacities. Any departures from this expected scheme of things would be due to higher than average tax effort on the part of some states (where the share of transfers in revenue receipts will be less than average) or due to some components of transfers that are not equalizing in nature.

Chart 6.5 shows the transfers as percentage of revenue receipts and revenue expenditures with reference to the Ninth Finance Commission period averages of all the

general categories states except Goa. States are arranged in descending order of per capita GSDP at current prices relevant for the period 1990-95. It will be seen that the general expected pattern is exhibited showing higher dependence on transfers of the lower income states. The curve showing the transfers as percentage of revenue expenditures shows the same pattern across states as that with revenue receipts. However, the gap between the two curves is generally larger as we move towards the lower income states.

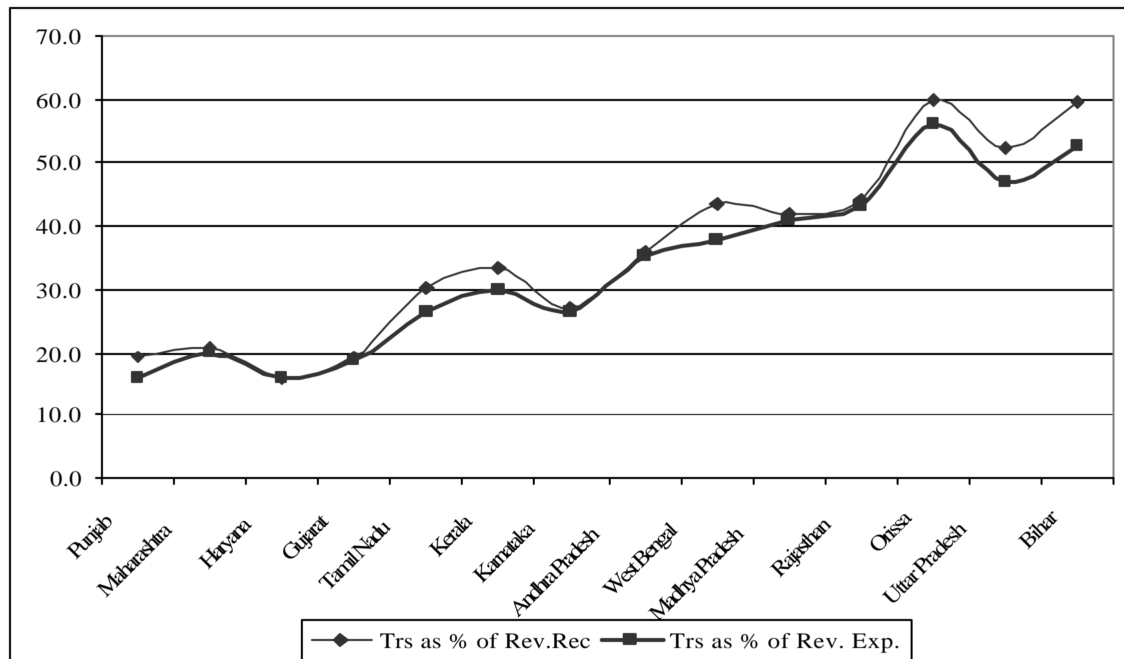

Chart 6.5: Ninth Finance Commission: Transfers as percentage of State's Revenue Receipts and Revenue Expenditures

Chart 6.6 shows a similar pattern for the relevant averages for the Tenth Finance Commission period. With respect to the share of transfers in revenue receipts, the general upward trend as we move to the lower income states is broken only for Uttar Pradesh where the extent of dependence on transfers is lower as compared to Orissa. This pattern was also observable in Chart 6.5 for the Ninth Finance Commission period. The pattern of higher dependence of transfers for revenue expenditures as we move towards lower income states is also clearly visible.

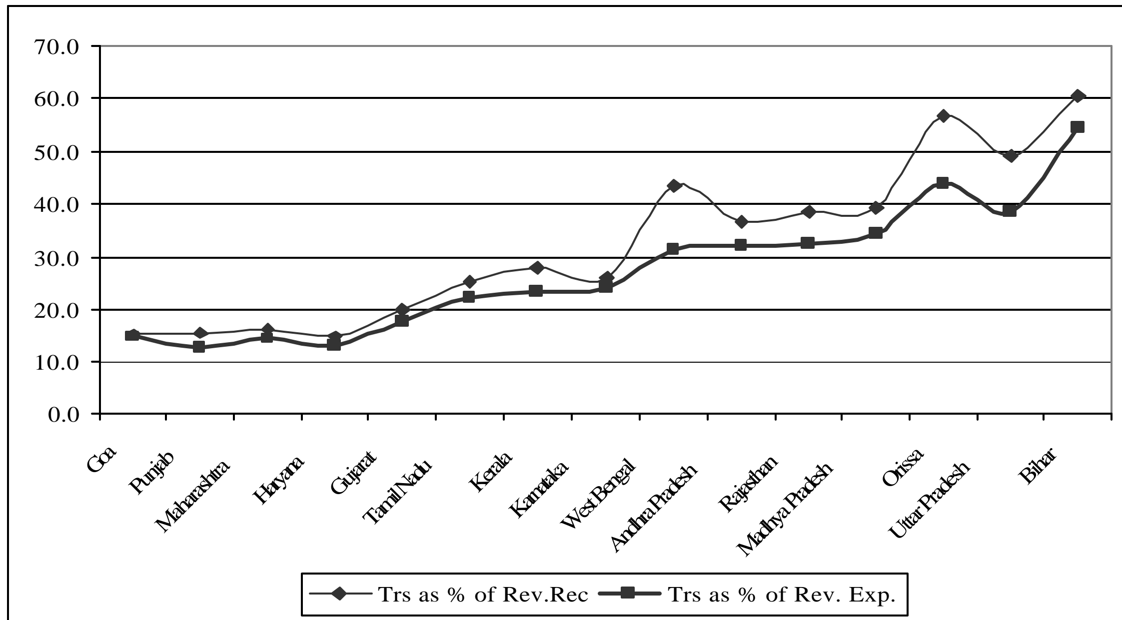

Chart 6.6: Tenth Finance Commission: Transfers as percentage of State's Revenue Receipts and Revenue Expenditures

Chart 6.7 shows a similar patter for the Eleventh Finance Commission period. However, the lower dependence of Uttar Pradesh on fiscal transfers as compared to other lower income states is again clearly visible. Alongwith Uttar Pradesh, Madhya Pradesh also seems to be in a similar position. In their cases, the degree of dependence is lower compared to some states with comparatively higher incomes.

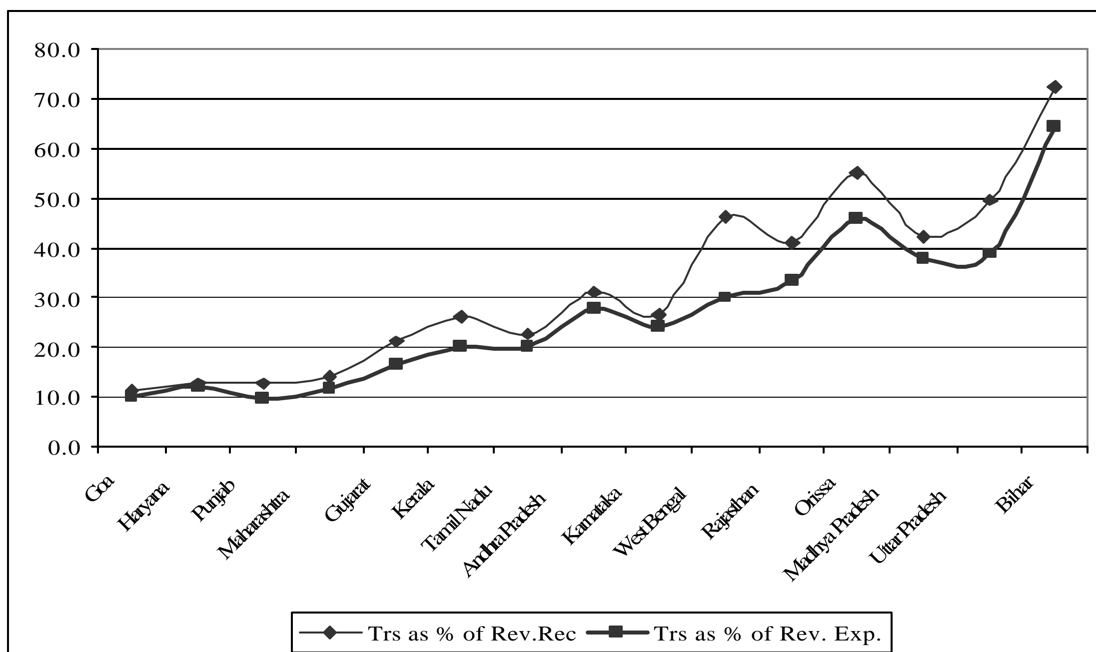

Chart 6.7: Eleventh Finance Commission: Transfers as percentage of State's Revenue Receipts and Revenue Expenditures

6.11 Conclusions

In this Chapter, we have looked at the pattern of dependence of the states on central transfers. This analysis is done with respect to the revenue receipts of the states as also their revenue expenditures. We have looked at the pattern of dependence both in terms of the aggregate account of the states and for individual states.

State's dependence of the share of central taxes has changed over time. These changes are partly due to the recommendation of the Finance Commission regarding the share that should be given to the states from centre's shareable portion of tax revenues as well as on changes in macro variables. Important among the macro variables are the ratio of the centre's gross tax revenue and state's own revenue receipts with respect to GDP. The following observations can be made.

Third Finance Commission: relative to the average for the preceding Commission's period, states' dependence on central taxes increased inspite of a fall in the share of central taxes in gross central tax revenues. This is because of a large positive role played by an increase in centre's tax-GDP ratio.

Sixth Finance Commission: There is a fall in the states' share in central taxes relative to states' revenue receipts. This is almost entirely due to a fall in the share of central taxes in gross central tax revenues.

Eighth and Eleventh Finance Commissions: There is a fall in states' dependence on share in central taxes relative to the averages for the immediately preceding commission periods. This is mainly due to a fall in the share of central taxes in gross central tax revenue.

Ninth and Tenth Finance Commissions: There is a fall in states' dependence on share in central taxes relative to the commission-period average. This is mainly due to a fall in centre's tax-GDP ratio. In the case of the Tenth Finance Commission period, there was a fall in states' revenue effort.

In all other periods, the dependence of the states' on their share in central taxes increased and it was due to a combination of both an increase in the share of central taxes in gross central tax revenues and an increase in centre's tax effort. Throughout this period, except for the period of the Tenth Finance Commission, states' own revenue

effort also increased indicating that the role played by central taxes increased on a trend basis inspite of the increasing revenue effort of the states' themselves.

State-wise analysis of the pattern of dependence indicates as to how far the states rely on central transfers for their revenues and how far their revenue expenditures are financed by central transfers. Some to the main finding are summarised below.

a. In the case of Goa, the extent of transfer has come down over time from an average of 37 percent during 1990-95 to just about 10 percent during 2000-05, subsequently there is a marginal improvement.
b. For Haryana the share has ranged between 11.9 - 16.4 percent.
c. For Maharashtra it has ranged between 11.4 percent on an average to 21.6 percent. The lowest share was in the EFC period.
d. For Punjab the share has varied between 9.7 - 19.8 percent. Here also the lowest share was during the Eleventh Finance Commission award period.
e. Comparing across Finance Commissions, the high income group states got the lowest shares during Eleventh Finance Commission period, followed by Tenth Finance Commission period.

As far as shares of transfers in revenue expenditures for the middle income states are concerned the following are the noticeable points.

a. In the case of Kerala and Tamil Nadu, the dependence on transfers for financing revenue expenditure came down close to 20 percent during the Eleventh Finance Commission period, although since then both of these shares increased to a little more than 24 percent for the Twelfth Finance Commission period.
b. Leaving Chhattisgarh, the highest dependence on transfers among the middle income states for financing revenue expenditures has been that for West Bengal, which has been in the range of 30-39 percent.
c. The next state in this order is Andhra Pradesh where the dependence on transfers for financing revenue transfers has ranged between 27.7- 35.2 percent.
d. The range of variation in these ratios across Finance Commission period averages is relatively narrow.

The extent of dependence is far more for the special category states. As percentage of their revenue receipts, the dependence is highest for Jammu and Kashmir, followed by Meghalaya and then Himachal Pradesh. For some the special category states included, we find that the share of transfers in revenue expenditures is more than 100 percent for some years and some states.

In a scheme of transfers that aims to achieve a suitable degree of equalization, it is to be expected that the share of transfers in revenue receipts and the dependence of the states on transfers for financing their revenue expenditures would in general be larger for the states that have relatively lower fiscal capacities. Any departures from this expected pattern would be due to higher than average tax effort on the part of some states (where the share of transfers in revenue receipts will be less than average) or due to some components of transfers that are not equalizing in nature.

Chapter 7

Summary and Conclusions

In this study, we looked at the trends in fiscal transfers in India, particularly those given under the recommendations of the Finance Commissions. In analyzing these trends, we have also looked at the changes in the constitutional provisions having a bearing on fiscal transfers as well as the evolution of principles and methodologies for determining the share of central taxes for the states as well as grants. We summarise below the main findings pertaining to (a) the sharing of central taxes with the states, (b) grants given under the recommendations of the Finance Commission, (c) total transfers to the states, (d) the quality of forecasts made by the Finance Commissions regarding central taxes, (e) vertical and horizontal components of transfers under the Finance Commission, and (f) changes in the profile of dependence of the states on central transfers.

7.1 Sharing of Central Taxes

a. Constitution Provisions

Over the period covered by twelve Finance Commissions, the constitutional arrangements as well at the principles and practices governing the sharing of central taxes with the states in India have constantly evolved. Article 270, originally provided for a mandatory sharing of the income tax revenues whereas Article 272 stipulated that revenues from Union excise duties 'may be' shared with the states. The base shareable central taxes has progressively widened to cover all central taxes except earmarked cesses and surcharges and article 268/269 taxes (including the service tax). All central taxes with these exceptions are now subject to mandatory sharing with the states. These changes were brought by the 80th amendment to the constitution, which followed the suggested alternative scheme of devolution given by the Tenth Finance Commission.

Historically, the distinction between Article 270 and 272 led the earlier Finance Commissions to use the sharing of income taxes far more as an instrument of vertical transfers and the sharing of Union excise duties as a tool to achieve relatively more the objective of horizontal equity.

b. Revenue Sharing Criteria

The main criteria for determining the *inter se* shares of the states used by the different Finance Commissions relate to: population, income-distance, inverse-income, area, index of infrastructure, index of fiscal discipline, and index of tax effort. Some of the earlier Commissions had also used index of poverty or index of backwardness. The factor of collection/assessment was also used in the case of sharing of income tax.

Over time, the criteria for determining the *inter se* shares of the states converged. A broad base of central taxes are now shared and all taxes are shared using the same criteria. With this, the need to use sharing of taxes as a tool for achieving both the vertical and horizontal objectives of transfers became important through a suitable selection of criteria and weights. The analytical properties of criteria currently being used by the Finance Commissions is such that the population criteria is a suitable instrument of vertical transfers and the distance criterion can serve to achieve equalization. Area and infrastructure are criteria reflecting cost disadvantages while criteria of tax effort and fiscal discipline are meant to serve as incentives.

Under certain assumptions, the distance criterion can be used to achieve equalization. For fiscal capacity equalization, the amount of total transfers required depends on the average tax-GSDP ratio of the states and the distributions of populations and per capita GSDPs. These can be used to determine a suitable weight for the distance criterion rather than determining it arbitrarily as has been the case with the Finance Commissions so far.

c. Trends in Tax Devolution

The following trends in tax devolution from the centre to the states:

1. Empirical trends indicate that the share of the special category states as a group has been roughly in line with their share of population for the earlier Commissions. From the period of the Seventh to the Tenth Finance Commissions, they obtained a relatively larger share as part of the sharing of Union excise duties was on the basis of assessed deficits that are otherwise to be given as grants.
2. For the Tenth, Eleventh, and Twelfth Finance Commissions, their share in central taxes is still higher than their share in population because of the use of a 'floor' in the index of 'area'.

3. The share of the general category states in total tax devolution was as high as 97.3 percent under the scheme suggested by the First Finance Commission. It came down to about 86.5 percent in the award period of the Tenth Finance Commission and has risen to about 91.8 percent for the Twelfth Finance Commission period.
4. Among the general category states, looking at high income, middle income and low income states as groups, the general pattern seems to be that as we move to the more recent Commissions, the share of low income states has increased while the share of middle income states and the high income states has fallen. This could be interpreted as the outcome of introduction of more equalizing principles particularly after the Seventh Finance Commission.

7.2 Finance Commission Grants

States get grants from the Finance Commission, Planning Commission and other Central Ministries. The Finance Commission grants are for meeting the assessed revenue gap of the states (on non-plan of total revenue account, as the case may be) as also for various other purposes including for special needs and upgradation of standards. From a methodological viewpoint, the determination of the revenue-gap grants are the most important. It is the determination of these grants that necessitates the Finance Commission to undertake a comprehensive examination of both central and state finances. It is in this context that the Finance Commissions have often been accused of following a gap-filling approach, which leads to significant adverse incentives.

Finance Commissions, particularly from the Ninth Finance Commission onwards, have attempted to apply to some extent normative principles for making an assessment of state's own tax and non-tax revenues as well as revenue expenditures. This is done in two steps. The first step requires the estimation of the variables for the base year. Secondly, projections for the recommendation period are made. While the Ninth Finance Commission used a panel data modeling approach to determine the tax base in the base year, some of the more recent Finance Commissions have used partial adjustments in respect of those states whose tax-GSDP ratios were below the average tax-GSDP ratio for the relevant group of general and special category states. Commissions have also used a normative cum prescriptive set of parameters for projections for the recommendation period using the adjusted base year figures. On the expenditure side, application of

normative principles has been more limited. In some priority services, like health and education, higher growth rates have been adopted.

The outcome of these exercises has been to determine the revenue-gap grants. It seems that with the buoyancy of central tax revenues, the resultant assessed gap for the general category states has been all but eliminated. It is only the special category states that now get a significant portion of the revenue gap grants. In their case, the application of normative principles has been minimal. It may be worthwhile considering whether the revenue needs of the special category states, which are much higher in per capita terms than the general category states mainly on account of committed expenditures due to very large plan sizes in the past relative to their population size though a separate window. If grants for the special category states are separately worked out, the importance of the revenue grants for the general category states would become quite marginal. In fact, it may be better to focus only on selected set of services like health and education for a full fledged application of the normative methodology guided by the equalization principle.

7.3 Trends in Fiscal Transfers: Vertical Imbalance

The finances of the central and state governments went into revenue deficit on permanent basis since 1979-80 for the centre, 1987-88 for the states considered together, and 1982-83 for their joint account. These accounts have remained in such deficit until now. The states appear to be emerging into revenue account surplus once again. At its peak, the combined revenue deficit was close to 6.9 percent of GDP in 2001-02. After that there has been an improvement. Large revenue deficits have made the task of achieving vertical balance through fiscal transfers quite difficult.

There is a steady improvement in the share of transfers to the states as percentage of centre's gross revenue receipts. From the level of about 25 percent under the Third Finance Commission, this share increased to 39.1 percent for the Ninth Finance Commission period and may turn out to be above 40 percent for the Twelfth Finance Commission period.

The share of centre and states in the combined revenue receipts before transfers and after transfers get completely reversed. Before transfers, centre's share has been in the range of 61-66 percent from the Second Finance Commission period onwards. However, after transfers, centre's share in combined receipts has fallen to 36-37 percent. State's share, on the other hand, has increased from 56 to 64 percent between the Seventh and the Twelfth Finance Commission periods. The relative shares of the centre and the states in the combined revenue expenditures however, have remained stable throughout the period covered by the First to Twelfth Finance Commission periods. States' share in the combined revenue expenditures throughout this period has been on average about 57 percent whereas that of centre has been at 43 percent with small variations. A falling share in revenue receipts after transfers for the centre while maintaining a stable share in revenue and total expenditure can only imply that centre's share in borrowing has increased over these years.

Looking at the state-wise picture of transfers recommended by the Finance Commissions including share in taxes as well as Finance Commission grants, the trend seems to be that Finance Commission transfers have moved in favour of lower income states whereas the share of middle incomes states has fallen marginally and that of high income state have fallen more sharply. This indicates that for the more recent Finance Commissions, particularly from the Seventh Finance Commission period, there has been an attempt at achieving a greater degree of equalization. It may also imply a response to increasing inequalities in per capita incomes across states.

7.4 Measuring Forecast Accuracy

Finance Commissions in India are required to make their recommendations for a period of five years based on information of about central and state fiscal aggregates that are generally dated. Between the last year of the recommendation period and the last year for which accounts data are available, the gap could be seven to eight years. The Finance Commissions have to make forecasts for various fiscal aggregates and then determine grants that are specified in absolute amounts. We have looked at the nature of forecast error in one core determinant of grants, viz., forecast of central revenues. It turns out that

that among the four recent Finance Commission, three Commissions, viz., Ninth, Tenth, and Twelfth, have underestimated the central tax revenues, and the Eleventh Commission overestimated these.

We have analyzed the forecast error for four major central taxes as well as total central taxes for the Ninth Finance Commission period onwards. Some of the findings may be highlighted as below:

1. For income tax, for the period 1989-90 to 2007-08, revenues were underestimated for 15 out of nineteen years. The percentage error ranged from (-) 28.1 percent to 43.2 percent. The four years of overestimation are all in the recommendation period of the Eleventh Finance Commission.
2. In the case of the Union excise duties, the revenues were overestimated by all Commissions. For 18 out of 19 years analyzed here, there was overestimation. The error of overestimation ranged from (-) 1.3 to (-) 32.3 percent.
3. In the case of corporation tax, there was underestimation except for 4 years under the Eleventh Finance Commission.
4. In the case of customs duties, there was overestimation in 12 out of 19 years.
5. For total central taxes revenues, for 10 years there is underestimation and for 9 years there is overestimation. The errors range from (-) 24.5 to 23.0 percent.
6. It is observed that the extent of percentage error increases, as we move towards the later years in a Commission's recommendation period.
7. An analysis of errors indicates that the systematic error of bias (in prediction of means) almost always accounts for a large part of the error.

The cost of forecast error is asymmetric for the states. If the Finance Commission overestimates central tax revenues, it would recommend smaller grants, which will not be revised upwards seeing that central taxes have not performed as well as anticipated. On the other hand, if there is underestimation, grants would be larger and will remain remained fixed. If central taxes perform better than anticipated, states would gain as grants are protected and centre is able to give these out of the larger than anticipated tax revenues. It is evident that none of the Finance Commissions was able to pick up the volatility in the GDP growth rates or in tax buoyancies. There is a need to employ more advanced forecasting methodologies so that the cost of errors can be minimized.

7.5 Vertical and Horizontal Impact

We have looked at a decomposition of the transfers in terms of their vertical and horizontal components from the centre to the states under the recommendation of the Finance Commissions. These transfers include state's share in central taxes and statutory grants and grants for natural calamities. Vertical transfers are given in equal per capita amount to all states including the highest fiscal capacity state. Horizontal transfers are given in per capita terms over and above the vertical transfers. These are meant to redress deficiency of fiscal capacity of the states relative to a benchmark and also to take into account cost disabilities. This analysis has been done for periods covered by the Ninth, Tenth, Eleventh and Twelfth Finance Commissions both in aggregate and state specific terms. The following are the some of the salient findings.

i. For the Ninth and Tenth Finance Commissions, the relative share of vertical transfers was 59 and 57 percent, respectively. This share came down to 39 percent for Eleventh Finance Commission and 48 percent for the Twelfth Finance Commission. Correspondingly, the Eleventh Finance Commission devoted 61 percent of total transfers for meeting the horizontal objectives.
ii. A regression of per capita transfers on per capita nominal GSDP indicates that in all cases relating to the four Finance Commissions reviewed here, a one percent increase in the per capita GSDP of a state would lead to a fall in per capita transfer. The elasticity of response varies from (-) 0.36 for the Tenth Finance Commission to (-) 0.73 for the Eleventh Finance Commission.
iii. Per capita transfers are considerably higher for the special category states as compared to the general category states. For the Twelfth Finance Commission, these are nearly 6 times as high as those for the general category states.

7.6 Dependence of States on Central Transfers

We have also looked at the pattern of dependence of the states on central transfers. This analysis is done with respect to the revenue receipts of the states as also their revenue expenditures. We have looked at the pattern of dependence both in terms of the aggregate account of the states and for individual states.

States' dependence of the share of central taxes has changed over time. These changes are partly due to the recommendation of the Finance Commissions as to the share that should be given to the states from centre's shareable taxes as well as on changes in relevant macro variables like the ratios of the centre's gross tax revenues and state's own revenue receipts to GDP.

The following observations can be made.

1. Third Finance Commission: Relative to the average for the preceding Commission period, states' dependence on central taxes increased inspite of a fall in the share of central taxes in gross central tax revenue. This is because of a large positive role played by an increase in centre's tax-GDP ratio.

2. Sixth Finance Commission: There is a fall in the states' share in central taxes relative to states' revenue receipts. This is almost entirely due to a fall in the share of central taxes in gross central tax revenues.

3. Eighth and Eleventh Finance Commissions: There is a fall in states' dependence on share in central taxes relative to average for preceding Commission period. This is mainly due to a fall in the share of central taxes in gross central tax revenues.

4. Ninth and Tenth Finance Commissions: There is a fall in states' dependence on the share in central taxes relative to the average for the preceding Commission period. This is mainly due to a fall in centre's tax-GDP ratio. In the case of the Tenth Finance Commission period there was a fall in states' revenue effort.

In all other periods, the dependence of the states on share in central taxes increased and it was due to a combination of both an increase in the share of central taxes in gross central tax revenues and an increase in centre's tax effort. Throughout this period, except for the period of the Tenth Finance Commission, states' own revenue effort also increased indicating that the role of played by central taxes increased on a trend basis inspite of the increasing revenue effort of the states' themselves.

State-wise analysis of dependence on central transfers indicates as to how far the states rely for their revenues on central transfers and how far their revenue expenditures are financed by central transfers. Some of the main findings are summarised below.

i. In the case of Goa, the extent of transfer has come down over time from an average of 37 percent during 1990-95 to just about 10 percent during 2000-05. Subsequently there is a marginal increase.
ii. For Haryana, the share has ranged between 11.9 - 16.4 percent.
iii. For Maharashtra it has ranged between 11.4 percent on an average to 21.6 percent. The lowest share was in the Eleventh Finance Commission period.
iv. For Punjab the share has varied between 9.7 - 19.8 percent. Here also, the lowest share was during the Eleventh Finance Commission award period.
v. Comparing across Finance Commissions, the high income group states have got the lowest shares during Eleventh Finance Commission period, followed by Tenth Finance Commission period.

As far as transfers in revenue expenditures is concerned for the middle income states, the following are some of the noticeable points.

i. In the case of Kerala and Tamil Nadu the dependence on transfers for financing revenue expenditure came down to close to 20 percent during the Eleventh Finance Commission period, although since then both of these shares have increased to a little more than 24 percent for the Twelfth Finance Commission period.
ii. Leaving Chhattisgarh, the highest dependence on transfers among the middle income states for financing revenue expenditures, has been for West Bengal, being in the range of 30-39 percent.
iii. The next state in this order is Andhra Pradesh where the extent of dependence on transfers for financing revenue transfers has ranged between 27.7 to 35.2 percent.
iv. The range of variation in these ratios for the middle-income states across Finance Commission period averages, considering Ninth to Twelfth Finance Commissions, is relatively narrow.

The extent of dependence is far more for the special category states. As percentage of their revenue receipts, the dependence is the highest for Jammu and Kashmir, followed by Meghalaya and then Himachal Pradesh. For some of the special category states, we find that the share of transfers in revenue expenditures is more than 100 percent for some years.

In a scheme of transfers that aims to achieve a suitable degree of equalization, it is to be expected that the share of transfers in revenue receipts and dependence of states on transfers for financing their revenue expenditures would in general be larger for the states that have relatively lower fiscal capacities. Any departures from this expected pattern would be due to higher than average tax effort on the part of some states (where the share

of transfers in revenue receipts will be less than average) or due to some components of transfers that are not equalizing in nature.

7.7 Some Lessons for the Future

In the context of vertical transfers, a review of the pattern of the transfers, considering overall transfers including those by the Planning Commission and the central ministries, indicates that the share of the states in the combined revenue receipts has increased over time but their share in the combined revenue expenditures have remained stable. This implies that the share of centre in the combined borrowing has increased over time. With fiscal deficit targets for the two tiers of governments being similar under the respective FRBMAs, maintaining the current pattern of shares in revenue expenditures would imply either that that centre's revenue receipts should increase proportionately more or they are allowed a higher limit under the FRBMA or some adjustment takes place in the revenue expenditures.

In respect of the horizontal dimension of transfers, the trend towards achieving equalization appears to be a correct one. Redefining the benchmark reasonably below the average of three highest income group states in the distance formula and using a 'censored' distance formula, suitably complemented with equalization through grants would permit achieving full fiscal capacity equalization. The special category states require a separate exercise for determining grants to ensure fairness within this group of states. Fiscal capacity equalization should be supplemented by a comprehensive equalization exercise taking into account both need and cost considerations for at least two services, namely, health and education.

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Appendix Tables

Appendix Table 3.1: Revenue Account Balance as percent of GDP at Market Prices (1999-00 Base Series)

	Revenue Surplus as % of GDP				Revenue Surplus as % of GDP		
	Combined	**Centre**	**States**		**Combined**	**Centre**	**States**
1950-51	0.552	0.533	0.020	1978-79	1.282	0.262	1.019
1951-52	1.276	1.179	0.127	1979-80	0.699	-0.568	1.267
1952-53	0.308	0.370	0.032	1980-81	0.085	-0.534	0.619
1953-54	0.104	0.074	-0.026	1981-82	0.595	-0.172	0.767
1954-55	0.185	0.309	-0.107	1982-83	-0.191	-0.657	0.465
1955-56	0.016	0.378	-0.407	1983-84	-0.980	-1.078	0.098
1956-57	0.554	0.710	-0.197	1984-85	-1.764	-1.403	-0.360
1957-58	0.488	0.318	0.228	1985-86	-1.784	-1.978	0.193
1558-59	0.285	-0.035	0.320	1986-87	-2.463	-2.470	0.007
1959-60	0.518	0.268	0.249	1987-88	-2.843	-2.553	-0.290
1960-61	0.431	0.286	0.145	1988-89	-2.907	-2.477	-0.430
1961-62	0.430	0.677	-0.247	1989-90	-3.162	-2.443	-0.719
1962-63	0.688	0.572	0.116	1990-91	-4.155	-3.259	-0.897
1963-64	1.190	0.823	0.367	1991-92	-3.347	-2.484	-0.863
1964-65	1.245	1.031	0.214	1992-93	-3.140	-2.468	-0.672
1965-66	1.020	1.141	-0.122	1993-94	-4.180	-3.779	-0.401
1966-67	0.555	0.721	-0.167	1994-95	-3.604	-3.055	-0.549
1967-68	0.277	0.281	-0.004	1995-96	-3.227	-2.495	-0.733
1968-69	0.257	0.206	0.051	1996-97	-3.534	-2.366	-1.165
1969-70	0.137	0.289	-0.152	1997-98	-4.135	-3.042	-1.094
1970-71	0.315	0.352	-0.037	1998-99	-6.313	-3.825	-2.489
1971-72	-0.183	-0.202	0.018	1999-00	-6.217	-3.463	-2.754
1972-73	-0.095	0.032	-0.127	2000-01	-6.441	-4.054	-2.387
1973-74	0.179	0.356	-0.177	2001-02	-6.887	-4.391	-2.496
1974-75	1.487	0.975	0.512	2002-03	-6.595	-4.389	-2.206
1975-76	2.184	1.053	1.132	2003-04	-5.687	-3.553	-2.134
1976-77	1.537	0.329	1.208	2004-05	-3.599	-2.506	-1.094
1977-78	1.410	0.418	0.991	2005-06	-2.609	-2.587	-0.021
				2006-07 RE	-3.445	-3.387	-0.058
				2007-08 BE	-1.955	-2.590	0.634

Source: Indian Public Finance Statistic, various years.

Appendix Table 3.2: Transfers Relative to Centre's Gross Revenue Receipts and GDP

	Share in central taxes	Total grants	Total transfers	Centre's gross revenue receipts	GDPmp	Transfers as percent of	
	Rs. crore	Rs. crore	Rs. crore	Rs. crore	Rs. crore	CGRR	GDPmp
1950-51	47.98	26.60	74.58	477	10085	15.65	0.74
1951-52	52.79	30.67	83.46	581	10722	14.37	0.78
1952-53	74.78	33.36	108.14	504	10522	21.44	1.03
1953-54	72.21	40.73	112.94	482	11452	23.44	0.99
1954-55	70.86	60.73	131.59	525	10833	25.08	1.21
1955-56	73.59	72.69	146.28	576	11030	25.40	1.33
1956-57	77.57	84.27	161.84	669	13140	24.20	1.23
1957-58	116.43	117.95	234.38	820	13536	28.59	1.73
1958-59	147.93	130.84	278.77	849	15086	32.83	1.85
1959-60	151.57	134.78	286.35	966	15895	29.65	1.80
1960-61	164.87	224.06	388.93	1168	17408	33.31	2.23
1961-62	178.63	216.64	395.27	1365	18445	28.95	2.14
1962-63	224.02	222.19	446.21	1679	19827	26.58	2.25
1963-64	259.65	252.70	512.35	2119	22774	24.18	2.25
1964-65	258.2	322.83	581.03	2369	26563	24.53	2.19
1965-66	276.38	384.45	660.83	2615	28016	25.27	2.36
1966-67	373.04	467.62	840.66	2868	31711	29.31	2.65
1967-68	416.07	530.22	946.29	3000	37133	31.55	2.55
1968-69	491.13	572.68	1063.81	3272	39324	32.51	2.71
1969-70	620.6	606.29	1226.89	3671	43298	33.42	2.83
1970-71	754.65	583.37	1338.02	4071	46249	32.87	2.89
1971-72	945.04	873.15	1818.19	4941	49523	36.79	3.67
1972-73	1061.94	947.70	2009.64	5607	54590	35.84	3.68
1973-74	1170.19	969.60	2139.79	6202	66428	34.50	3.22
1974-75	1224.66	1058.86	2283.52	7703	78426	29.65	2.91
1975-76	1599.23	1284.85	2884.08	9557	84221	30.18	3.42
1976-77	1681.88	1584.72	3266.60	10300	90750	31.71	3.60
1977-78	1797.72	1907.45	3705.17	11389	102796	32.53	3.60
1978-79	1956.75	2568.20	4524.95	12960	111370	34.91	4.06
1979-80	3406.37	2200.00	5606.37	14468	122155	38.75	4.59
1980-81	3791.21	2756.45	6547.66	16275	145370	40.23	4.50
1981-82	4273.98	2840.08	7114.06	19414	170805	36.64	4.17
1982-83	4639.65	3583.99	8223.64	22146	191059	37.13	4.30
1983-84	5244.57	4292.44	9537.01	24962	222485	38.21	4.29
1984-85	5777.33	5053.02	10830.35	29327	249268	36.93	4.34
1985-86	7491.46	6555.10	14046.56	35535	281330	39.53	4.99
1986-87	8474.46	7041.13	15515.59	41424	314816	37.46	4.93
1987-88	9597.99	8640.69	18238.68	46628	357861	39.12	5.10
1988-89	10668.68	9703.95	20372.63	54261	424532	37.55	4.80

Appendix Table 3.2 (contd.): Transfers Relative to Centre's Gross Revenue Receipts and GDP

	Share in central taxes	Total grants	Total transfers	Centre's gross revenue receipts	GDPmp	Transfers as percent of	
	Rs. crore	Rs. crore	Rs. crore	Rs. crore	Rs. crore	CGRR	GDPmp
1989-90	13232.01	8573.45	21805.46	65329	487683	33.38	4.47
1990-91	14535.3	12384.28	26919.58	69531	569624	38.72	4.73
1991-92	17196.63	15327.42	32524.05	83227	654729	39.08	4.97
1992-93	20521.69	17635.92	38157.61	94639	752591	40.32	5.07
1993-94	22239.79	21223.07	43462.86	98024	865805	44.34	5.02
1994-95	24842.57	20193.95	45036.52	116160	1015764	38.77	4.43
1995-96	29285.17	20744.22	50029.39	139269	1191812	35.92	4.20
1996-97	36060.92	23335.75	59396.67	162218	1378616	36.62	4.31
1997-98	43547.51	25163.53	68711.04	177095	1527158	38.80	4.50
1998-99	39144.76	24213.93	63358.69	188586	1751198	33.60	3.62
1999-00	43480.83	31021.86	74502.69	224754	1952035	33.15	3.82
2000-01	51944.44	37430.69	89375.13	244686	2102375	36.53	4.25
2001-02	53398.28	42936.37	96334.65	255011	2281058	37.78	4.22
2002-03	56480.41	42560.23	99040.64	288694	2458084	34.31	4.03
2003-04	67366.16	49977.41	117343.57	332149	2765491	35.33	4.24
2004-05	80158.76	57167.64	137326.40	384851	3126596	35.68	4.39
2005-06	95886.77	77479.79	173366.56	443890	3580344	39.06	4.84
2006-07 RE	121876.99	104548.22	226425.21	544934	4145810	41.55	5.46
2007-08 BE	144250.28	120003.05	264253.33	630426		41.92	

Source (Basic Data): Indian Public Finance Statistics and CSO.

Appendix Table 3.3: Composition of Combined Revenue Receipts

(percent)

		Central gross tax revenue	Net of IR from states	Centre's adjusted revenue receipts	States' own TR	States' NTR	States' revenue receipts	Combined revenue receipts
	1950-51	52.1	9.2	61.3	28.6	10.1	38.7	100.0
	1951-52	56.3	9.2	65.6	25.0	9.5	34.4	100.0
First	1952-53	53.3	7.1	60.4	27.9	11.8	39.6	100.0
	1953-54	49.5	7.3	56.8	29.7	13.5	43.2	100.0
	1954-55	49.9	7.6	57.5	29.0	13.4	42.5	100.0
	1955-56	49.2	9.8	59.0	28.7	12.3	41.0	100.0
	1956-57	50.2	10.0	60.2	28.2	11.6	39.8	100.0
Average (First FC)		**50.4**	**8.4**	**58.8**	**28.7**	**12.5**	**41.2**	**100.0**
Second	1957-58	53.2	9.5	62.7	27.1	10.1	37.3	100.0
	1958-59	50.9	11.1	62.0	28.2	9.8	38.0	100.0
	1959-60	51.4	11.0	62.3	27.3	10.4	37.7	100.0
	1960-61	52.3	10.1	62.4	26.6	11.0	37.6	100.0
	1961-62	54.2	10.9	65.1	25.2	9.7	34.9	100.0
Average (Second FC)		**52.4**	**10.5**	**62.9**	**26.9**	**10.2**	**37.1**	**100.0**
Third	1962-63	54.0	12.3	66.3	24.4	9.3	33.7	100.0
	1963-64	57.1	9.3	66.5	24.2	9.4	33.5	100.0
	1964-65	57.3	9.3	66.6	24.5	8.9	33.4	100.0
	1965-66	57.6	8.9	66.6	24.1	9.4	33.4	100.0
Average (Third FC)		**56.5**	**10.0**	**66.5**	**24.3**	**9.2**	**33.5**	**100.0**
Fourth	1966-67	57.9	9.1	67.0	23.9	9.1	33.0	100.0
	1967-68	54.6	10.2	64.8	25.6	9.6	35.2	100.0
	1968-69	52.6	10.8	63.4	26.2	10.4	36.6	100.0
Average (Fourth FC)		**55.0**	**10.0**	**65.1**	**25.2**	**9.7**	**34.9**	**100.0**
Fifth	1969-70	53.2	10.6	63.8	26.0	10.2	36.2	100.0
	1970-71	57.7	4.9	62.6	27.8	9.6	37.4	100.0
	1971-72	58.6	7.0	65.6	25.7	8.7	34.4	100.0
	1972-73	60.3	5.2	65.5	25.9	8.7	34.5	100.0
	1973-74	59.7	4.6	64.3	27.3	8.3	35.7	100.0
Average (Fifth FC)		**57.9**	**6.5**	**64.4**	**26.5**	**9.1**	**35.6**	**100.0**
Sixth	1974-75	57.5	9.1	66.6	26.4	7.1	33.4	100.0
	1975-76	56.2	10.2	66.5	26.4	7.1	33.5	100.0
	1976-77	54.8	10.5	65.2	26.9	7.8	34.8	100.0
	1977-78	54.4	11.4	65.8	26.9	7.3	34.2	100.0
	1978-79	56.3	9.7	66.1	26.8	7.1	33.9	100.0
Average (Sixth FC)		**55.8**	**10.2**	**66.0**	**26.7**	**7.3**	**34.0**	**100.0**
Seventh	1979-80	56.6	9.3	65.9	27.0	7.1	34.1	100.0
	1980-81	55.8	9.3	65.1	28.2	6.7	34.9	100.0
	1981-82	55.5	9.3	64.8	29.0	6.2	35.2	100.0
	1982-83	53.9	10.4	64.3	29.1	6.6	35.7	100.0
	1983-84	56.1	8.1	64.2	29.3	6.6	35.8	100.0
Average (Seventh FC)		**55.6**	**9.3**	**64.9**	**28.5**	**6.6**	**35.1**	**100.0**

Appendix Table (3.3 contd.): Composition of Combined Revenue Receipts

(percent)

		Central gross tax revenue	Net of IR from states	Centre's adjusted revenue receipts	States' own TR	States' NTR	States' revenue receipts	Combined revenue receipts
Eighth	1984-85	55.0	9.9	65.0	28.9	6.1	35.0	100.0
	1985-86	55.9	9.7	65.6	28.5	5.9	34.4	100.0
	1986-87	55.8	9.9	65.7	28.4	6.0	34.3	100.0
	1987-88	56.5	8.7	65.2	29.0	5.8	34.8	100.0
	1988-89	57.7	7.8	65.4	29.1	5.5	34.6	100.0
Average (Eighth FC)		**56.2**	**9.2**	**65.4**	**28.8**	**5.9**	**34.6**	**100.0**
Ninth	1989-90	56.1	10.1	66.2	28.3	5.5	33.8	100.0
	1990-91	57.6	6.8	64.3	30.1	5.5	35.7	100.0
	1991-92	55.4	7.6	63.0	29.5	7.5	37.0	100.0
	1992-93	55.1	9.0	64.1	29.2	6.7	35.9	100.0
	1993-94	51.9	8.7	60.6	31.7	7.7	39.4	100.0
	1994-95	52.2	7.2	59.3	31.4	9.3	40.7	100.0
Average (Ninth FC)		**54.7**	**8.2**	**62.9**	**30.0**	**7.0**	**37.1**	**100.0**
Tenth	1995-96	53.4	7.2	60.7	30.8	8.6	39.3	100.0
	1996-97	55.4	7.4	62.8	30.5	6.7	37.2	100.0
	1997-98	52.6	8.2	60.8	32.6	6.6	39.2	100.0
	1998-99	52.4	8.6	61.0	32.5	6.5	39.0	100.0
	1999-2000	53.1	8.5	61.6	31.8	6.6	38.4	100.0
Average (Tenth FC)		**53.6**	**8.0**	**61.6**	**31.4**	**7.0**	**38.4**	**100.0**
Eleventh	2000-01	51.4	7.8	59.2	32.2	8.6	40.8	100.0
	2001-02	49.2	7.4	56.6	35.0	8.4	43.4	100.0
	2002-03	49.1	9.6	58.7	33.0	8.3	41.3	100.0
Average (EFC 3 Yrs.)		**49.9**	**8.3**	**58.2**	**33.4**	**8.4**	**41.8**	**100.0**

Source: Indian Public Finance Statistic, various years.

Appendix Table 6.1: States' Share of Central Taxes as Percentage of States Revenue Receipts and State Revenue Receipts as Percentage of GDP

(percent)

	States' Share in Central Taxes as % of States' Revenue Receipts	Share of Central Taxes in Gross Central Tax Revenue	Gross Central Tax Revenue as % of GDPmp	States' Revenue Receipts as % of GDPmp
1950-51	12.661	11.847	4.02	3.758
1951-52	13.000	10.311	4.78	3.787
1952-53	16.693	16.804	4.23	4.257
1953-54	14.918	17.193	3.67	4.227
1954-55	13.536	15.574	4.20	4.832
1955-56	13.240	15.173	4.40	5.039
1956-57	12.550	13.609	4.34	4.704
1957-58	16.249	16.825	5.11	5.293
1558-59	18.113	21.103	4.65	5.414
1959-60	16.497	19.089	5.00	5.780
1960-61	15.832	18.421	5.14	5.982
1961-62	16.320	16.948	5.71	5.934
1962-63	17.653	17.433	6.48	6.400
1963-64	17.543	15.890	7.17	6.499
1964-65	15.594	14.179	6.86	6.233
1965-66	14.802	13.410	7.36	6.665
1966-67	17.227	16.170	7.28	6.829
1967-68	16.865	17.683	6.34	6.644
1968-69	17.460	19.567	6.38	7.153
1969-70	19.676	21.991	6.52	7.285
1970-71	22.051	23.539	6.93	7.400
1971-72	23.056	24.401	7.82	8.277
1972-73	23.130	23.572	8.25	8.410
1973-74	22.681	23.081	7.63	7.767
1974-75	20.398	19.371	8.06	7.655
1975-76	21.395	21.018	9.03	8.875
1976-77	19.440	20.354	9.11	9.534
1977-78	19.123	20.295	8.62	9.145
1978-79	17.776	18.591	9.45	9.884
1979-80	26.083	28.448	9.80	10.691
1980-81	25.214	28.767	9.07	10.343
1981-82	24.417	26.970	9.28	10.248
1982-83	22.920	26.219	9.26	10.595
1983-84	22.894	25.310	9.31	10.297
1984-85	22.034	24.615	9.42	10.519
1985-86	23.480	26.129	10.19	11.341
1986-87	23.552	25.808	10.43	11.429
1987-88	22.762	25.482	10.53	11.783
1988-89	22.335	23.989	10.48	11.252

Appendix Table 6.1 (contd.): States' Share of Central Taxes as Percentage of States Revenue Receipts and State Revenue Receipts as Percentage of GDP

(percent)

	States' Share in Central Taxes as % of States' Revenue Receipts	Share of Central Taxes in Gross Central Tax Revenue	Gross Central Tax Revenue as % of GDPmp	States' Revenue Receipts as % of GDPmp
1989-90	24.814	25.626	10.59	10.934
1990-91	23.163	25.245	10.11	11.017
1991-92	22.059	25.529	10.29	11.907
1992-93	23.564	27.496	9.92	11.572
1993-94	21.811	29.363	8.75	11.777
1994-95	21.022	26.916	9.09	11.634
1995-96	22.225	26.330	9.33	11.056
1996-97	24.596	27.790	9.41	10.635
1997-98	26.428	31.280	9.12	10.790
1998-99	22.704	27.222	8.21	9.845
1999-00	21.622	25.316	8.80	10.302
2000-01	23.420	27.542	8.97	10.550
2001-02	21.488	28.546	8.20	10.894
2002-03	21.430	26.160	8.78	10.722
2003-04	21.802	26.486	9.20	11.173
2004-05	22.270	26.285	9.75	11.512
2005-06	22.055	26.188	10.22	12.129
2006-07 RE	22.713	26.051	11.28	12.943
2007-08 BE	23.539	26.317	11.63	13.002

Source: Indian Public Finance Statistic, various years.