Centre-State Resource Transfer and Regional Growth Inequalities

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C_E_R_T_I_F_I_C_A_T_E

We certify that the dissertation entitled "CENTRE-STATE RESOURCE TRANSFER AND REGIONAL GROWTH INEQUALITIES" submitted by ANNADA PRASAD PANDA in fulfilment of six credits out of total requirements of twenty four credits for the Degree of MASTER OF PHILOSOPHY (M. Phil) of the University is his original work to the best of our knowledge and has not been previously submitted for any degree of this or any other University and therefore be placed before the examiners for evaluation.

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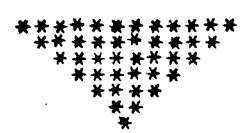

A_C_K_N_O_W_L_E_D_G_E_M_E_N_T

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CHAPTER - I

INTRODUCTION

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INTRODUCTION

1.1 Regional Imbalance and the need for Resource Transfer:

India during the two centuries of British rule, saw the impoverishment of its masses, through growing unemployment, under-unemployment and disguised unemployement. The colonial policy was also at the root of uneven spatial development. The most striking feature of Indian industrial structure was that it was extremely lop sided regionally. Indian industries were concerntrated only in a few regions and cities of the country. Large parts of the country remained under-developed in general and devoid of any industrial base in particular. This unequal regional development led to wide regional disparities in income. Thus, at the dawn of independence, India emerged as a union of a few relatively rich and industrialised states, and many poor states. This was the net result of difference in agro-climatic conditions, resource base and infrastructural development and last but not the least, the colonial policy geared to meet only the needs of British economy.

Unfortunately, the income inequality among the states has tended to widen after independence. The process of uneven spatial development which started during the British rule continued to operate unabated during the post-independence era as well. Though one of the most important objective of our planning process was to achieve a balanced

regional development, the end result has been rather disheartening. It has failed to arrest the increasing income disparity among the different states of India. This is amply demonstrated by Table -1.1. The coefficient of variation, the range and the ratio between the highest and the lowest interms of per-capita income of different states in different years show that regional disparity has been increasing over time. The increase since the sixties is more clear and unmistakable.

Thus all along the process of India's development, variations in the development of different states has been a living problem baffling alike the mind of policy makers, and resource administrators. No wonder, therefore among the most essential objectives of India's five year plans was to achieve a gradual reduction in inter-state disparities.

In terms of conventional growth economics, the level of investment is a major determinant of growth. It is all the more so and all the more difficult for a country like India which emerges from a colonial background with a poor infrastructural base and a very narrow industrial base. Moreover, India's development strategy was essentially aimed at growth of production in a capitalist framework,

Table 1.1

STATEWISE EXPANSION OF PER CAPITA INCOME SINCE 1949-50

(Current prices)

States	1949-50	1960-61	1970-71	1980-81	1984-85
1. Andhra Pradesh	229	275	585	1358	1996
2. Bihar	200	215	402	929	1418
3. Gujarat	*	362	829	1944	2901
4. Haryana	++	327	877	2331	3259
5. Karnataka	186	296	641	1453	2189
6. Kerala	234	259	594	1421	2076
7. M.P.	255	252	484	1149	1693
8. Maharastra	273*	409	783	2232	3203
9. Orissa	188	217	478	1101	1534
10. Punjab	344++	366	1070	2760	4103
11. Rajasthan	173	284	651	1222	1990
12. Tamil Nadu	229	334	581	1336	2128
13. U.P.	262	252	486	1272	1782
14. West Bengal	353	390	722	1573	2594
Coefficient of variation	0.2232	0.1999	0.2703	0.3271	0.3156
Range	0.7407	0.6409	1.0031	1.1609	1.1437
Ratio of highest to lowest	2.04	1.90	2.66	2.97	2.89

Note = * Gujarat and Maharastra
++ Haryana and Punjab

Source = Prasad, Pradhan H., " Roots of Uneven Regional Growth in India", Economic and Political Weekly, Bombay, Aug. 13, 1988, p. 1690.

the role of investment assumes crucial significance. Still further, since private investment would be likely to be higher in rich states public investment should be higher in the poor one's to close the output and income gaps. Low levels of investment in poor states implies lower growth rates. So, transfer of resources to poor states inter alia through central govt. intervention is accepted as an important instrument of public policy, which can boost the levels of investment in the poorer states. Under our constitution, central govt has typically a much higher access to many elastic sources of revenue like high yielding elastic taxes, a hike in administered prices, deficit financing and so on, but the state governments have very limited scope in this regard. This centralist bias has become stronger over the years. Some economists are of the view that this centralised bias can make transfer of resources from the Centre to States more progressive, while others are of the view that it is the cause of slow growth and unjust distribution of it.

Mitra, the most outspoken left economist is of the view that the centralised fiscal arrangement is a major reason of slow growth and the unjust distribution of it. The consequence is a rising turbulence at different levels of polity. According to him, the anxiety to preserve the unitary political form works havoc with its unwholesome economic content. A near zero rate of per capita national

income growth and progressively aggravating income inequality may be too high a price to pay for certain political goals such as the preservation of unitary administrative structure.[1]

In fact Centre - State financial relations are currently very much a topic of debate in official, political and academic circles. In fact, the appointment of Sarkaria Commission reflects the concern of the political authorities at the Centre. Rao lists eight irritant which has been the cause of tension between the Centre and the States. Many of the irritants mentioned by him belong to the arena of finance and planning.[2] And infact much of the problems of the centre state relations belong to the sphere of financial relations.

Pradhan Prasad also holds a similar view. He shares Mitra's concern when he ascribes the ills at the state level, inter alia , to the pattern of resource transfer from the Centre to the states. He also opines that despite the centralised fiscal arrangements the centre

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1 Mitra, Ashok, " Will Growth and Centralised Fiscal arrangement do"?, (ed.) Gulati, I.S., Centre-State Budgetary Transfer, Oxford University Press, 1987, pp. 23-40.

2 Quoted in, " INTRODUCTION", (ed.), Sinha, R.K., Centre-State Financial Relations in India, Deep and Deep Publications, New Delhi, 1986, p.7.

has failed to do precious little to arrest the income disparities among regions.[3]

The views of other economists also point to the fact that over the years, the centralised bias of our fiscal system has strengthened itself. In the words of Gulati and George, "There can be no two opinion that since independence the access of central government to the various sources of finance, tax and non-tax including all borrowings has increased enormously leaving the states far behind."[4]

By now, the economists are almost unanimous in their view that fiscal arrangements in our country has a centralist bias. This has its roots in historical factors. The partition of the country was instrumental in strengthening the urge for a strong centre. But, more recent instances like pre-empting of corporation tax for the centre, has accentuated this tendency.

Table 1.2, also best illustrates the point. Taking the totality of centre's budgetary resources (tax, non-tax, capital) the share of the states has come down from over

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3. Prasad, Pradhan. H., Roots of Uneven Regional Growth in India ", Economic and Political Weekly, Bombay, Aug. 13, 1988, PP. 1689-1692.

4. Gulati, I.S. and George, K.K, " Inter-state Re-distribution through the bueget", (ed.), Gulati, I.S., Centre-State Budgetary Transfers, Oxford University Press, 1987, P. 267.

40 per cent to 33 per cent between the Ist and VIth plan periods. There has thus been a declining trend in the share of the states in Centre's total budgetary resources.

Table-1.2

RESOURCES TRANSFERRED TO STATES - PLAN-WISE

PERIOD	(Rs. Crores) Agg.amount Raised by Centre	(Rs. Crores) Agg. transfer from Centre to the States	Amount transferred a % of the resources raised at Centre
1951-56	3412	1431	42%
1956-61	8080	2868	36%
1961-66	17654	5600	32%
1966-69	16714	5347	32%
1969-74	41380	15101	36%
1974-79	82422	25578	31%
1979-83	-	-	33%

Source : Gulati, I.S. (ed.) "Centre - State Budgetary Transfer", OXFORD University Press, 1987. page 18.

The amount transferred to States as a percentage of the resources raised at central has declined from around 40 per cent to 31 per cent. In a broad sense, this reflects

a progressive erosion in the access of state govefnments to Central govermment revenue.

But, the question arises whether this centralised bias has helped the Centre to make transfer in a more and more progressive manner ? Then whether the inadequacies of transfer is at the root of slow growth rate of poor states. Economists are divided on this issue. But, the moot point still remains that the necessity as well as the scope for the centre to effect some redistribution in favour of the poorer of the states has increased considerably over the years. Common ligic prompts us to say that the interest of the poor states must be protected first. In fact the mechanism of reSource transfer has been devised for this purpose.

But, the states are satisfied neither with the quantum of resources transferred nor their distribution, inter-se, nor the controls that go with the transfer.[5] There is a substantial body of opinion which maintains that a lesser concentration of economic power in the hands of the state would have yielded a higher rate of growth.[6] Hemalata Rao is of the opinion that in order

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5 Venkataraman, K., 'States Finances in India', George Allen and Unwin Ltd, London, 1968, Chapter-V, P.83.

6 Mitra, Ashok, op.cit, pp. 24-25.

to check the regressive feature of the federal fiscal transfer a thorough overhauling of the Federal devolution scheme is needed.[7]

Gulati is of the view that statutory transfer awarded by the finance commission to plug the non-plan gap of the states and the discretionary assistance decided upon by planning commission in consultation with union ministries without reference to the national development council are more regressive than the plan assistance given to the states in consultation with NDC. He opines that Plan transfers have shown an increasing trend towards reduced regressivity, if not progressivity in terms of per capita transfer to states.[8]

In the words of Lakadwala, the per capita plan assistance is progressively distributed and as percentage of plan assistance helps poorer states considerably more. But, the dynamic role it can play is rather limited. In the absence of simultaneous efforts at resource mobilisation at the state level and economising non-plan expenditure, plan outlay per capita is likely to lag behind more in

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7. Rao, Hemalata, " Federal Fiscal Transfer: Objective and Criteria", (ed.), Sinha, R.K., Centre-State Financial Relations in India, Deep and Deep Publications, New Delhi, 1986,p.45.

8 Gulati, I.S., (ed.), Centre-State Budgetary Transfers, Oxford Uni. Press,1987, p. 15.

poorer states than in the better-off states. This implies that plan outlay which is a major determinant of growth is likely to be less in rich states in per capita terms. So Lakadwala feels that plan assistance has been progressive and it is not the only determinant of growth.[9]

This view is somewhat similar to Chadha's view. In his rejoinder to Prasad's article, he opined that inadequate resource transfer from Centre cannot be the only reason of slow growth in poorer states.[10] Prasad had blamed the inadequate central transfer to be the sole cause of slow growth rate of the poorer states.[11] He criticises the methodology adopted by Prasad in his analysis.

Some of the Central transfers have a loan component particularly the plan assistance and discretionary assistance. According to Thimmaiah the burden of central loans has been more on poorer states than on richer states. He is of

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9 Lakadwala, D.T., " Plan Finances in a federal economy" (ed), Sinha, R.K., Centre-State Financial Relations in India , Deep and Deep Publications, New Delhi, 1986, pp. 105-106.

10 Chadha, G.K., "Roots of Uneven Regional Growth in India", Review Article, Economic and Political Weekly, Bombay, Dec 24-31, 1988, p. 2764.

11 Prasad, Pradhan, H., op.cit., p. 1689.

the opinion that the large size of plans make the poorer states eternally dependent on Centre and they are thus led into a internal debt trap, as they cannot repay them in the near future.[12] Going by this reasoning we can conclude that larger size of the plan and huge central assistance need not be pleaded for the poor states. George is of the view that the successive finance commissions have done more justice to poorer states than their earlier ones.[13] Nevertheless, he maintains that the role of the Finance Commission in reducing inter-state disparities has been at best only marginal.[14]

George and Gulati are of the opinion that in the case of statutory transfer, the redistributive change over time is biased in favour of middle income states. In the case of plan transfer, it is the poor-income states, and in the case of discretionary transfer it is the high-income states.[15]

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12 Thimmaih, G., "Central Loans to the States: A case of financial imperialism", (ed.) Sinha, R.K., Centre-State Financial Relations in India, Deep and Deep Publications, New Delhi, 1986, p.111.

13 George, K.K., " Statutory Transfers and Inter-state Disparities", (ed.), Sinha R.K., Centre-State Financial Relations in India, Deep and Deep Publications, New Delhi, 1986, p. 267.

14 Ibid., P. 304.

15 Gulati, I.S., and George, K.K., " Inter-State Redistribution Through the Budget", (ed.), Gulati, I.S, Centre-State Budgetary Transfer, Oxford University Press, 1987, P. 279.

From the above discussions, the main points that emerge are : (1) There is no difference of opinion about the centralised bias of our fiscal arrangements (2) There are divergint views about the nature of progressiveness of various types of transfers (3) The economists differ on the nature and extent of impact of various types of transfers on the growth rate of states (4) Many economists call for an overhauling in the entire gamut of Centre-State financial relationship as a remedial measure.

Our analysis is limited to analyse whether transfers within the existing frameworkwere progressive or not in a particular time period, & what was the impact of these transfers on the growth rate of the states. Of course it is borne in mind that it is sum total of private and public investment which is the ultimate determinant of growth and resource transfer from the Centre forms only part of the public investment. We recognise the fact that progressive resource transfer duly supplemented with better resource mobilisation effort at the state level can make the growth of poorer states higher. So, the central transfers cannot be looked upon as the sole explanation for growth performance at the state level.

1.2 Methodology:

Our aim is two-fold. Firstly, we propose to study each type of trahsfer, especially from the point of view of its progressivity ? We have used percentage deviation method from the average to find out the relative position of different states and different categories of states. From those figures we are able to say whether the different types of transfers have been progressive or not. We have also computed rank correlation coefficients between various types of transfers with the per capita state domestic product, to find out their progressiveness. Also, we work out per capita transfer of each type to each state to make the data comparable across the states. So, the above methods are used to find out the progressiveness of per capita transfer of each type.

Our analysis covers the period 1969-85. We have taken the average per capita SDP of four years in between i.e., 1975-76 to 1978-79 to club the states into three categories, i) High income state ii) Mid-Income States iii) low income states. Each category consists of five states. Punjab, Haryana, Gujarat, Haryana West Bengal fall in the first category. Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, and Rajasthan in the second.

The low income states are Bihar, Orissa, M.P. U.P and Assam. The per capita transfer which are arrived at by dividing the total transfers by total population are then summed up in each category of states. They are then divided by 5 to find out the simple average per capita transer to each category of states. So, for each type of transfer, we have three per capita figures corresponding to the three categories of states. In other words, the per capita transfer to 5 states of each of the three categories are summed up and divided by 5 to arrive at 3 figures , one each corresponding to three different categories of states. This would make our task simpler in further analysing progressiveness of each type of transfer.

Then we would find out the percentage deviation figures from the all-states average for different states and different categories of states by each transfer type. Then they are analysed on plan to plan basis. The time period covered in our study coincides with the IV, Vth and VIth plans. The year to year data is summed up to find out different types of transfers and the total transfer during a particular plan period. We have also found out the rank correlation of various types of transfer in per-capita terms with

per capita SDP to find out progressiveness on a plan to plan basis.

A negative rank correlation coefficient would imply that higher per capita incomes are associated with lower per capita transfers and vice-versa. Thus a negativerank correlation coefficient is indicative of progressiveness in our analysis. The rank correlation, coefficient lies between -1 and +1. The closer it is to the two values the higher is the covariability between the two variables.

The formula for rank correlation coefficient is given by

$$r_k = 1 - \frac{6 \ \Sigma D^2}{N^3 - N}$$

where r_k denotes rank coefficient of correlation and D refers to the difference of ranks between paired items and N to the number of variables. We have also tested their significance by the t test. The formula used for its calculation is

$$t = \frac{r_k \sqrt{N-2}}{\sqrt{1 - r_k^2}}$$

where r_k = rank correlation coefficient

n = number of variables.

As is wellknown, the transfers are of four types: statutory transfers, plan assistance, assistance for centrally sponsored and central plan schemes and direct investment by central enterprises. From the point of view of state economy and growth prospects the last type of transfer is of an indirect nature, as the investment is not routed through the state governments. As their figures are available in gross blocks, we thought it advisable not to include them for some aspects of our analysis, while working out the total quantum of resource transfers from centre to the states.

Then we have also used the graphs of the three categories of states by each type of transfer. From these graphs, we can visually notionalize the trend of progressiveness if any. We have also analysed the ratios of per capita transfers by each type to high income and low income states on the one hand and the ratio of high income states and middle income states on the other. A value of less than one would indicate progressiveness. Smaller the value of the ratio the higher is the progressiveness. This is done on a year to year basis.

At the second level of our analysis, we discuss the

impact of various types of transfers on the growth of per capita state domestic product. In any modern system of production, investment plays a pivotal role in promoting economic development and is thus a major determinant of growth. The idea behind various, types of central transfers is to boost the expenditure level of the states and through it, the state domestic product. So, expenditure is the means and growth rate of SDP the end. So, we have shown each type of transfer as a percentage of total expenditure and then found out its impact on the per capita SDP growth rate (current prices) through regression analysis. In the regression equation the per capita growth of SDP is the dependent variable and transfers as a percentage of the total expenditure are the explanatory variables. Since the transfers are in current prices we have taken the growth of per capita SDP in current prices too. The fourth variable is in per capita terms as it is not related to the total expenditure of the state.

The regression equation is of the form

$$Y_t = a + b_1 S_t^{\vee} + b_2 P_{t-1}^{-} + b_3 C_{t-1}^{\vee} + b_4 I_t^{\vee}$$

where Y_t is growth of per capita SDP;

$$S = \frac{\text{Statutory transfer}}{\text{Total Expenditure}} \times 100$$

$$P = \frac{\text{Plan Transfer}}{\text{Total Expenditure}} \times 100$$

$$C = \frac{\text{Central Sponsored Project + Central Projects}}{\text{Total Expenditure}} \times 100$$

$$I = \frac{\text{Investment by Central Enterprises}}{\text{Total Population}}$$

We have taken the actual transfers and not the proposed or, agreed ones. So, there is no reason why these transfers which are given on a year to year basis will not show results at the end of the year. Accordingly, we thought it worthwhile to take a time lag of one year. The only exception to this general rule is the statutory transfers.

Statutory transfers are given to meet the non-plan expenditure of the states. As argued in a subsequent chapter, as much as 70 per cent of the statutory transfer is used for maintenance of assets created in the previous period.[16] And out of the rest, a major chunk is used for interest payment on loans raised in the previous period(s). So, the non-plan expenditure which is partly met from the statutory transfers is a function of the plan

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16 Guhan, S., " Devolution Criteria from Gamble to Policy", (ed.), Gulati, I.S., Centre-State Budgetary Transfers, Oxford University, Press, 1987, P. 287.

expenditure of the previous period.

$$S_t = f(P_{t-1})$$

Since P_{t-1} directly affects Y_t,

we can link S_t with Y_t

So,

$$\gamma_t = \frac{Y_t - Y_{t-1}}{Y_{t-1}} \times 100 = f(St, P_{t-1}, C_{t-1} \quad I_t)$$

where Y_t = Per capita SDP in year t

Y_{t-1} = Per capita SDP in year t -1

γ_t = Growth rate of per capita SDP.

Since, we have a year to year data for 15 years and 15 states we would have 15 equations each of identical nature from both cross section and time series analysis. While the cross section analysis gives us 15 equations for 15 years, the time series analysis gives us 15 equation for 15 states.

For example the cross-section equations are

$$\gamma_{70-71} = a + b_1 S_{70-71} + b_2 P_{69-70} + b_3 C_{69-70} + b_4 I_{70}$$

I_{70} refers to per capita investment till 31.3.1970 in gross blocks.

Similarly the time series equation is given by -

$$\hat{y}_{state} = a + b_1 S + b_2 P + b_3 C + b_4 I$$

The variables P, C and I are lagged variables. In other words the same lags are used in case of both time series and cross-section analysis.

We have taken investment by central enterprises in gross-blocks, because they are generally fixed investments. These investments can give a fillip to the economy of that area for long periods. They refer to the value of property (Gross Block) held by public enterprises That most of the public enterprises in India are not working efficiently is however a different matter. So, we have taken comulative investment and not the incrementals of investment taking place on year to year basis.

We have included statutory transfers as one of the explanatory variables, because in our opinion non-plan expenditure is also responsible for sustaining growth although not quite the same way as plan expenditure does. Inasmuch maintenance of assets created earlier out of plan outlays is also vital for sustaining growth, a disregard for non-plan expenditure, which in the present study follows out of statutory transfers, would tend to

operate as a drag on growth in states. In his study Pradhan Prasad has attributed the declining significance of plan expenditure on the growth process during VIth plan, to the total disregard to non-plan expenditure. He opines that non-plan expenditure which is responsible for the maintenance of public productive assets is just as important as creation of new assets. If existing productive assets remain unused, while new ones are added, the net result may be no addition to the total production.[17]

We are also interested to know the combined impact of various types of transfer on the growth rate, since investment by central enterprises are given in gross blocks they can not be added to the other types of resource transfer. Secondly they are of an indirect nature. So, while studying the combined impact of different types of resource transfer we are taking into account only the direct resource transfers. Since while studying the combined impact of total direct resource transfer on the growth rate, we have two variables a simple regression analysis would suffice.

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17 Prasad, Pradhan. H., op.cit., P. 1691.

The equation is as follows:

$$y_t = b_o + b_5 \times 5$$

where y_t is the some as it is in case of the multiple regression analysis

$$X_5 = \frac{P_t + S_t + C_t}{\text{Total Expenditure}_t} \times 100$$

where

P_t = Plan Transfer for year t

S_t = Statutory Transfer for year t

C_t = Schematic Transfer for year t

Schematic Transfer = (Central Sponsored Projects + Central Projects)

Unlike the multiple regression we have neither the time series analysis nor the lagged variables. The total direct resource transfer during a particular year is linked to that year's growth rate and hence we have not taken any time lag. The total direct resource transfer is expressed as a proportion of total expenditure.

While doing the multiple regression analysis we have used the stepwise regression method, where explanatory variables are entered into the equation sequentially and

to stop at a point where $\bar{R}^2$ (coefficient of determination adjusted for degrees of freedom or, adjusted R^2) stops increasing. R^2 or, the coefficient of determination is the proportion of the variation in Y_t explained by the variables jointly. R^2 if adjusted for the degrees of freedom is known as adjusted R^2. The coefficients give us the change in the dependent variable for a unit change in explanatory variable.

$$R^2 = 1 - \frac{\Sigma e_i^2}{\Sigma y_i^2} = \frac{ESS}{TSS} = \frac{\text{Explained Sum of Squares}}{\text{Total sum of squares}}$$

where Σe_i^2 = Residual Sum of Squares

Σy_i^2 = Total sum of squares.

and $$\bar{R}^2 = 1 - \frac{\Sigma e_i^2}{n-k} \Big/ \frac{\Sigma y_i^2}{n-1}$$

K = no. of parameters of the model including intercept

n = Total number of observations

F test has been applied to test the significance of R^2.

$$F = \frac{R^2 / K-1}{(1-R^2) / n-k}$$

t test has been applied to test the significance of the regression coefficients

$$t = \frac{\hat{\beta} - \beta}{\text{Standard Error of } \beta}$$

$\hat{\beta}$ = estimated value of β

β = regression coefficient

1.3 Data Base:

1) The per capita net state domestic product (at current prices) are collected from the SDP estimates prepared by the Central Statistical Organisation.

2) Statutory transfers awarded by the Finance Commission are collected from various issues of the RBI Bulletin. State Finances in India.

3) The plan transfers and transfers for central projects and centrally sponsored projects have both grant as well as loan components. They are then summed up to arrive at the total assistance for state plan figures and transfers for central and centrally sponsored projects. The figures for grant component and loan component are collected from State Finances in India - (RBI, Bulletin various issues). The addition of the two gives us the assistance figures in gross terms.

4) The data for investment in central and enterprises are collected in gross blocks from Bureau of Public Enterprises; Public Enterprises Survey various issues.

5) The total expenditure figures of states are collected from the RBI, Bulletins. (State Finances in India, various issues). The total expenditure figures are arrived at by summing up expenditure in revenue account and current account.

6) The population figures are collected from Census publications and from RBI's annual Publication Currency and Finance.

1.4 Limitation:

1) We have taken the gross figures of various types of transfers. This is not the best to go by. Since a loan always entails a burden, e.g. the recipient state has to pay it back with interest, in net terms, the receipts may be grossly over stated at least for some years. If so, this would mean a reverse flow of resources. Secondly they are gross in the sense that we do not take into account the contribution of each state to the Centre's resources. Of course netting in this sense is far more difficult than netting in the Ist sense. So, in this sense even statutory transfers which are outright grants + tax transfer and do not entail repayment of any kind has to be netted. Though theoretically this may seem important, yet in practical terms, it may be extremely difficult to do so. In any case, we do not propose to get into the problem of netting in as far as the present study is concerned.

2) We have not taken transfers by Financial Institutions. In a broad sense, such transfers are guided by market

forces and are arguably regressive in nature. Their non-inclusion is yet another limitation of the study.

3) The investment by central enterprises is given in gross blocks. So, this can not be added to the other three types of resource transfer when we are finding out the total resource transfer to states. This is also a limitation of its kind.

4) The actual plan period do not fully correspond with the three time periods of our analysis in Chapter -III. We have the IVth and VIth plan fully coinciding with our first and third periods. The Vth plan in India, however, ran from 1974 to 1979, whereas we have taken 1974-80 as our 2nd period to represent Vth plan period. We have included the Annual Plan of 1979-80 to our 2nd period. In any case, in total terms, such an adjustment would not cause any major distortion in our planwise discussion.

1.5 Scheme of Study:

In Chapter one, we have discussed the centralised bias of fiscal arrangements in India and the debate whether this bias has rendered resource transfer to states progressive or not. Secondly we have also discussed the views of economists about the impact of these various

types of transfers to the states on the per capita state domestic product. We have also discussed the extent of regional inequality and the relative weights of different types of transfers in total budgetary transfers.

It also includes the methodology, the data base and the limitations of the exercise.

In Chapter two, we discuss in detail the working of the various agencies that effect transfers to states. The actual mechanism of resource transfer from centre to states is also discussed in this chapter. Next, in chapter three, we analyse various types of transfers in per-capita terms and try to assess the degree of progressiveness or otherwise in respect of each transfer.

Chapter four computes a number of regression equations with a view to seeing the impact of various types of transfers or some combinations thereof on the growth rate of states.

Finally, chapter five discusses the findings of the previous two chapters and gives some concluding remarks about whether the transfers have been progressive and its impact on the growth rate.

CHAPTER - II

MECHANISM OF RESOURCE TRANSFER

CHAPTER - II

MECHANISM OF RESOURCE TRANSFER

In every federation, the functions should match the resources available to different layers of the govt at the Central and State levels, because command over resources is an essential pre-requisite of governance. For reasons of efficiency and equity, a transfer of resources must take place from the higher to the lower layers of the government. If this is not satisfied then it would lead to discontentment, threatening the very survival of federal polity. In India, there are three mechanisms through which transfers take place from centre to the states. The finance commission and the planning commission are the agencies which are called upon to evolve procedures for distributing national resources between the states as also amongst the states in the light of the twin considerations of equity and need. There is a third channel, that is the union ministries. Transfers through Central ministries are known as discretionary transfers. This is decided upon by the Union Ministries in consultation with the Planning Commission though unlike plan assistance it does not require the approval of the national development council. An idea about the relative weights of these difference types of transfers in the total budgetary transfer is given below (in Table 2.1).

It is evident that the respective weights of the various

Table 2.1

RELATIVE WEIGHTS OF VARIOUS TYPES OF BUDGETARY TRANSFER -PLAN - WISE

PERIOD	STATUTORY TRANSFER	PLAN TRANSFER	DISCRETIONARY TRANSFER	TOTAL
1951-56	31.2	24.5	44.3	100
1956-61	32.0	36.9	31.1	100
1961-66	28.4	44.9	26.7	100
1966-69	33.3	33.1	33.6	100
1969-74	35.9	23.4	40.7	100
1974-79	43.0	30.5	26.0	100
1979-84	41.0	29.3	29.7	100

Source : Gulati, I.S. (ed.) Centre State Budgetary Transfer, Oxford University Press, 1987, P. 17.

types of Central budgetary transfers to the state has undergone quite big changes.

In the words of Prof. Guhan this is an indication of the Indian constitution particularly in the nature of evolving workable financial reations between the centre and the federating states. From this it does not follow that the mechanism has been working perfectly satisfactorily. For exam;le, it has been felt time and again that in the

actual working of the two commissions(viz. Finance Commission and Planning Commission), there is a lack of clarity and co-ordination.[18] It is in the light of this argument that the demand for a national resource commission has gained currency. It is being increasingly argued that somewhere we should be able to study resource transfer in its totality.

To put the record straight, budgetary transfer tell only part of the story. So any study that confines itself to only budgetary transfer by these two commissions has serious limitations. But, then there are some indirect transfers also. For example investment in non-departmental undertakings is expected to go a long way in giving a boost to the economy of backward areas, through a chain of linkage effects. In fact, one of the objectives of planned development was to reduce regional disparities through setting up public sector units in backward regions. Similarly, transfers through centrally sponsored projects and central projects, which mainly constitute discretionary transfers by the union government, have their own role to play.

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18 Guhan, S, op.cit., p. 283.

As set out in Chapter-I, our analysis is rather limited as far as it does not seek to analyse the impact of flow of resources through financial institutions. The flow of such resources is generally guided by market forces even in the face of state guidelines for regional operational policies, particularly for boosting the economy of depressed areas; some element of regional regressiveness is built in their operational core. Nevertheless, in spite of the difference that such financial institutions cause to the total resource position of the respective regions, we believe that their non-inclusion in our analysis should not cause much distortion in our analysis of resource sharing between the centre and the states.

In what follows, we seek to analyse in greater detail the mechanism of flow through various agencies.

2.1 The Finance Commission:

The Finance Commission occupies a pivotal position in the Constitutional scheme regarding Centre-State financial relations in India. The President of India appoints the Finance Commission every five years (or earlier)

under Article 280 of the constitution. The Union Govt has to act on the recommendations of the Finance Commission in the matter of distribution of grants under Article 275 of the Constitution .

The Constitution lends much freedom and flexibility to the Finance Commission and its operations. The principles governing the distribution of grants-in-aid including capital grants under article 275 were left entirely to be determined by the Finance Commission. The criteria for distribution of shared taxes among states under Articles 269 and 270 (mandatory) and 272 (permissively) were to be determined solely by the Finance Commission. During the last few years a progressive erosion is reported to have occurred in the role of the Finance Commission. In the words of George[19], "The Finance Commission today is a mere shadow of its original constitutional self."

The advent of centralised national planning and the activities of the planning commission which is a permanent body, have contributed to the decline in the role of finance commission. It is well understood that non-plan revenue budget is a function of the plan expenditure of the

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19 George, K.K., op.cit., P. 264.

previous period and the finance commissions consider only the non-plan revenue component of the states.

Mr. Chanda, Chairman of the Third Finance Commission of India laments over the limited role of the finance commission. In his words, "the role of the commission is at best that of an agency to review the forecasts of revenue and expenditure submitted by the states and the acceptance of the revenue element of the plan as indicated by the planning commission for determinig the quantum of devolution based on amounts of assistance for each state already settled by the planning commission to be made under different heads on the basis of certain principles to be prescribed."[20]

The above type of extreme view seems a bit too far fetched. It cannot be denied that in spite of the many limitations under which the finance commissions have had to operate their awards have been able to do some justice to the poorer states. The progressivity in the operation of the finance commission awards has indeed been acknowledged on a wide scale.

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20 Chanda, A.K., " Financial Aspects of Union State Relations in India", (ed.), Kashyap, S.C., Union State Relations in India, Institute of Constitutional and Parliamentary Studies, New Delhi, 1969, pp. 143-49.

Under article 280 of the constitution, Finance Commissions have the responsibility primarily to recommend on (a) the distribution between the Union and the states of the net proceeds of taxes which are to be, or may be, divided between them, (b) the allocation between the states of the respective shares of such proceeds and (c) the principles which should govern grants-in-aid to the states. The taxes shared are taxes on income other than agricultural income (Art. 270), those which may be shared are Union duties of excise (Art. 272). States which are in need of assistance are eligible for grants-in-aid under article 275 of the constitution.

In the interests of further strengthening of state finances, the Finance Commissions also make recommendations on other matters referred to them by the Union Govt. (Art. 280(3) (c)). Such other matters included in their terms of reference have been related to the sharing of additional duties of excise in lieu of Sales tax, estate duty in respect of property other than agricultural land, grants in lieu of the tax on railway passenger fares, These are basically tax-rental arrangements.

The Finance Commissions standardise projections made by state governments by using technical judgements in regard to rates of growth for revenues and expenditures,

normative judgements on rates of return that the states could reasonably be expected to earn from investments such as on power, irrigation, road transport undertakings and industrial ventures and in providing for expenditures to upgrade standards of administration in such matters as police, jails and so on and, where necessary, for upgrading emoluments of employees. In this manner they assess the non-plan revenue gap of the states.

It would, however, be appropriate to point out that much of the so called non-plan expenditure goes towards the maintenance of services and facilities progressively created in the earlier plan periods. This naturally swells the current account expenditure of the states.

As outlined earlier in the methodology portion of Chapter-I, Prof. Guhan is of the view that as much as 70% of the total non-plan revenue expenditure is incurred on maintenance of assets created during the previous plan period. Another important component of non-plan revenue expenditure consists of interest which is a function of debt incurred for financing development expenditures under the plan. So, non-plan expenditure is essentially a lagged function of plan expenditure, the magnitude of lag

varying from one type of non-plan expenditure to the other. While studying resource flow and regional inequality, we are more concerned about horizontal rather than vertical fiscal balance. Vertical fiscal balance has been defined as a situation in which govt at each level can command a flexible source of tax revenue. On the other hand horizontal fiscal balance implies some form of revenue sharing arrangements or equalization grants to remove inequality, at a particular layer of govt among the federating units.

About the centre-state sharing of tax resources, historically, criteria have differed between income tax and union excise duty as also between different finance commissions. The first seven finance commissions have used population and state's contribution to the tax proceeds as the criteria in the case of income tax. In the case of Union excise duties the first six commissions determined 75% of the taxes on the basis of population alone. For the rest, specific characteristics of backwardness had been used to distribute the taxes.

The seventh finance commission distributed only 25 per cent on the basis of population, 25 per cent on the basis of inverse of the per-capita state domestic product multiplied by population, 25 per cent on the basis of

poverty and 25 per cent on the basis of distance from the highest per-capita income state, multiplied by the population of the state.

Though our analysis covers the period 1969-85 i.e. the fifth, sixth and the seventh commission awards, the following table (Table 2.2) would best illustrate the different criteria used by all the finance commissions. It is fairly obvious that all along population has been a uniform scaling factor. In this context, it needs to be noted that it is a distributive and not redistributive yardstick. But, the contribution criteria adopted by various commission benefits the rich states more. Other indicators of backwardness are redistributive unlike the above two criterias.

In this context it would not be entirely irrelevant to mention about the vertical tax - sharing aspect of the Finance Commissions. The extent of taxes shared with the states has increased over time from 55 to 85 per cent in the case of income taxes and from 20 to 40 per cent in the case of excise duties. In the 8th finance commission, the share of states has risen marginally to 45 per cent in the case of union excise duties.

Table - 2.2

CRITERIA FOR TAX-SHARING USED BY VARIOUS FINANCE COMMISSIONS

Finance Commission (Award period)	INCOME				EXCISE		
					Agg. Indicators		
	Population	Contribution	Pop.	Specific indicators	Inverse	Distance	Poverty
First (1952-57)	80	20	100	-	-	-	-
Second(1957-62)	90	10	90	10	-	-	-
Third (1962-66)	80	20	-[2]	-	-	-	-
Fourth(1966-69)	80	20	80	20	-	-	-
Fifth (1969-74)	90	10	80	20	-	-	-
Sixth (1974-79)	90	10	75	-	-	25	-
Seventh (1979-84)	90	10	25	-	25	25[3]	25
Eighth (1984-89)[4]		10	25	-	25	50	-

Notes = 1) Inverse and distance are with reference to per capita SDP
2) The third commission did not specify its exact formula beyond saying that 'population was the major factor'
3) The revenue equalisation formula was in effect the distance criterion.
4) The formula for excise-sharing was also used for 90 per cent of income tax.

Source = Guhan, S., "Devolution Criteria of Finance and Planning Commissions: From Gamble to Policy", (ed.),
Gulati, I.S., Centre-State Budgetary Transfers, Oxford University Press, 1987, p. 290.

Article 275 grants have been used as a residuary instrument to fill the gap remaining after taking into account tax-sharing under Articles 270 and 272. But, the proportion of grants in over all devolution has sharply decreased. This fact is clearly illustrated by Table 2.3.

Table 2.3

TAX-SHARING AND ARTICLE 275 GAP GRANTS UNDER DIFFERENT FINANCE COMMISSIONS

(Rs. Crores)

Finance Commission award period.	Tax sharing	Art.275 Gap Grants	Total Devolution	Proportion of Gap Grant in total Devolution
First (1952-57)	366	27	393	6.9
Second (1957-62)	586	185	771	24.0
Third (1962-66)	818	252	1070	23.6
Fourth (1966-69)	1135	423	1558	27.2
Fifth (1969-74)	3988	713	4701	15.2
Sixth (1974-79)	6979	2683	9662	27.8
Seventh(1979-84)	18821	1627	20448	8.0
Eighth (1984-89)	31166	2200	33366	6.6

Source = Guhan, S., " Devolution Criteria from gamble to policy", (ed.), Gulati, I.S., Centre-State Budgetary Transfers, Oxford University Press, 1987, p.292.

2.2 Plan transfer:

While the Finance Commission direct their transfer to cover the gap on the non-plan revenue account of the

states, the central assistance for plans goes towards meeting incremental developmental expenditure in the form of loans and grants.

The Planning Commission proceeds from where the finance commission ends. It draws mostly on the Finance Commissions calculations regarding state revenues, non-plan expenditure surpluses for plan etc, but follows a different procedure compared with the Finance Commission.[21] Unlike the Finance Commission awards the Plan and its financing are discussed at the National Development Council meeting. In the words of Prof. Lakadwala, (p.71,72) " It is the result of a consensus arrived at the meeting as well as at the discussions that have preceded between the Planning Commission on the one side and Central Ministries and State Govts on the other".[22]

The Commission ensures a consistency between sectoral plan outlay required for achieving various production targets in the public sector and other objectives and the total resources of the Centre and States available for

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21 Lakadwala, D.T., "Plan Finance in a federal economy", (ed.), Sinha, R.K., Centre State Financial Relations in India, Deep and Deep Publications, New Delhi, 1986, p. 71.

22 Ibid., pp. 71-72.

the plan. Depending on the division of functions the sectoral outlays are then distributed between the Union and the States.

The states receipts net of disbursements (which must be agreed to by the states) and the surpluses on non-plan revenue account generally fall short of state plan outlays. The deficit is then made good by Central Plan assistance. This is equal to (1) the surplus with the centre by the award of Finance Commission +(2) other receipts as worked out by the Planning Commission -(3)Central Plan Expenditure. Any increase in non-plan expenditure or, a decline in receipts beyond those anticipated by the two commissions is met through additional resource mobilisation.

Distribution of Central plan assistance among the states is expected to be guided by the objectives of growth with equity including employment and regional equity. What has been the actual outcome of the same still remains a debatable issue, Opinions differ.

The concept of equity refers to fairness or, social justice, whereas efficiency refers to maximizing output from minimum resources or, minimizing cost for a given output level. The concept of equity in fiscal federalism has been interpreted from one extreme to the other. At

one extreme it can mean equal absolute payments to each federating unit and at other federal payments are made exclusive to the poor states and the resources raised in rich states. Equal per-capita payment to all states steers the middle course.

According to Scott there is a trade-off between regional equity and efficiency.[23] However Buchanan disagrees.[24] He is of the view that regional equity promotes efficiency without going deeper into the debate we are of the opinion that the planners should ensure that efficiency is not penalised to promote regional equity, if at all they are contradictory in nature.

Therefore plan assistance has to be so given that the priorities of planning are observed by the states : that they raise maximum of resources at the state level, economise on their non-plan expenditure, whatever is spent must be consistent with local development priorities and should tend to give tangible results. The condition

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23 Scott, A.D., A note on Grants in Federal Countries, Economica, Vol. 17, Nov. 1950, pp. 416-22

24 Buchanan, J.M., "Federalism and Fiscal Equity", American Economic Review, Vol. 40, Sept. 1950, p. 583.

is observed and the state plan is finalised after discussion between the planning authorities and the state govts. Up to the end of third plan, the plan assistance was basically discretionary. This generated lot of dissatisfaction amongst the states. Some states felt discriminated against. In the national development council, therefore, it was decided that the major states would get 70% of the assistance as loans, and the rest 30% as grants. Incidentally this formula is applicable to all the states chosen for our study except Assam. In the case of Assam which is a special category state the loan component is only 10% and the rest is given as grants like many other special category states.

Introduction of the Gadgil Formula in the Fourth Plan reduced the arbitrariness in which the plan assistance was disbursed amongst the states. Sixty per cent of the assistance was on the basis of population, 10 per cent among states whose per capita income was less than all-India average, 10 per cent for continuing medium and major irrigation power projects, 10 per cent on the basis of tax effort (ratio of tax revenue to State income) and the remaining 10 per cent to meet special problems. Under the revised Gadgil Formula, 20 % of the Central assistance

is allocated on the basis of backwardness instead of 10 per cent in the earlier formula. The remaining assistance is allocated on the basis of population (60%) and 10% each on the basis of tax effort and special problems.

The population and backwardness components are universally accepted as fair. The tax effort criterion in our opinion is, however, a necessary evil, although it is true that it generally benefits the rich states. Our main argument is that for sustaining the process of economic development, efficiency in fiscal management is as much important as is equity. So, prima-facie, plan transfer through the Gadgil Formula appears quite reasonable.

2.3 Central Sponsored Schemes and Central Projects:

The device of centrally sponsored schemes are specific purpose grants and loans. These can achieve some of the plan objectives more directly. There are some projects of national importance, some with inter-state implications, e.g. population planning, inter-state power transmission lines etc. These projects cannot be financed through the general mechanism of plan assistance. Thus, for

such projects the states have to be specially spurred and induced. This is precisely the argument behind these specific purpose grants and loans. Many experiments in agricultural planning like CDA, MFAL, DPAP, SFDA etc. came through centrally sponsored schemes. The centrally sponsored schemes may be financed entirely by the Centre or, may be shared with the states in agreed proportions, generally on 50:50 basis. Over the years the importance of these types of transfers has greatly increased.

In certain cases, there were schemes which were part of State plan as well as Central plan. In the words of K. Venkataraman, "Empirically the only definition of Centrally sponsored schemes is that the Centrally sponsored schemes are those for which assistance is given over and above the assistance assured for the State plan as a whole".[25] Sometimes the state plan schemes are converted into Central, schemes with the obvious intention of getting more assistance for the states.

2.4 Investment By Non-Departmental Undertakings:

In order to remove regional disparities and achieve

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25 Venkataraman, K., "States' Finances in India", George Allen and Unwin, London, 1968, p.79.

balanced economic growth in different states the govt, inter alia, claims to have been consciously following directing investment to economically backward regions. Public enterprises are being set up in backward regions on a selective basis as these serve as effective growth points and also help expansion of employment opportunities, flow of resources, general socio-economic development and so on, according to various govt. documents.

Public enterprises constitute a major segment of industrial activity in the country today. It was born as the outcome of the conscious policy of the govt. to speed up industrialisation and achieve certain socio-economic goals. The public enterprises are engaged in a wide variety of activities. Its objectives are to help in rapid economic growth and create infrastructures of a wide variety. It goes to the credit of Late Pandit Nehru that Indian economy commands today a sound industrial base.

Public enterprises also were expected to generate resources for development, though more often than not, they have fallen short of expectations. Their other objectives were to create employment opportunities, develop

ancillary industries, promote import substitution. The record in these aspects throws up a mixture of success and failure.

One of the major objectives of public enterprises was to promote balanced regional development. The history of public sector units would clearly show that numerous such units were consciously located in backward regions so as to give a boost to the economy of the local area. Unluckily, in working out their impact on the local economy and the people, many analysts including economists go by the traditional methods of appraisal such as the levels of financial profitability without taking into account the broad socio-economic and welfare objectives that these public enterprises are intended to serve. On the whole, these adequate evidence to suggest that the role played by such enterprises has been to reduce regional disparities to a great extent. In any case, it needs to be stressed that any study about centre-state resource transfer is incomplete without taking into account investment by non-departmental central enterprises in various states.

CHAPTER - III

INTER-STATE REDISTRIBUTION THROUGH RESOURCE TRANSFER

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INTER-STATE REDISTRIBUTION THROUGH RESOURCE TRANSFER

Central resource transfer to the states if effected along indicated lines, can play an important corrective redistributive role. The aim of the present chapter is to analyse how far this objective has been achieved during the period 1969-85.

This chapter seeks to analyse the distribution of the different types of transfers on per capita basis, between states and groups of states. The 15 major states included in our study are divided into 3 groups of states, on the basis of per capita net state domestic product. The average of net SDP (current prices) of the four middle years of the time period under our study (i.e. 1975-79) is taken to find out the rank of different states. Each category of states consists of 5 states. The per capita net SDP (current prices) figures and the ranks are given in the Table 3.1.

States have been ranked in Table 3.1 according to per capita net SDP at current prices. We would use this classification in subsequent portions of this analysis.

Table 3.1

PER CAPITA AVERAGE NET SDP (1975-79) AT CURRENT PRICES

CATEGORY	STATES	1975-76 to 1978-79 AVERAGE SDP	RANK
	Punjab	2086.25	1
High	Haryana	1681.75	2
Income	Maharastra	1592.50	3
States Group- A	Gujarat	1429.50	4
	West Bengal	1240	5
	Karnataka	1049	6
Mid	Rajasthan	1034	7
Income States Groupr - B	Kerala	1031.75	8
	Tamil Nadu	965.25	9
	Andhra Pradesh	961.5	10
	Assam	899.5	11
Low	U.P.	851	12
Income States	M.P.	846.00	13
Group - C	Orissa	784.25	14
	Bihar	712.50	15

SOURCE :- Estimates of State domestic product, C.S.O. Various Issues.

GROUP- A stands for high income states and consists of Punjab, Haryana, Maharastra, Gujarat and WEST BENGAL. GROUP-B states consists of Karnataka, Rajasthan, Kerala, Tamil Nadu and Andhra and are known as mid-income states. Orissa, Assam, Madhya Pradesh, U.P. Bihar are clubbed in GROUP-C and are the poor income states.

On the basis of this classification we will proceed to find out the central transfers to the three groups of states. Similarly, in order to study the redistributive role of the aggregate budgetary transfers it is necessary to have a state-wise break down of per capita transfers for different time periods, during 1969-85. In first part this is done on a plan to plan basis while later in the chapter , it is done on a year-to-year basis. Again, in the first part, the whole time period is divided into three periods, largely syncronising with the IVth, Vth and the VIth plan periods. Then transfer by different categories to different states and different groups of states are analysed by percentage deviation method and rank correlation method on a plan to plan basis. In seccond part-the analysis is limited to the three groups of states. The ratio of percapita transfers to high income states and low income states on the one hand and high income states and mid income states on the other are also taken

into account. Any value of less than one would indicate progressivity in the trend. The smaller the value the more is the progressiveness. From these values we can know the trend. We have also used the graphs of various types of transfers to the three groups of states to discuss the trend.

3.1 Plan to Plan Analysis:

An Overview:

It can be seen from the different tables, the relative position of different states and different groups of states in terms of transfer of resources. Among the 15 group A, B,C states the GROUP-C, or low income, states have received more than the all states average in case of all types of transfers except schematic (central plan + central sponsored schemes) transfers. Here the all-states average is the average of 15 states under our study. (Hereafter all-states average). In Table 3.2, 3.3, and 3.4, we have given the percapita figures as well as the percentage deviation figures by the four types of transfers namely statutory, plan, schematic and investment by central enterprises. In the fifth coloumn we have the total direct resource transfer or, sum of the first three to individual states and three

groups of states. We have excluded the investment by central enterprises in different states from the total figures because of their indirect nature. So, during all the three plan periods the poor states as a whole have received more in percapita terms than the average. The only type of transfer that does not follow the general rule is the schematic transfers. But, it's share has been relatively less and we have more total direct resource transfer to poor or, GROUP-C states. Further, among the poor income states ORISSA and Assam have also received more than the all-states average. The same cannot be said about the other three states in terms of total direct resource transfer. In terms of total though there is a trend towards increasing progressivity, still during all the three plan periods, they have received less than the average. But during 1980-85 or, the sixth plan period, their receipts are very close to the average figures.

The middle income states as a whole have received 97.461 % , 102.938 % and 96.254 % of the all-states average during IVth, Vth and VIth plans respectively. So, they have received, on an average, almost equal to all-states average in per capita terms. In the case of poor income states, the percentage deviation figures for total direct

resource transfer was always increasing. But, in the case of mid-income states, the percentage deviation figures had first shown an increasing and then a declining trend. Among the mid income states, Rajasthan has benefitted the most. It has always got more than all-states average during all the plan periods. Kerala is another major beneficiary. During the IVth and Vth plan periods, it had received more than the all-states average figures whereas in the VIth plan, it received less.

The high income states as a whole have received less than average in case of all the three plans. The situation is not much different even if we consider individual states of that group.

The rank correlation of percapita income with total direct resource transfer has also shown an increasingly progressive trend. The rank correlation coefficients are + 0.15 , -0.24 and -.40 respectively during IVth, Vth and VIth plans. (Refer to Table 3.5). As outlined earlier in the chapter-I (methodology), a negative rank correlation coefficient implies higher transfer in percapita terms to low income states and vice-versa. The

closer the values are to -1 the higher is the progressiveness. Just the opposite happens in case of positive values. The closer they are to plus one higher is the regressiveness. Of course the rank correlation coefficient is statistically significant in case of VIth plan only. In case of IVth plan though the result is stastically insignificant, still we can say that the rank correlation figure of + 0.15 is indicative of least progressiveness. But, the trend is certainly towards increasing progressivity.

Statutory transfer

In the case of statutory transfer the poor income states have got the most followed by mid-income states, and the high income states getting the least during each of the three plans. The situation is more or less the same in all the three time periods, if we consider the percentage deviation figures. But, among the poor income states Assam and ORISSA are the only states to have received more than the all-states average in the IV and Vth plans. But, in the VI plan, all other states of the group have also received more than all states average. So, this is a distinct improvement over the earlier two periods. Kerala, Rajasthan are the two

mid-income states which have benefitted the most from statutory transfers in the first two time periods of our analysis. West Bengal in the Ist two time periods and Maharastra in the Ist time period received more than the all states average. But, in the VIth plan all the high income states including Maharastra and West Bengal have received less than the all-states average. This is indeed an indication of more progressiveness since simultaneously all the poor income states received more than the all-states average.

The rank correlation coefficients between statutory transfers with the per capita income also shows increasing progressiveness. They are -.31 , -.54 and -.73 respectively for IVth, Vth and VIth plan periods. Except the IVth plan the rank correlation figures are statistically significant. So, we can say that statutory transfers have become increasingly progressive over the years.

Plan Transfer

Just like the statutory transfer in case of plan transfer the poor income states as a whole have always received more than the other two groups of states. Assam is the biggest beneficiary during all the three plans under our study. It has got almost double the

all-states average in case of all the three plans. Orissa is another beneficiary from among the poor income-states. But, all the other three states from among GROUP-C states have received less than the all-states average during the IVth and VIth plans. In Vth plan besides Assam and ORISSA U.P. has also received more than the all-states average whereas the other two states are below it. Except the Vth plan the mid-income states as a whole have received less than both high income and low income states. Rajasthan from among the mid income states have received more than all states average during all the three plans.

Punjab and Haryana are the two high income states which got more than the all-states average, during the IVth and Vth plan. Maharastra has got more than all states average during the VIth plan. The poor income states have steadily improved their position over the entire time period. During the VIth plan the poor income states received nearly 30 per cent more than the all-states average in the VIth plan. But, unlike statutory transfer, plan transfer does not seem to be so beneficial to the mid-income states.

The rank correlation coefficient of plan transfer

with income in case of all the three plans is negative. Though statistically insignificant, they are indicative of some kind of progressiveness in transfer. Plan transfer during the Vth plan showed clear improvement over the previous period though progressiveness declined during the next plan.

Schematic Transfer:

Schematic transfer refers to the transfer to the states for central projects and the central sponsored projects. Arguably this is the least progressive. Poor income states have got less than both the mid income states and the high income states during all the three plan periods. Their position has distinctly improved during the Vth plan when it got nearly 90% of the all-states average in comparison with the 79.622% in the previous plan. The improvement during VIth plan was not very spectacular. It was only 1% more than the previous plan in terms of percentage deviation figures. Except for the IVth plan, the mid-income states as a whole have received more than the other two groups of states. In the IVth plan the high income states got the most. So , Vth and VIth were an improvement over the IVth plan in the sense that the mid-income and low-income states got relatively more.

So, the trend during the IVth and Vth plan was towards declining regressivity. But, the situation during the VIth plan was almost similar to that during the Vth plan. Rajasthan from among the mid-income states and Punjab from among the high income states have received more.

The regressive nature of schematic transfer is reflected in its rank correlation coefficients with per capita income. They are always positive, though statistically insignificant.

Investment by Central enterprises:

Investment by central enterprises in terms of gross blocks are also expressed in per capita figures. Investment till 31.3.1974 has been heavy in almost all the low-income states except U.P. Both the high income and mid-income states have been on an equal footing till then. But, once we consider the figures of investment till 1980 we find the situation has dramatically improved in favour of the high income states. This implies a tilt of heavy investment towards high income states during this period. In terms of percentage deviation figure it went up to as much as 101.37 from 64.63. This improvement has been at the cost of low income states as the

position of the mid-income states remained more or less unchanged. Again, if we take the 80-85 figures, the position more or, less remained unchanged. It should be borne in mind that the figures are for cumulative investment and not just the incrementals. However from the change in the percentage deviation figures we can find out the relative investment in the three different groups of states. Investment in Maharastra has been relatively more during Vth and VIth plans. So, in terms of gross investment it has worked its way to the top from the rock bottom. In terms of comulative investment, the poor income states are always better off than the other two groups of states. But, during the period covered by our analysis, investment has not been relatively more in poor states as their relative position has worsened. Investment has been low till 31.3.1974 in the case of mid-income states. It has not changed much in 1985 too, in relative terms. The investment has been relatively more in high income states in general and Maharastra in particular. If we take the rank correlation figures, we find that though they are always negative and statistically significant only for the Ist period the trend is towards declining progressivity.

Table 3.2

CATEGORY-WISE RESOURCE TRANSFER 1969-74

STATE	RUPEES PER CAPITA				
	STATUTORY	PLAN	CENTRAL PROJECTS + CENTRAL SPONS.	INVESTMENT till 31.3.74	TOTAL 1 + 2 + 3
Punjab	79.53	68.67	44.64	29.72	192.84
Haryana	69.36	79.06	10.87	10.12	159.29
Maharastra	95.65	50.14	20.74	37.84	166.53
Gujarat	83.44	71.19	28.48	87.07	183.11
West Bengal	97.69	48.04	16.74	122.00	162.47
GROUP - A	85.134	63.42	24.294	57.35	172.848
Tamil Nadu	86.43	47.19	8.81	84.50	142.43
Kerala	105.81	78.82	19.39	75.47	204.02
Karnataka	81.75	55.29	19.44	51.17	156.48
Andhra Pradesh	89.44	47.95	21.14	44.03	158.53
Rajasthan	98.04	85.02	34.53	40.94	217.59
GROUP - B	92.294	62.854	20.662	59.22	175.81
Orissa	120.12	96.64	13.17	224.93	229.93
Assam	127.53	115.89	15.83	96.26	259.25
Madhya Pradesh	79.13	56.93	22.70	159.73	158.76
U.P.	83.90	56.52	12.09	23.20	152.51
Bihar	85.45	59.24	17.42	244.03	162.11
GROUP - C	99.226	77.044	16.242	149.63	192.512
All State Average	92.218	67.773	20.399	88.73	180.39

table 3.2 contd.....

Table 3.2 contd.

STATE	PERCENT DEVIATION FROM AVERAGE				
	STATUTORY	PLAN	CENTRAL P + CENT SP	TILL 31.3.1974 INVESTMENT	TOTAL 1 + 2 + 3
Punjab	86.24	101.32	218.83	33.49	106.90
Haryana	75.21	116.65	53.29	11.41	88.30
Maharastra	103.72	73.98	101.67	42.65	92.32
Gujarat	90.48	105.04	139.61	98.13	101.51
West Bengal	105.93	70.88	82.06	137.50	90.07
GROUP - A	92.318	93.577	119.094	64.63	95.819
Tamil Nadu	93.72	69.63	43.19	95.23	78.96
Kerala	114.74	116.30	95.05	85.06	113.10
Karnataka	88.65	81.58	95.30	57.67	86.75
Andhra Pradesh	96.99	70.75	103.63	49.62	87.88
Rajasthan	106.31	125.45	169.27	46.14	120.62
GROUP - B	100.082	92.742	101.289	66.74	97.461
Orissa	130.26	142.59	64.56	253.50	127.46
Assam	138.29	171.00	77.60	108.49	143.72
Madhya Pradesh	85.81	84.00	111.28	180.02	88.01
U.P.	90.98	83.40	59.27	26.15	84.54
Bihar	92.66	87.41	85.40	275.03	89.87
GROUP - C	107.599	113.679	79.622	168.64	106.720
All State Average	100	100	100	100	100

Table 3.3

CATEGORY-WISE RESOURCE TRANSFER (1974-80)

STATES	RUPEES PER CAPITA				
	STATUTORY	PLAN	CENTRAL PLAN + CENTRAL SP.	INVESTMENT till 31-3-80	TOTAL 1 + 2 + 3
Punjab	174.85	160.35	59.25	228.59	394.45
Haryana	163.38	178.52	59.79	205.69	401.69
Maharastra	194.96	106.07	46.81	218.45	347.84
Gujarat	192.38	128.43	61.19	269.77	382.00
West Bengal	234.30	113.38	27.45	279.19	375.13
GROUP - A	191.974	137.35	50.898	240.34	380.222
Tamil Nadu	196.69	135.42	38.83	159.42	370.94
Kerala	275.00	159.80	44.61	164.78	479.41
Karnataka	185.18	127.17	65.82	212.11	378.17
Andhra Pradesh	234.60	178.59	51.32	152.29	464.51
Rajasthan	258.17	178.48	84.83	102.67	521.48
GROUP - B	229.928	155.892	57.082	158.26	442.902
Orissa	296.17	201.54	64.66	347.46	562.37
Assam	278.78	294.92	53.64	245.12	627.34
M.P.	180.09	129.15	46.56	426.50	355.80
U.P.	213.02	164.86	35.52	76.74	413.40
Bihar	213.68	131.99	33.68	467.52	379.35
GROUP - C	236.348	194.492	46.812	312.67	467.652
All States Average	219.417	159.245	51.597	237.09	430.259

Table 3.3. contd...

Table 3.3. contd

STATE	PERCENT DEVIATION FROM AVERAGE				
	STATUTORY	PLAN	CENTRAL PLAN + CENTRAL SP	INVESTMENT till 31-3-80	TOTAL 1 + 2 + 3
Punjab	79.69	100.69	114.83	96.41	91.68
Haryana	74.46	112.10	115.88	86.76	93.36
Maharastra	88.85	66.61	90.72	92.14	80.84
Gujarat	87.68	80.65	118.59	113.78	88.78
West Bengal	106.78	71.20	53.20	117.76	87.19
GROUP - A	87.493	86.251	98.645	101.37	88.370
Tamil Nadu	89.64	85.04	75.26	67.24	86.21
Kerala	125.33	100.35	86.46	69.50	111.42
Karnataka	84.40	79.86	127.57	89.46	87.89
Andhra Pradesh	106.92	112.15	99.46	64.23	107.96
Rajasthan	117.66	112.08	164.41	43.30	121.20
GROUP - B	104.790	97.894	110.630	66.75	102.938
Orissa	134.98	126.56	125.32	146.55	130.70
Assam	127.05	185.20	103.96	103.39	145.81
M.P.	82.08	81.10	90.24	179.89	82.69
U.P.	97.08	103.53	68.84	32.37	96.08
Bihar	97.39	82.88	65.28	197.19	88.17
GROUP - C	107.716	115.854	90.726	131.88	108.691
All States Average	100	100	100	100	100

Table 3.4

CATEGORY-WISE RESOURCE TRANSFER 1980-85

STATES	RUPEES PER CAPITA				
	STATUTORY	PLAN	CENTRALPLAN + CENTRAL SP.	INVESTMENT till 31.3.85	TOTAL 1 + 2 + 3
Punjab	303.72	207.47	150.33	329.05	661.52
Haryana	293.41	246.92	126.5	302.50	666.83
Maharastra	332.96	272.11	86.09	1168.82	691.16
Gujarat	329.49	196.95	99.62	494.83	626.06
West Bengal	334.00	170.52	47.44	549.08	551.96
GROUP - A	318.716	218.794	101.996	568.86	639.506
Tamil Nadu	377.23	182.03	106.50	514.43	665.76
Kerala	352.77	201.47	94.52	298.17	648.76
Karnataka	330.73	174.16	105.61	346.37	610.05
Andhra Pradesh	347.58	229.88	114.32	723.79	691.78
Rajasthan	312.82	264.78	138.27	174.99	715.87
GROUP - B	344.226	210.464	111.844	411.55	666.534
Orissa	403.77	307.40	110.87	1020.53	822.04
Assam	304.34	623.56	94.10	1060.58	1022.00
M.P.	345.57	231.35	83.53	927.94	660.45
U.P.	348.72	230.06	103.50	222.96	682.28
Bihar	379.78	214.01	76.31	793.85	670.10
GROUP - C	356.436	321.276	93.662	806.97	771.373
All- State Average	339.793	250.178	102.501	595.79	692.472

Table 3.4 contd.

STATES	PERCENT DEVIATION FROM AVERAGE				
	STATUTORY	PLAN	CENTRAL PLAN + CENTRAL SP.	INVESTMENT till 31·3·85	TOTAL 1 + 2 + 3
Punjab	89.38	82.93	146.66	55.23	95.53
Haryana	86.35	98.70	123.41	50.77	96.30
Maharastra	97.99	108.77	83.99	196.18	99.81
Gujarat	96.97	78.72	97.19	83.05	90.41
West Bengal	98.30	68.16	46.28	92.16	79.71
GROUP - A	93.797	87.455	99.507	95.48	92.351
Tamil Nadu	111.02	72.76	103.90	86.34	96.14
Kerala	103.82	80.53	92.21	50.05	93.69
Karnataka	97.33	69.61	103.03	58.14	88.10
Andhra Pradesh	102.29	91.89	111.53	121.48	99.90
Rajasthan	92.06	105.84	134.90	29.37	103.38
GROUP - B	101.305	84.092	109.115	69.08	96.254
Orissa	118.83	122.87	108.16	172.80	118.71
Assam	89.57	249.25	91.80	178.01	147.59
M.P.	101.70	92.47	81.49	155.75	95.38
U.P.	102.63	91.96	100.97	37.42	98.53
Bihar	111.77	85.54	74.45	133.24	96.77
GROUP - C	104.898	128.419	91.377	135.45	111.394
All - State average	100	100	100	100	100

Table 3.5

COEFFICIENT OF RANK CORRELATION OF DIFFERENT TYPES OF TRANSFER WITH PER CAPITA INCOME

TYPES OF TRANSFER	PLAN PERIODS		
	IV(1969-74)	V (1974-80)	VI (1980-85)
1. Per Capita Statutory Transfer	-.31 t = - 1.220	-.54* t = - 2.401	-.73** t = - 3.997
2. Per Capita Plan Transfer	-.01 t = -.037	-.32 t = - 1.264	-.27 t= -1.049
3. Per Capita Schematic Transfer	+.31 t = 1.220	+.29 t = + 1.134	+.32 t= + 1.264
4. Per Capita Investment by Central Enterprises	-0.49* t =-2.103	-.22 t = -.844	-.33 t= -1.308
5. Per Capita Total Direct Resource Transfer (1+2+3)	+0.15 t= 0.587	-.24 t = -.925	-.40* t= -1.633

* Significant of 5 per cent level (one sided test)
** Significant at 1 per cent level (one sided test)

3.2 Year to Year Analysis:

This part is devoted to analyse the trend of various types of transfers in per capita terms to the three groups of states, on year-to-year basis. We have used graphs of percapita transfers to the three groups of states by different types of transfers. We have also given the percentage deviation figures from the average for the three groups of states for the total period 1969-85. We have used the ratios of per capita transfers by different types to high income and low income states on the one hand and high income and middle income on the other. The lower the value of the ratios the higher is the degree of progressiveness. If the ratios are more than one then we can say that the transfers are progressive. A ratio of more than than one implies higher percapita transfer to poorer states as a group than the richer states as a group. Then we can study the trend of progressiveness in case of each type of transfer.

3.2.1 An Overview for 1969-85:

Statutory transfers: Except for 1978-79 and 1983-84, the poor income states as a whole have received more than the high-income states and the mid-income states. This fact is illustrated by the graph for percapita statutory

transfer. The graph for mid-income states is below the graph for low-income states and above that for high income states. The difference in percapita terms between mid-income states and low-income states is not really very significant. But, the difference between poor income states as a whole and high income states is significant particularly between 1974 and 1977. Only during 1978-79 and 1983-84 have the mid income states got more than the low income states. It should, however, be borne in mind that the graphs for all the three groups of states lie very close to each other. Progressiveness has not been of a high order. Nor does it show any tendency of recline towards regressivity.

Secondly we should not forget that per capita figures for GROUP-C or, the low-income states were very much affected by the transfers to Assam and ORISSA. It is only during the latter years of our analysis that the three others poor states of the group have got transfers close to the all-states average. So, it seems that over the years, there has been a tendency to protect the interests of the poorest of the poor states.

We have also divided the percapita figures of GROUP-A and GROUP-B on the one hand and those of GROUP-A

Table 3.6

PERCENT DEVIATION FROM AVERAGE : STATUTORY TRANSFER

	1969-70	1970-71	1971-72	1972-73	1973-74
GROUP - A	84.92	89.21	95.13	94.00	95.87
GROUP - B	98.74	100.00	101.59	100.54	99.40
GROUP - C	116.41	110.85	103.23	105.46	104.68
GROUP - A / GROUP - B	0.86	0.89	0.94	0.93	0.96
GROUP - A / GROUP - C	0.73	0.80	0.92	0.89	0.92

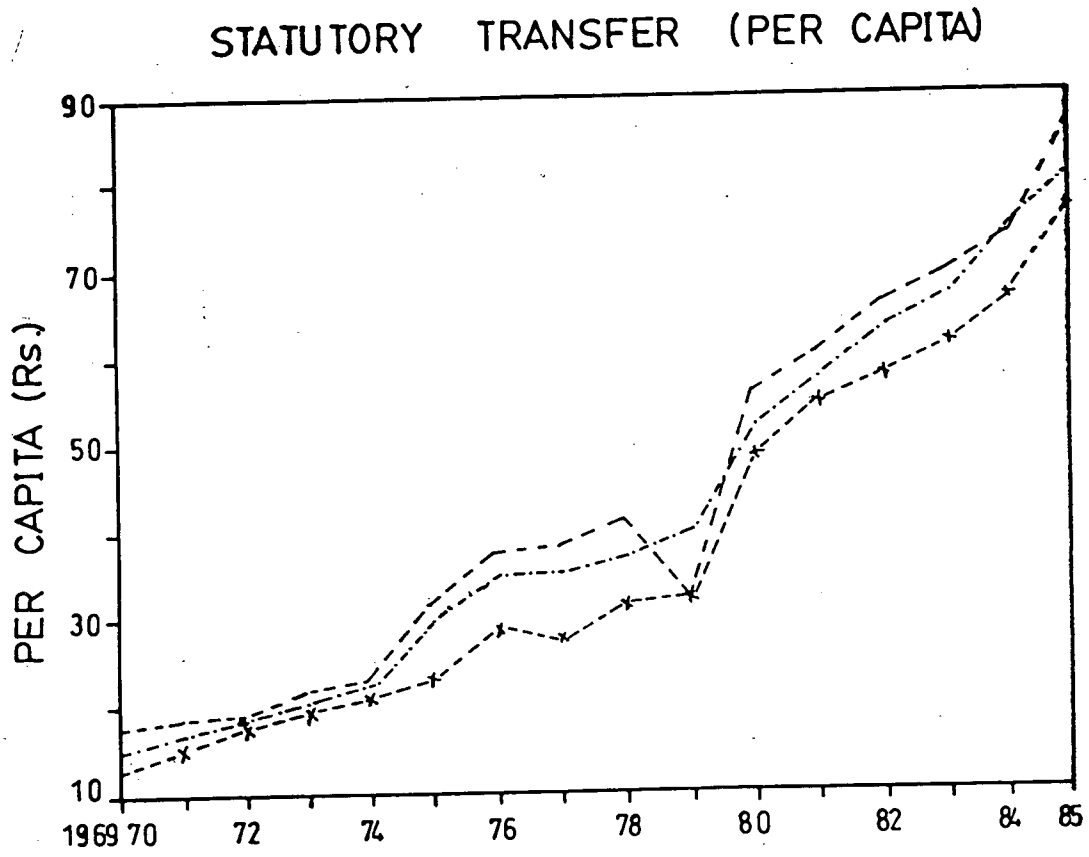
	1974-75	1975-76	1976-77	1977-78	1978-79
GROUP - A	81.64	85.02	81.53	86.42	92.82
GROUP - B	105.98	103.88	105.44	101.63	115.07
GROUP - C	112.42	111.07	113.01	111.92	92.14
GROUP - A / GROUP - B	0.77	0.82	0.77	0.85	0.81
GROUP - A / GROUP - C	0.73	0.77	0.72	0.77	1.01

	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
GROUP - A	93.29	95.58	93.11	93.16	93.19	94.12
GROUP - B	99.69	99.81	101.55	101.60	104.62	99.04
GROUP - C	107.02	104.63	105.33	105.25	102.19	106.87
GROUP - A / GROUP - B	0.94	0.96	0.92	0.92	0.89	0.95
GROUP - A / GROUP - C	0.87	0.95	0.88	0.89	0.91	0.88

N.B. $\frac{\text{GROUP-A}}{\text{GROUP-C}}$ $\frac{\text{Per Capita transfer to Group-A}}{\text{Per Capita transfer to Group-C}}$

$\frac{\text{GROUP-A}}{\text{GROUP-B}}$ Can also be interpreted in the same matnner. They are the same as the ratios of the percentage deviation figures.

GRAPH NO. 3.1



low income

mid income

high income

and GROUP-C on the other. The ratio, if it is less than one is indicative of progressivity. And an increase of the ratio would imply decline in the degree of progressiveness.

In the case of statutory transfer, except for 1978-79, all other figures are less than one implying more per capita transfer to poorer states. And the period 1974-75 to 1977-78 shows the most progressive trend. The value of the ratios are the lowest during this period. The ratios and the percentage deviation figures are given in Table - 3.6 and the graphs in Graph No.3.1

Plan Transfer:

Central Plan Transfer is also equally progressive. But, during 1970-74 it has been more favourable to high income states than mid-income states. In 1969-70 it has been the most progressive. This is clearly reflected by the ratios. But, after that the ratio has steadily increased. In 1972-73, the low income states received substantially more than high income states. In 1970-71, 1972-73 and 1973-74 the transfer to GROUP-C (poor income) states is only marginally higher than high income states.

During the next five years i.e. from 1974-79 both

Table 3.7

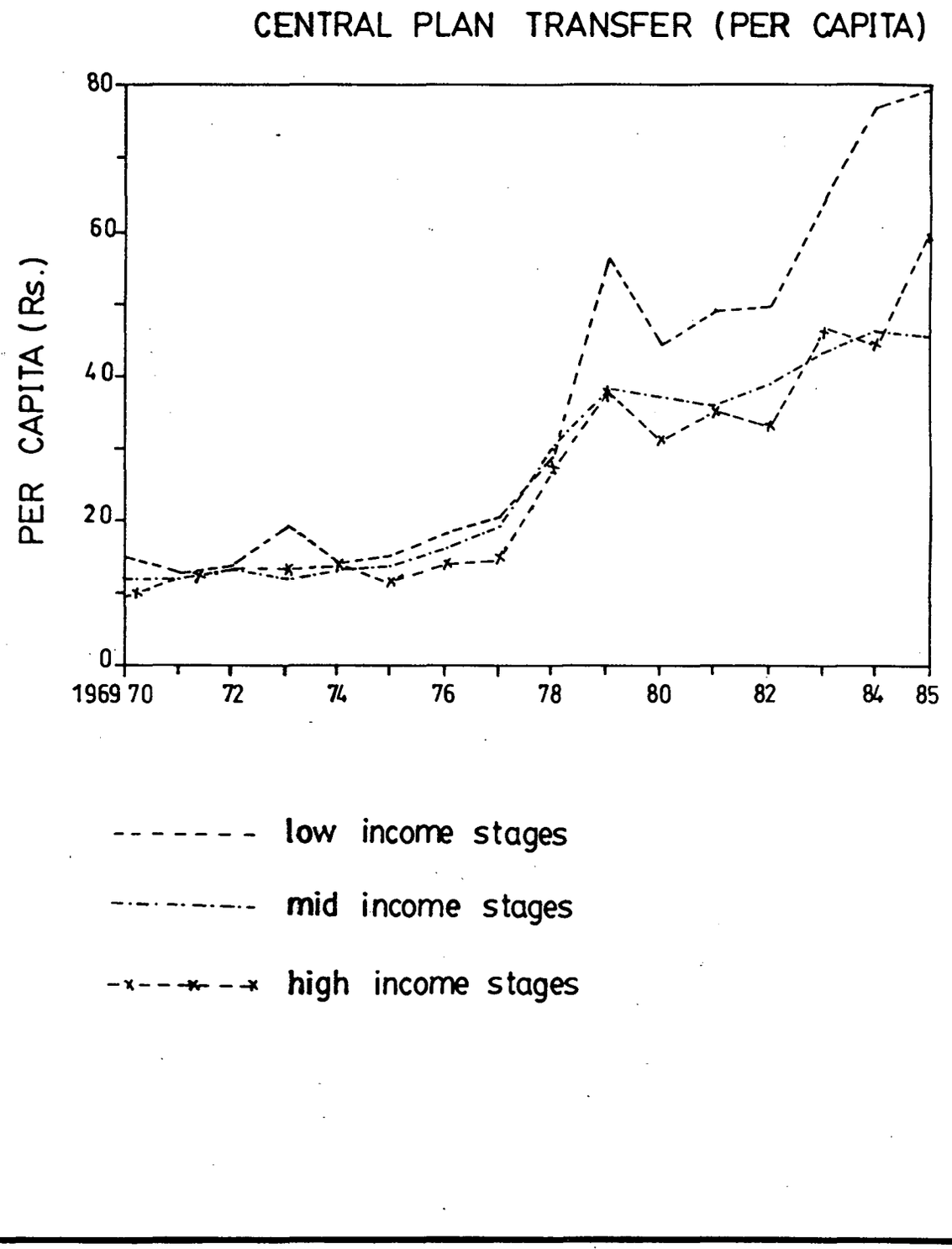
PERCENTAGE DEVIATION FROM AVERAGE : PLAN TRANSFER

	1969-70	1970-71	1971-72	1972-73	1973-74
GROUP- A	80.23	97.52	98.84	89.94	100.72
GROUP- B	97.09	97.04	97.09	80.01	94.69
GROUP--C	122.76	105.44	104.00	130.11	104.52
GROUP- A / GROUP- B	0.83	1.005	1.02	1.12	1.06
GROUP- A / GROUP- C	0.65	0.92	0.95	0.69	0.96

	1974-75	1975-76	1976-77	1977-78	1978-79
GROUP- A	84.79	86.77	81.15	95.11	85.77
GROUP- B	102.94	99.94	105.72	104.82	86.81
GROUP- C	112.20	113.23	113.13	100.03	127.44
GROUP- A / GROUP- B	0.82	0.87	0.77	0.91	0.99
GROUP- A / GROUP- C	0.76	0.77	0.72	0.95	0.67

	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
GROUP- A	82.78	87.62	81.17	90.39	79.13	96.59
GROUP- B	99.07	89.73	95.75	84.27	82.76	73.93
GROUP- C	118.12	122.63	123.09	125.35	138.09	129.48
GROUP- A / GROUP- B	0.84	0.98	0.85	1.07	0.96	1.31
GROUP- A / GROUP- C	0.70	0.71	0.66	0.72	0.57	0.75

GRAPH NO. 3.2.


CENTRAL PLAN TRANSFER (PER CAPITA)
PER CAPITA (Rs.)
80
60
40
20
0
1969 70
72
74
76
78
80
82
84
85
low income stages
mid income stages
high income stages

the types of ratios are less than one and the difference between GROUP-A and GROUP-C is also substantial. The trend continues in 1979-85. But, during 1982-83 and 1984-85 high income states have got marginally higher per capita transfer than mid income states. But, during the last eleven years of our analysis poor states transfers have registered high growth rate than mid income and high income states.

Progressiveness is more pronounced in plan transfer than it is in statutory transfer. The graph for the low-income states is always above those for the other two groups of states. But, high income state's graph occasionally flipped over the graph for the mid-income states. The poor-income states as a whole have got substantially higher percapita plan transfer than other groups of states. The ratios between different groups of states are given in Table 3.7 and the graph in Graph No. 3.2.

Schematic Transfers:

In the case of schematic transfers, the inter state distribution has been generally favourable to mid-income and high income states. It must, however, be pointed out that no uniformly smooth and clear-cut picture

Table 3.8

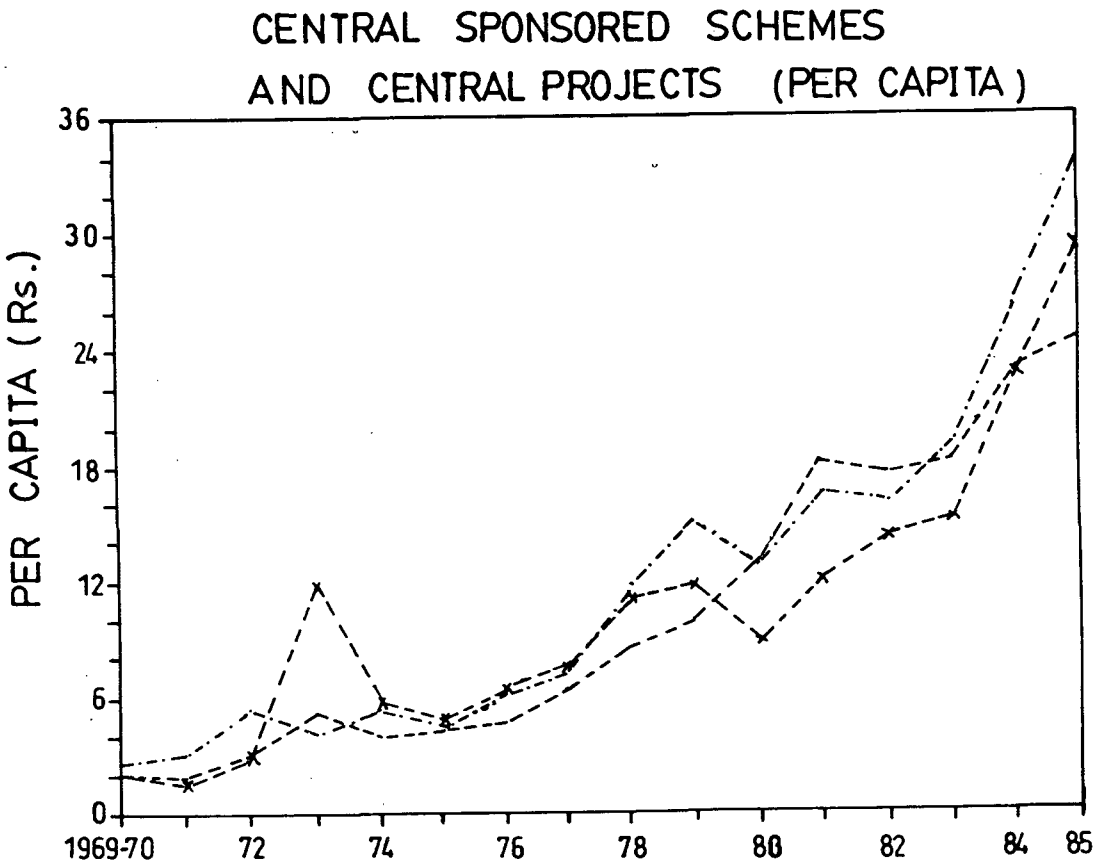
PERCENT DEVIATION FROM AVERAGE: (SCHEMATIC TRANSFER)
CENTRAL PROJECT AND CENTRAL SPONSORED PROJECT

	1969-70	1970-71	1971-72	1972-73	1973-74
GROUP - A	93.67	71.30	80.73	166.29	114.29
GROUP - B	117.65	139.46	141.67	59.24	105.36
GROUP - C	89.14	88.79	77.34	74.47	80.36
GROUP - A / GROUP - B	0.80	0.51	0.57	2.81	1.08
GROUP - A / GROUP - C	1.05	0.80	1.04	2.23	1.80

	1974-75	1975-76	1976-77	1977-78	1978-79
GROUP - A	109.58	112.28	106.32	107.91	96 .17
GROUP - B	95.10	106.06	103.79	110.22	122 .74
GROUP - C	95.32	82.01	89.61	81.97	81 .17
GROUP - A / GROUP - B	1.152	1.06	1.02	0.98	0 .78
GROUP - A / GROUP - C	1.149	1.37	1.19	1.32	1 .18

	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
GROUP - A	77.16	77.62	89.64	86.49	94.99	101.05
GROUP - B	110.81	105.85	100.31	109.06	109.14	105.62
GROUP - C	112.02	116.59	109.93	104.50	95.82	83.33
GROUP - A / GROUP - B	0.70	0.73	0.89	0.79	0.87	0.87
GROUP - A / GROUP - C	0.69	0.67	0.82	0.83	0.99	1.21

GRAPH NO. 3.3


CENTRAL SPONSORED SCHEMES
AND CENTRAL PROJECTS (PER CAPITA)
PER CAPITA (Rs.)
36
30
24
18
12
6
0
1969-70
72
74
76
78
80
82
84
85
low income
mid income
high income

emerges from the percentage deviation figures and the ratios of per capita transfers to different groups of states. Analysing the graph we also find that in per capita terms, schematic transfers have generally favoured mid income states with a few exceptions. Unlike the other two direct transfers this seems to be rather regressive Nevertheless, since 1978-79, efforts seem to have been made to alter this position. All the ratios after this year are significantly less than one, implying that the group of poorer states are better off than the rich ones in terms of such transfers. The graph for the high income states during this period lies below the graphs for the other two groups of states. A careful perusal of Table No.3.8 and Graph No.3.3 are indicative of the tendencies outlined above.

Investment by Central non departmental enterprises:

In respect of the earlier years of our analysis, total investment in gross blocks was much higher in poor states. The graphs in per capita terms for GROUP-C always lies above those for GROUP-A and GROUP-B states Investment during 1969-70 to 1974-75 has almost been the same in percapita terms for the high income and mid-income states. The two graphs overlap during this period. The

Table 3.9

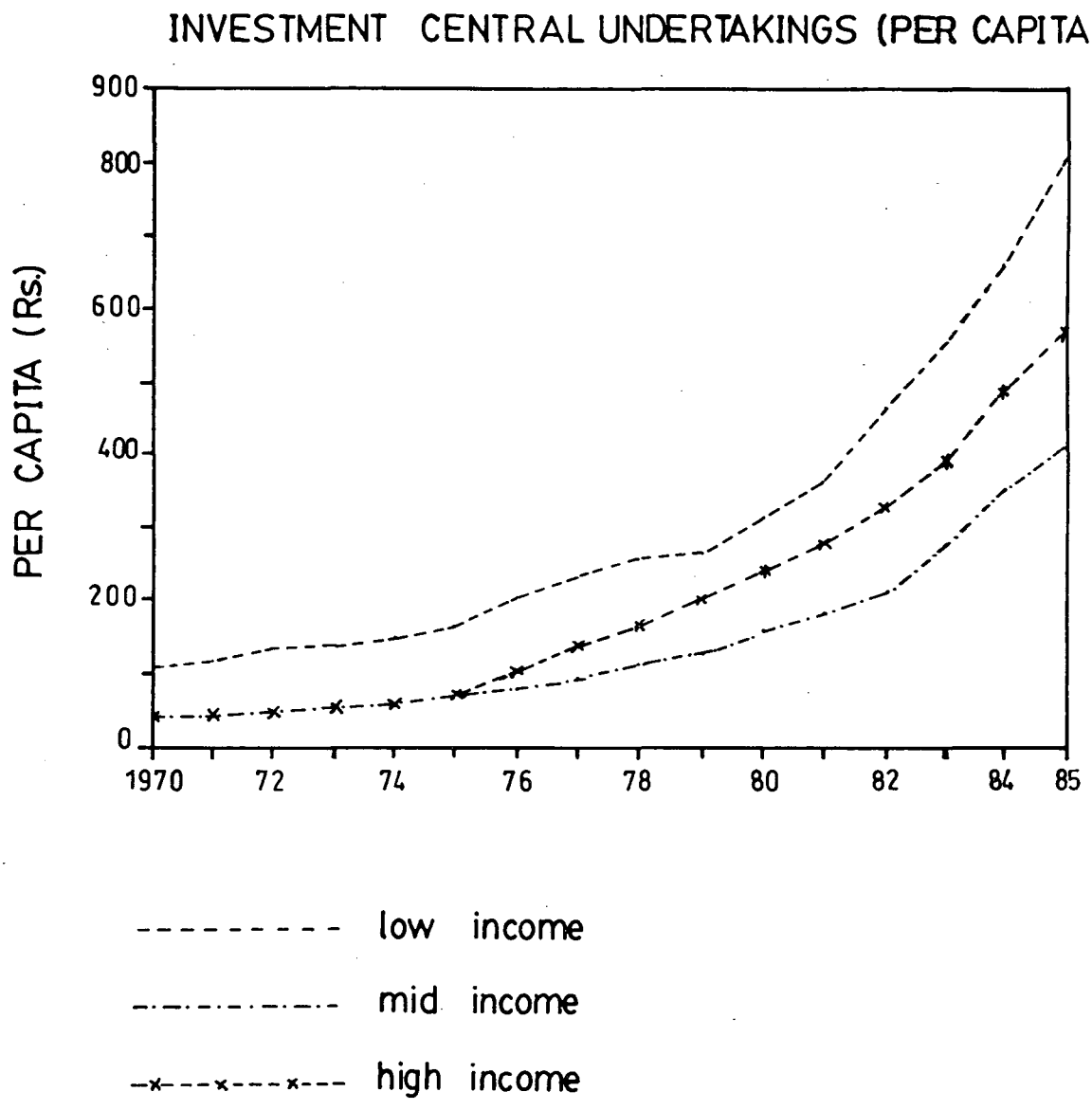
PERCENT DEVIATION FROM AVERAGE : INVESTMENT BY CENTRAL ENTERPRISES

	1969-70	1970-71	1971-72	1972-73	1973-74
GROUP - A	62.42	60.27	62.28	65.63	64.63
GROUP - B	62.75	57.94	60.75	63.39	66.74
GROUP - C	174.83	181.80	176.56	170.99	168.64
GROUP - A / GROUP - B	0.99	1.04	1.03	1.04	0.97
GROUP - A / GROUP - C	0.36	0.33	0.35	0.38	0.38

	1974-75	1975-76	1976-77	1977-78	1978-79
GROUP - A	70.35	80.21	89.31	92.50	101.57
GROUP - B	67.33	62.02	59.60	63.15	63.99
GROUP - C	162.31	157.77	151.08	144.35	134.45
GROUP - A / GROUP - B	1.04	1.29	1.50	1.46	1.59
GROUP - A / GROUP - C	0.43	0.51	0.59	0.64	0.76

	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
GROUP - A	101.37	101.57	97.84	95.71	97.19	95.49
GROUP - B	66.75	66.49	63.18	68.22	70.43	69.08
GROUP - C	131.88	131.95	138.99	136.06	132.38	135.45
GROUP - A / GROUP - B	1.52	1.53	1.55	1.40	1.38	1.38
GROUP - A / GROUP - C	0.77	0.77	0.70	0.70	0.73	0.70

GRAPH NO. 3.4


INVESTMENT CENTRAL UNDERTAKINGS (PER CAPITA)
PER CAPITA (Rs.)
900
800
600
400
200
0
1970
72
74
76
78
80
82
84
85
low income
mid income
high income

ratios of per capita investment of the two groups of states are very close to each other. In the case of the poor income states and high income states, the ratio is very much lower than one indicating relatively higher investment in backward regions. Of course the fatio shows an upward trend during 1974-79 indicating some decline in progressiveness. The ratio since then has consistently moved upwards. So, we can conclude that growth rate of inveetment in per capita terms has been more in case of the high income states than poor income states during 1974-79.

However, subsequently during 1979-85 the growth rate of cumulative investment in percapita terms is higher in the case of the poor-income states. The graph for such states has risen more steeply since 1974-75, the graph for mid-income states is always below the graphs for the other two groups of states.

So, cumulative investment by non-departmental enterprises is not only higher for the poor-income states but its growth rate in percapita terms has consistently been higher except for the brief period 1974-79. The ratios between GROUP-A and GROUP-C after

registering an increase during 1974-79 has stagnated at around 70 to 75 per cent during 1979-85. For relevant tables, please refer to Table 3.9 and Graph No.3.4.

The Total direct Resource Transfer:

Though in general, the schematic transfers have been rather regressive in their operations, their share in total direct transfer has been less. . As such it has not been able to alter the overall picture of progressiveness. The ratios between GROUP- A and GROUP-C have always been less than one though not significantly away from one. In the case of GROUP-A in relation to GROUP-B, with a few exceptions of two or three years, the ratio has generally been less than one (Table-3.10)

.2.2 Concluding Remarks:

So, except for the schematic transfers, all other transfers have generally been fairly progressive in their operation. The GROUP-C states as a whole got more than what high income and middle income states have been getting. It might not be adequate, but the transfers are certainly progressive.

The regressiveness of schematic transfers have not

Table- 3-10

PERCENT DEVIATION FROM AVERAGE' TOTAL DIRECT RESOURCE TRANSFER

	1969-70	1970-71	1971-72	1972-73	1973-74
GROUP -A	83.61	91.25	95.01	104.53	99.80
GROUP -B	99.46	101.63	104.16	86.40	98.53
GROUP- C	117.03	107.12	100.75	109.09	101.62
GROUP - A / GROUP - B	0.84	0.90	0.91	1.21	1.01
GROUP - A / GROUP - C	0.71	0.85	0.94	0.96	0.98

	1974-75	1975-76	1976-77	1977-78	1978-79
GROUP - A	85.28	88.35	84.40	92.65	89.86
GROUP - B	104.03	102.95	105.33	104.01	102.41
GROUP - C	110.69	108.70	110.23	103.32	107.77
GROUP - A / GROUP - B	0.82	0.86	0.80	0.89	0.88
GROUP - A / GROUP - C	0.77	0.81	0.77	0.90	0.83

	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
GROUP - A	87.55	90.28	88.57	91.24	88.29	96.18
GROUP - B	100.73	97.05	99.40	85.05	97.26	92.92
GROUP - C	111.71	112.67	112.01	112.83	114.44	110.91
GROUP - A / GROUP - B	0.87	0.93	0.89	1.07	0.91	1.04
GROUP - A / GROUP - C	0.78	0.80	0.79	0.81	0.77	0.87

been able to change the overall picture as its share intotal direct resource transfer has been fairly low . What is more heartening is that, over the years, there has been a tendency to reduce regressiveness. Assam, Orissa, Kerala, Rajasthan are some states which have benefitted the most from total direct resource transfer. Investment by central enterprises has been higher in all the poor states except UP and some rich states such as West Bengal. Investment in Maharastra is more in the latter years of the analysis. From the rock bottom in 1970 it has made its way to the top in 1985.

CHAPTER - IV

IMPACT OF CENTRAL TRANSFER ON GROWTH RATE OF STATES

CHAPTER - IV

IMPACT OF CENTRAL TRANSFER ON GROWTH RATE OF STATES

In a capitalist framework investment plays a pivotal role in development process. The relative weight of private investment in states already at a higher level of development is likely to be higher than that in the poorer states. So, public investment has to play a more prominent role in the poorer states to check the process of uneven spatial development. The present chapter intends to study whether the various types of central transfers had any significant impact on the growth rates of different states during the period 1969-85. We intend to study the impact of each type of central transfer by the cross section regression analysis and for each state by running time series regression analysis. From the time series analysis we can know whether these various types of transfers had any significant impact on the growth rates of the poorer states or not.

We have also summed up the three direct resource transfers, i.e. plan transfer, schematic transfer (central plan scheme + central sponsored schemes) and statutory transfer and then tried to find out their combined impact on the growth rates of different states. Here also we

have employed the cross-section regression method. For obvious reasons we have excluded the investment by central enterprises which are in gross blocks. Needless to add that they are of an indirect nature.

It would not be out of place to discuss about the variables and the methodology used in brief.

4.1 The Variables and the Equations:

In the chapter we explain the results of correlation analysis and regression analysis of various types of explanatory variables (central transfers to different states expressed as a proportion of their total expenditure) on the dependent variable (growth rate of per capita state domestic product at current prices).

4.1.1 Dependent Variable:

$$\gamma_t = \frac{Y_t - Y_{t-1}}{Y_{t-1}} \times 100$$

where γt = Growth rate of per capita income of a state at current prices for the year t.

Y_t = Per Capita income at current prices during the year t.

Y_{t-1} = Per Capita income at current prices during the year (t-1)

4.1.2 Independent Variables

a) $$X_1 = \frac{\text{Plan Transfer}_{(t-1)}}{\text{Total Expenditure}_{(t-1)}} \times 100$$

For reasons stated in Chapter - I (Methodology) we have taken a one-year lag in the case of plan transfer by the centre for the state plans. In other words we would study the impact of plan transfer on the growth rates of the successive years.

b) $$X_2 = \frac{\text{Statutory transfer}_t}{\text{Total Expenditure}_t} \times 100$$

In the case of tranfers awarded by the Finance Commission for non-plan purposes we have not taken any time-lag. The reasons are already spelt out in the methodology portion of Chapter-I. The dependent variable is linked with the statutory transfer of the same year.

c) $$X_3 = \frac{(\text{Central Projects} + \text{Central Sponsored Projects})_{(t-1)}}{\text{Total expenditure}_{(t-1)}} \times 100$$

In the case of (central sponsored projects + central projects) schematic transfers we have also taken a one year lag. (For reasons, again refer to methodology in Chapter-I) Just like the previous two types of transfers the third

variable is also expressed as a proportion of the total expenditure. All these three types of transfer are direct in nature and have a direct bearing on the total expenditure pattern of the states. This in turn, according to the capitalist theory affects growth rate at the state level.

d) $X_4 = \dfrac{\text{Total Investment in a state by non-departmental central enterprises in gross blocks till the end of year } (t-1)}{\text{Total population of the state}}$

Investment by central enterprises are indirect in nature. Secondly they are expressed in gross blocks. Because investments of these types generally create machinery which have a life span of several years. Since they do not affect the total expenditure pattern of the states they are not expressed as a proportion of total expenditure of the states. Instead they are expressed in per capita terms. In other words we have linked per capita investment in a state till the end of the year $(t - 1)$ with the growth rate of that state for the year t.

e) The last explanatory variable is the summation of all the direct transfers expressed a proportion of total expenditure. In this case, we have not taken any time lag. We try to link the sum total of all direct resource

transfers expressed as a proportion of total expenditure with the growth rate of that year.

$$X_5 = \frac{P_t + S_t + C_t}{TE_t} \times 100$$

where P_t = Plan transfer for year t

S_t = Statutory transfer for year t

C_t = (Central Sponsored Projects + Central Projects) for year t

This variable will tell us the combined impact of different transfers during a particular year on the growth rate of that year.

4.1.3 The Equations:

We have two sets of regression equations

1) $Y_t = bo + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4$

2) $Y_t = bo + b_5 x_5$

The first set of equation is derived by multiple regression analysis and the second by simple bivariate regression analysis. By cross section analysis we get 15 equations for 15 years. In the case of time series analysis we get 15 equations for 15 different states.

For the second set of equation we have done only the

cross section analysis. Hence we have 15 equations for 15 years.

From the regression analysis we also get the correlation coefficients (r) and the coefficient of determination (R^2) values. While the correlation coefficient throws some light on the relationship between the dependent variable and the independent variable, the regression coefficient tells about the degree of their relationship in a cause-and-effect manner.

4.2 Correlation Analysis:

To find out the progressiveness of various types of central transfers we had employed the rank correlation method and the percentage deviation method in the previous chapter. We had divided the states into three categories on the basis of their per-capita income during the four middle years of our time period and linked it to per-capita transfers of various types during the three plan periods.

In this section we have linked the various explanatory variables of our regression model with the dependent variable through Karl-Pearson's Correlation Coefficients.

Table - 4.1

CORRELATION COEFFICIENTS

YEAR	r_1	r_2	r_3	r_4	r_5
1	2	3	4	5	6
1970-71	-.263	-.560**	.368	-.531**	-.412
1971-72	-.144	-.090	-.511*	.094	-.370
1972-73	.260	.543**	-.112	.430*	.649***
1973-74	-.192	-.373	-.051	-.179	-.319
1974-75	.240	.321	-.011	.290	.310
1975-76	-.433*	-.416	-.116	-.138	-.406
1976-77	-.168	- 349	-.081	-.538**	-.312
1977-78	.238	.105	.249	.188	.209
1978-79	-.109	-.115	-.217	-.313	-.181
1979-80	-.353	-.282	-.517**	-.209	-.565**
1980-81	.656***	.527**	.537**	.299	.733***
1981-82	-.135	-.193	.211	-.086	-.195
1982-83	-574**	.301	.112	.184	.597**
1983-84	.358	.386	.374	.161	.417
1984-85	-.520**	-.177	-.688***	-.371	-.498*

* = Significant at 10% level
** = Significant at 5% level
*** = Significant at 1% level
} two-tailed test

This will help us in knowing the nature of relationship that exists between each explanatory variable and the depehdent variable. So, the correlation Coefficient would tell us whether a high growth rate of SDP is associated with higher absolute transfers expressed as a proportion of total expenditure and vice-versa or, not.

Since, we have the sum total of all direct resource transfers we can analyse the relationship of transfers in their totality expressed as a proportion of total expenditure (X_5) with the growth rate of SDP, along with that of each type of transfer (X_1 , X_2 , X_3, X_4) with the aforesaid dependent variable (Y_t)

In Chapter-I, the table on the expansion of per capita income (Table 1.1) clearly showed that the income inequalities have widened. This implies that the rich states have a higher growth rate than the poorer states. So, a positive value of correlation coefficient implies a regressive pattern of central transfer, because a higher growth of SDP is associated with higher proportions of transfer and vice-versa. Similarly a negative value would imply progressiveness as a lower growth rate is associated with high proportions of transfer to total

expenditure and vice-versa. The values of different correlation coefficients are given in Table 4.1.

4.2.1 Growth rate and Plan Transfer

This transfer expressed as a proportion of total expenditure has been progressive, this speaks well for the poorer states, This is indicated by the fact that most of the correlation coefficients (i.e.r_1) is negative though not always statistically significant. The evidence of progressiveness is available in as much as in 9 out of 15 cases r_1 is negative. (Refer to r_1 in Table -4.1). In 1975-76, 1980-81 and 1984-85 r_1 is hot only negative but statistically significant also. However during 1980-81 and 1982-83 the correlation coefficients are not only statistically significant but also have high positive values.

4.2.2 Growth rate of SDP and Statutory transfer.

The transfers awarded by the finance commissions expressed as a proportion of total expenditure is more in the case of poorer states in most of the years. This is indicated by the fact that the correlation coefficients (r_2) are negative in most of the years. This reflects the facts that higher growth rates of SDP are associated with lower proportion of statutory transfer and vice-versa.

Just like r_1,r_2 is also negative in 9 out of 15 years, though not statistically significant. However it is indicative of the progressive trend of this particular type of transfer. The negative values of r_2 are generally high even when they are not statistically significant. But out of the three years in which r_2 is statistically significant, in two cases the correlation coefficient is positive. However, from this we should not jump on to the conclusion that the transfer was regressive in nature. Because these were deviations from the general rule and not the general trend as such. The values of the correlation coefficients (r_2) are given in Column 3 of Table- 4.1.

4.2.3 Growth rate of SDP and Schematic Transfer

Just like the above two types of transfers, this one also has nine negative correlation coefficients and six positive ones. But from this we should not conclude that the transfer is progressive all along the years. Though nine correlation coefficients are negative indicating association of higher growth rates with low proportion of central transfer and vice-versa, they have relatively low values compared with the values of r_1 and r_2. Many

among them are statistically insignificant and thus reflect a lower degree of progressiveness compared to the plan and statutory transfers. But, even this type of transfer was highly progressive during 1971-72, 1979-80 and 1984-85. For these years, the correlation coefficients were -.511, -.517 and -.688 respectively and were highly significant. Another statistically significant correlation coefficient (r_3) is .537 during 1980-81 reflecting the regressive character of the transfer during that year. For most other years, though r_3 is negative, their low value does not allow us to infer anything. But, we can definitely say that the other two types of transfers analysed earlier were more progressive in nature. This is in harmony with the conclusion that we derived from Chapter-III, while discussing the progressiveness of various types of transfers.

4.2.4 Growth rate of SDP and Per capita gross investment by non-departmental central enterprises

Unlike other transfers, we have taken investment in per capita terms as the explanatory variable. Here we have 8 out of 15 correlation coefficients for 15 different years with negative sign indicating progressiveness. However not all are statistically significant. The corre-

lation coefficients are statistically significant during 1970-71 and 1976-77. During 1972-73 we have a correlation coefficient which is not only statistically significant but positive also. This implies that high growth rate during 1972-73 is associated with high per capita gross investment. Progressiveness has declined during the later years as the absolute value of negative correlation coefficients has declined.

.2.5 Growth rate of SDP and total direct resource transfer

The correlation coefficient r_5 tells us whether the transfers in their totality were progressive or not. Though 9 out of 15 correlation coefficients are negative, not all are statistically significant. Transfers during 1979-80 and 1984-85 were not only negative, but also statistically significant. Thus transfers during these two years were certainly progressive. But, the same cannot be said of other years in which we also have negative correlation coefficients. However they indicate some amount of progressiveness. Out of the six years for which we had positive values for correlation coefficients(r_5) three are statistically significant. During 1972-73, 1980-81 and 1982-83 r_5 is positive with high values. A little scrutiny would tell us that during these years

r_1 , r_2 and r_3 were also positive and sometimes statistically significant. Thus more often than not, the transfers were progressive with schematic transfer being least progressive and statutory and plan being the most.

4.3 Regression Analysis:

We have run stepwise regression for the two sets of data. As explained earlier the values of the different regression coefficients tells us the impact of different types of transfers on the growth rates of per capita SDP. We have also run a simple regression analysis to find out the contribution of total direct resource transfer on the growth rate of per capita SDP. This is an improvement over the correlation analysis which onlytold us about the nature of relationship between the explanatory variables and the dependent variable and not the precise nature of cause and effect relationship. In other words whereas correlation coefficients told us whether or not, a particular type of transfer was progressive regression coefficients tell us about the impact of those transfers on the growth rate of SDP. We have used the step-wise regression analysis, and entered the explanatory variables sequentially and we have stopped where $\bar{R}^2$ stops increasing.

The section on methodology deals in detail about this and other statistical tools.

The symbols that will be used in this section may better be mentioned.

i) 'bo' for intercept and b_1 , b_2 , b_3 , b_4 , b_5 for coefficients of X_1 , X_2 , X_3 , X_4 , X_5 respectively

ii) R^2 refers to the quantity which gives the information about the proportion of the variation in dependent variable (γ_t = growth rate of per capita SDP) explained by the explanatory variables jointly. For a comparison between two R^2 S one must take into account the number of X variables present in the models. But, it can be done readily if we consider an alternative coefficient of determination. (Refer to methodology for formula and details). The R^2 thus defined is known as adjusted $\bar{R}^2$, because it is adjusted for the degrees of freedom associated with R^2.

iii) As explained earlier the two sets of equation are

$$Y_t = bo + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4$$

and $$Y_t = bo + b_5 x_5$$

For the Ist set we have both time-series and cross sectional equations, of 15 each. For the second set we have only 15 cross sectional equations. For the cross-sectional equations we have equations for each year whereas

for time-series we have equations for each of the 15 states.

4.3.1 The Hypotheses:

1) None of the five types of transfers (viz X_1 through X_5) has a significant impact on the growth rates of the states.

2) The impact of X_1 , X_2 , X_3 X_4 on the growth rate of the poorer states is insignificant.

4.3.2 Cross Section Analysis, MULTIPLE REGRESSION EQUATION:

Since the different explanatory variable (central transfer) and the growth rate are related through the total public expenditure we are interested in studying the magnitude of the influence of the explanatory variables on the growth rate of SDP by considering a linear relationship between them. We regress the dependent variable (growth rate of SDP) on the explanatory variables (transfers expressed as a proportion of total expenditure) in order to estimate the value of intercepts and coefficients of explanatory variables and also the value of the coefficient of determination (R^2) and adjusted $\bar{R}^2$. This method is applied to study the relationship between various explanatory variables and transfer variables in our study. We

Table -4.2

MULTIPLE REGRESSION RESULT
(Cross Section Analysis)

y_t = Dependent variable

Years	bo	b_1	b_2	b_3	b_4	R^2	$\bar{R}^2$
1970-71	12.491		.596	3.643	-.046	.578**	.508
			t=1.259	t=2.512	t=-1.017	F= 5.022	
1971-72	7.341			-2.299	0.018	.300	.246
				t=-2.234	t= 0.818	F= 2.572	
1972-73	-7.790		.947**			.295**	.295
			t=2.331			F=5.435	
1973-74	38.563		-.854			.139	.139
			t=-1.451			F=2.107	
1974-75	5.055		.314			.103	.103
			t= 1.221			F=1.492	
1975-76	7.403	-1.570*		2.769		.290	.235
		t=-2.162		t=1.314		F=2.450	
1976-77	13.389				-.041**	.290**	.290
					t=-2.303	F=5.302	
1977-78	6.874	.591	-.324	.519	.012	.135	.100
		t= .734	t=.739	t=.246	t=.702	F= .391	
1978-79	5.868				-.010	.098	.098
					t=-1.188	F=1.411	
1979-80	24.157	-.330*		-2.279**		.470**	.429
		t=-2.141		t=-2.798		F=5.322	
1980-81	- 4.433	.812*	.569			.479**	.439
		t=2.150	t=1.054			F=5.508	
1981-82	14.743	-1.246*		2.751*		.269	.213
		t=-1.922		t=2.031		F=2.212	
1982-83	7.086	1.265		-2.712**		.582***	.550
		t= 4.041		t=-2.688		F=8.344	

Contd.....

Table 4.2 contd

Years	b_0	b_1	b_2	b_3	b_4	R^2	$\bar{R}^2$
1983-84	8.935		.371 t=1.507			.149 F=2.272	.149
1984-85	23.512		.632** t=3.151	-3.867*** t=-6.262	-.015*** t=-4.210	.812*** F=15.787	.780

* = Significant at 10% level
** = Significant at 5% level
*** = Significant at 1% level.

two-tailed test

estimate the value of constant through cross-sectional study for 15 different years.

Taking b_1 into account we find that it is statistically significant (Refer to Table -4.2) only during five years i.e. during 1975-76, 1979-80, 1980-81, 1981-82, 1982-83. Thus we can reject our hypothesis about X_1 not having any significant impact on the growth rate of SDP in only 5 cases.

Our hypothesis stands verified in the rest of the 10 cases. Out of the five cases during which b_1 values were statistically significant only in two cases are they positive. In the rest of the cases, they are negative implying that plan transfers were a drag on the growth process during these years. However in two of these years in which b_1 was satistically significant as well as negative R^2 is not statistically significant. This prohibits us from making any outright comments on b_1 during these two years. But, in 1979-80 both b_1 and the corresponding R^2 are both statistically significant. In 1980-81 and 1982-83 both b_1 and R^2 are statistically significant and b_1 is positive.

To conclude we can say that our hypothesis about b_1 certainly holds good in as many as 10 years out of 15 years under study. In two years, though b_1 is negative and statistically significant R^2 is not . So, though the model is not a good fit, b_1 being significant as well as negative, is indicative of the negative impact of X_1 on the growth rate. But, in the rest of the three years our hypothesis does not hold good, that is X_1 affects growth rate as b_1 is statistically significant alongwith R^2. During 1982-83, b_1 and R^2 are significant at 1% level (refer to Table 4.2)

Since b_1 is positive (+ 1.265) we can say that plan transfer as a proportion of total expenditure results in a more than proportionate increase in growth rate. During 1980-81, b_1 is +.812 and for 1979-80 it is -.330. But, more often than not plan transfer has failed to have any impact on the growth rate of the states.

Similarly, b_2 is statistically significant in only two years. That is our hypothesis about X_2 (Statutory Transfers) stands good in 13 out of 15 cases. In the two cases where b_2 is statistically significant R^2 is also statistically significant. The years are 1972-73 and 1984-85 and the b_2 values are +.947 and +.632 respectively. So, statutory transfer expressed as a proportion of total expenditure had a significant positive impact on the growth rate of per capita SDP in two years. During the rest of the years its impact was inconsequential. Again its impact on the growth of SDP even when statistically significant is smaller than X_1 or, plan transfer as b_2 is less than b_1.

Considering the regression coefficients associated with the schematic transfer one comes across many negative and statistically significant values. Out of the 6 years

during which b_3 is statistically significant in 4 years we have negative values for the coefficient. The economic explanation is quite clear. Our hypothesis of schematic transfer not having any significant impact on the growth rate of per capita SDP stands good in 9 out of 15 cases. We reject the hypothesis in the other 6 cases. Out of these in two cases where b_3 is statistically significant R^2 is not. Though the model is not a good fit during these two years 1971-72 and 1981-82, b_3 or the regression coefficient being statistically significant is indicative of its definite impact on the growth rate. While in 1981-82, it had a significant positive impact during (+2.751) during 1971-72, it was negative (-2.299). In the other 4 years where b_3 is statistically significant we have negative values for 3 years. Thus, in most of the years where b_3 is statistically significant schematic transfers had a negative impact on the growth process. But, one thing that is clear is the fact that the impact of schematic transfer has been more clear than that of the other two types of transfers. This is indicated by the fact that the value of the coefficient is generally more than/2/ and sometimes even higher than /3/. During 1970-71 it was + 3.643 and in 1984-85 it was -3.867. In both the cases not only b_3 but also R^2 is statistically significant.

Now coming to the investment by central enterprises we find that the regression coefficient associated with it is statistically significant only twice. The values are negative with values of -.041 and -.015 during 1976-77 and 1984-85 respectively. This shows how little investment by central enterprises has affected the growth rates of the states. The impact of central enterprises has been inconsequential for 13 years and in the two years during which it is statistically significant the values are negative and too small. This reflects the sorry state of affairs in the central public enterprises in India. Public investment has been maximum in the poorer and mineral rich states like Bihar, Orissa and Madhya Pradesh. But, regional disparities has accentuated. Part of this can certainly be attributed to the poor wofking of central enterprises and its consequent negligible impact of the growth rate of the states.

The multiple regression analysis has significant values of R^2 in the case of 7 years. $\bar{R}^2$ is maximum (.780) during 1984-85 and the corresponding F value is significant at 1% level. This implies that the equation for 1984-85 is the best fit. Similarly in the equation for 1982-83 R^2 is significant at 1% level. In five other years R^2 is

significant at 5% level. In the rest of the 8 cases R^2 is not statistically significant.

So, more often than not, our hypothesis about the different types of tranfers not having any significant impact on the growth rate of states stands credited. In the cases where the coefficients and R^2 values are statistically significant the impact of schematic transfer on the growth rate is more pronounced and that of investment by central enterprises is the least. While in the case of plan and statutory transfers the impact is positive the schematic transfer seem to have been a drag on the growth process. The impact of investment by central enterprises has been inconsequential on the states' growth process.

4.3.3 Cross Section Analysis, SIMPLE REGRESSION EQUATION:

Till now we had analysed the impact of different types of transfer on the growth rates of the states. It is also important to know the combined impact of all the transfers on the growth rates. By total transfers we mean the total direct resource transfers. Like all other variables this variable is also expressed as a proportion of total expenditure. (X_5)

Table 4.3

SIMPLE REGRESSION RESULTS

y_t = Dependent variable = Growth rate of per capita SDP

Years	bo	b_5	R^2	$\bar{R}^2$
1970-71	20.645	-.400	.170	.170
		t= -1.631	F=2.659	
1971-72	11.654	-.257	.137	.137
		t= -1.436	F=2.062	
1972-73	-8.735	.491***	.421***	.421
		t= 3.072	F=9.435	
1973-74	37.722	-.431	.102	.102
		t= -1.213	F=1.472	
1974-75	4.715	.204	.096	.096
		t= 1.176	F=1.383	
1975-76	9.346	-2.54	.165	.165
		t= 1.603	F=2.568	
1976-77	13.302	-.163	.097	.097
		t= - 1.183	F=1.400	
1977-78	6.963	.103	.044	.044
		t= .770	F= .592	
1978-79	5.752	-.042	.033	.033
		t= -.663	F= .440	
1979-80	18,631	-.315**	.320**	.320
		t= -2.472	F=6.109	
1980-81	-10.608	.822***	.538***	.538
		t= 3.889	F=15.126	
1981-82	16.386	-.119	.038	.038
		t= -.718	F 0.516	

table 4.3.....contd.

Table 4.3 contd

Year	bo	b_5	R^2	$\bar{R}^2$
1982-83	-.143	.292**	.357**	.357
		t= 2.686	F=7.213	
1983-84	9.269	.165	.174	.174
		t= 1.654	F=2.734	
1984-85	15.069	-.286*	.248*	.248
		t=- 2.07	F=4.291	

* = Significant at 10% level
** = Significant at 5% level
*** = Significant at 1% level
} two-tailed test

To recapitulate the equation to be estimated is

$y_t = bo + b_5 \times 5.$

The coefficient b_5 would tell us about the combined impact of X_5. The values of the regression Coefficients are given in Table 4.3

The regression Coefficients are statistically significant in 5 cases. The corresponding R^2 is also statistically significant during these years. So, we can reject our hypothesis about total direct resource transfer (X_5) not having any significant impact on the growth rate of the states only in case of 5 years. Out of these in two cases b_4 is negative. This implies that direct total resource transfer had a negative impact on the growth process of the states during these two years namely during 1979-80 and 1984-85, although the values are not very high. However, in 1980-81 and 1972-73 b_4 is quite high and positive. They are +.822 and +.491 respectively. $\bar{R}^2$ is maximum during 1980-81. In other words the variations in the dependent variables is explained best in 1980-81.

4.3.4 Time Series Analysis, MULTIPLE REGRESSION EQUATION:

The time series regression equations allows us to analyse the impact of various types of transfers individually

Table - 4.4

MULTIPLE REGRESSION RESULTS TIME SERIES ANALYSIS

Y_t = Dependent variable = growth rate of per capita SDP

STATES	b_o	b_1	b_2	b_3	b_4	R^2	$\bar{R}^2$
ANDHRA PRADESH	65.055	-.522 t= - 1.184	-4.165*** t=-3.787	8.473*** t=4.660	-.073*** t=-3.990	.710*** F=6.127	.631
ASSAM	18.098	-.305 t= - .897	.019 t=.053	-1.112 t=-649	.015 t= .831	.089 F= .243	.160
BIHAR	12.318	-1.034* t=-2.101		2.999** t=3.122		.450** F=4.911	.408
GUJARAT	55.157	-3.807 t=-1.666			-.052 t=-1.261	.170 F=1.229	.106
HARYANA	10.819	-.014 t=-.021	.049 t= .041	-.451 t=-.203	-.001 t=.028	.015 F= .037	.254
KARNATAKA	20.624	-1.885 t=-.672	- .251 t=-.117	2.081 t=.804	-.004 t=-.097	.104 F=.289	.141
KERALA	-.110			2.868 t=1.910		.219 F=3.648	.219
MADHYA PRADESH	.502	.386 t=.151	-.526 t=-.154	2.675 t=.870	.003 t=.161	.071 F=.190	.183

Table 4.4 contd.....

Table 4.4 contd:

STATES	b_o	b_1	b_2	b_3	b_4	R^2	$\bar{R}^2$
MAHARASTRA	-4.759			5.724** t=2.774		.372*** F=7.693	.372
ORISSA	.099	.657 t=.940	-.130 t=-.194	.843 t= .461		.103 F= .288	.141
PUNJAB	7.101			.911** t=3.043		.416 F=9.262	.416
RAJASTHAN	32.911	2.310* t=1.921	-1.822* t=-2.136	-3.617** t=-3.115		.596** F=5.417	.529
TAMIL NADU	-10.490		1.307 t=1.246			.107 F=1.552	.107
UTTAR PRADESH	3.364			1.548 t=1.054		.079 F=1.111	.079
WEST BENGAL	- 5.717	.308 t= .780		2.836*** t=3.242	.021* t=1.977	.591** F=5.290	.522

* = Significant at 10% level
** = Significant at 5% level } two-tailed test.
*** = Significant at 1% level

on the growth rates of different states. The R^2 values are statistically significant in the case of seven equations out of a total of fifteen for all states. Three each belong to high income, middle income states and two to low income states. (Refer to the classification of the states into three different groups of Chapter-III). The regression Coefficients and R^2 values are given in Table-4.4

The three high income states out of a total of 5 of that category have R^2 values which are statistically significant. They are Punjab, Maharastra and West Bengal. In the case of all these states b_3 is also statistically significant and positive. This implies that schematic transfer had a significant positive impact on the growth rate of the states. All other transfers had no significant impact on the growth rate of the states. Only in the case of West Bengal, b_4 was statistically significant and positive (+.021). But, the magnitude is really small. Thus, in the case of West Bengal investment by central enterprises had a small but, positive and significant impact on its growth rate. Thus we find that in the case of the three high income states R^2 values are high and statistically significant. b_3 is positive in all the three cases and statistically significant explaining the beneficial

effects of schematic transfers on the growth rate of these states. b_4 is statistically significant and positive though low in case of West Bengal.

The three middle income states in whose cases R^2 is statistically significant the regression coefficients (statistically significant) are not always positive unlike the situation in the high income states. This indicates that not all types of transfers were necessarily beneficial for the middle income states. In the case of Rajasthan, the schematic transfer had a negative impact on the growth rate ($b_3 = -3.617$) of the states, while in the case of Kerala and Andhra Pradesh they are high and positive. In the case of Andhra Pradesh all the other three coefficients are statistically significant and negative with the impact of statutary transfer being the highest in magnitude, again, in the case of Rajasthan, plan transfer has a significant positive impact on the growth rate, while the impact of statutory transfer was negative. In the case of Kerala all the transfers with the exception of schematic transfer had no significant impact on the growth rate while in case of Rajasthan investment by central enterprises was unconsequential. So, in case of the three mid income states where R^2 is statistically significant namely Andhra Pradesh,

Kerala and Rajasthan not all the transfers had significant positive impact on the growth rate. While some types of transfers had a positive, some others had a negative or, no impact on the growth rate of the states. This is in sharp contrast with the high income states where all the statistically significant regression coefficients had a positive value.

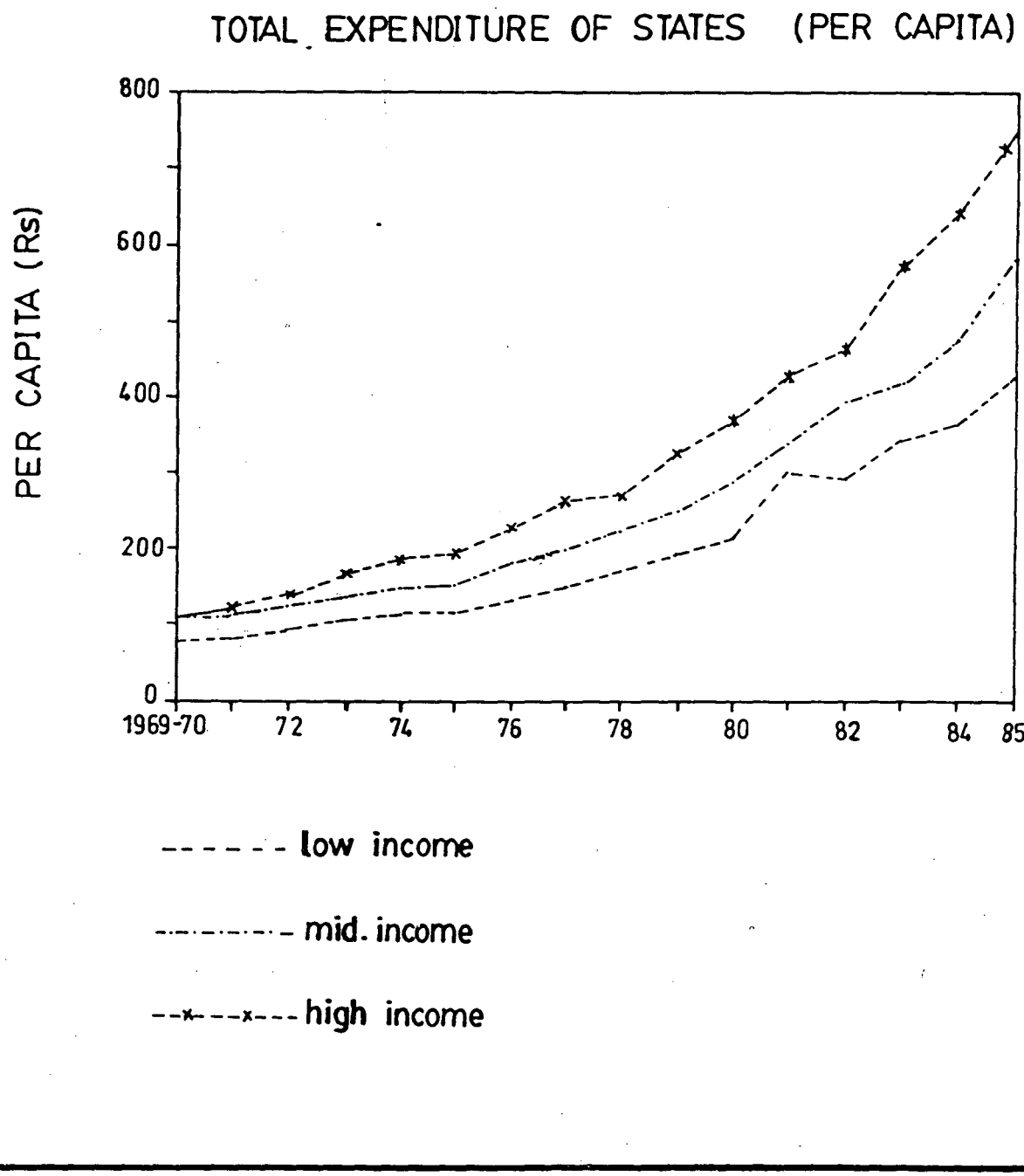
Only Bihar from the poor income states has a statistically significant R^2 value. While the impact of schematic transfer on the growth rate was positive the impact of plan transfer was negative. The coefficients of the rest of the transfers are not statistically significant. In the case of all the other poor income states, neither the regression coefficients nor the R^2 values are statistically significant. So, our hypothesis about different types of transfers having no significant impact on the growth rate of the poorer states stand verified in 4 out of 5 such states. Even in the case of Bihar, the impact of plan transfer was negative. Thus, there can be no denying the fact that the poorer states do not seem to have benefitted from central transfer, whereas some rich states do clearly seem to have benefitted from certain types of tranfer. The impact of central transfers on the middle income states

is a mixed one. While in the case of some transfers it is positive, in the case of some others, it is either negative or zero.

One of the reasons for the slow growth rate of the poorer states is their low per capita expenditure. Despite the progressive transfer of resources from the centre to these states, their per capita expenditure is much below the ones for high income and low income states, and over the years the gap has tended to widen. Graph 4.1, depicts the average per capita expenditure of the three groups of states. From visual examination of the graph, it is clear that the poorer states have lagged behind the high income states and the middle income states in raising own resources. But, this is understandable because the low income states being deficient in resource endowments have a low level of investment. What is needed is a large quantum of central transfer. But, during 1969-85 they have certainly not been adequate. Needless to say they had little or no impact on the growth rate of the poorer states.

The broad pattern of financial transfers that evolved itself over the years was that while the Finance Commission

GRAPH NO. 4.1


TOTAL EXPENDITURE OF STATES (PER CAPITA)
PER CAPITA (Rs)
800
600
400
200
0
1969-70
72
74
76
78
80
82
84
85
low income
mid. income
high income

tried to cover the non-plan revenue account gaps of the states, plan transfers sought to plug the plan gaps in the states resources.[26] This gap filling approach regardless of whether or not the state is poor, whether or not the state's expenditure commitments are higher or not, is bound to accentuate regional disparity. As long as there is a wide divergence between the per-capita expenditure levels the regional growth is bound to be uneven. So, the policy makers should try to equalise the expenditure levels rather than trying to fill the gap. The excessive weightage given to population rather than backwardness or SDP has helped in roughly equalising the per capita central transfers to various states, which is clearly inadequate to rectify the process of uneven regional growth.

4.4 Overview of Results:

For most of the years under study, central transfers were progressive. Schematic transfer was the least progressive and plan transfer was the most progressive. Our analysis shows that most of the central transfers had no significant impact on the growth rate of the states. The

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26 Gulati I.S., (ED.), "Introduction", Centre State Budgetary Transfer, Oxford University Press, 1987. p.13.

impact of investment by central enterprises was the least in magnitude and that of the schematic transfer was the most, though often negative, if we consider the statistically significant regression coefficients. From the time series analysis we learn that the impact of different types of central transfer on the growth rate of the poor states was statistically insignificant. This is so probably because over the years the per capita central transfers have tended to move in the direction of equalisation of per capita expenditure across the states, although wide divergences still remain in per capita expenditure levels. Thus the transfers have clearly been inadequate and have not been able to bridge the disparities among the regions. Therefore there is an urgent need for a departure from the gap filling approach and the undue importance given to the population criteria.

CHAPTER - V

C O N C L U S I O N

CHAPTER - V

CONCLUSION

In any developing country such as India market forces do not help in the reduction of income inequalities and regional imbalances. In the words of GunnarMyrdal, " If things are left to market forces unhampered by any policy interference industrial production, commerce, banking, insurance shipping and indeed almost all these economic activities which in a developing economy tend to give a bigger than the average return would cluster in certain localities and regions leaving the rest of the country more or, less in a backwater".[27] In India, inter-regional inequality assumes greater significance especially because more than half of India's population lives in states with per-capita income below the national average. Thus the correction of inter-state disparities desirable in itself is also a means for reduction of income inequalities. The rich states have more resources of their own in comparison to those in the poorer states and can tackle the problems of poverty and unemployment much more effectively even on their own. But, the poorer states require massive

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27 Quoted in Sinha R.K., Regional Imbalances and Fiscal Equalization, South Asian Publishers Ltd, 1984, P. 139.

inflow of resources for this purpose. And one of the main aims of central transfers was to help such states resolve the twin problem of poverty and mass unemployment. Our study has made a humble attempt to analyse whether this objective was fulfilled or not. In fact, the strength of the Indian fiscal system is that it provides mechanisms in the finance and planning commissions which can redistribute national resources between the centre and the states. In addition to this we have also taken into account schematic transfer and investment by central enterprises as resources transferred from centre to states. Though of an indirect nature the latter type of resource transfer is nevertheless important. On one plane we have tried to find out whether the above types of transfers were progressive in their inter-state distribution or not. We have used percentage deviation from average per-capita transfer to all states by different categories to each state during the different plan-periods of our study for this purpose. We have also elaborated by analysing the rank correlation between income and per-capita transfer. We have also taken the help of graphs illustrating per-capita transfer to the three groups of states by different categories. The

graphs reflect the trend of progressiveness or regressiveness, as the case may be, just as rank correlation reflects progressiveness or regressiveness, if positive or negative respectively.

On another plane we have tried to analyse whether and the extent to which these different types of transfers had any significant impact on the per-capita growth rate of SDP of the states or not. More specifically we are interested to know whether the transfers had any significant impact on the growth rate of the poorer states vis-a-vis the high income states or not. We have employed regression analysis for this purpose. While the cross section analysis gives us the impact of transfers of various categories on the growth rate of the states in different years, the time series analysis gives us their impact on the growth rate of individual states over the years of our study. The time period of our study (1969-85) covers three plan periods, i.e. the 4th, 5th, 6th plan periods.

5.1 SUMMARY OF CONCLUSIONS:

The major findings of the present study can be summarized as under:

5.1.1 The mechanism of resource transfer

1. The regional imbalances in India is a legacy that

we have inherited from the British. Thus there was a need for transfer of resources from the rich to poorer states by the centre. The constitution makers on the aftermath of the partition had visualised the need for a strong centre. The centralised bias of our federal polity can be traced to this historical fact. Over the years, this centralised fiscal bias has strengthened itself. But, unfortunately income disparity among regions has tended to widen despite the central govt being in a position to effect transfer in a more and more meaningful way.

2. That the centralised fiscal bias has strengthened itself, is reflected by the fact that there is a steady decline of resources transferred to states expressed as a proportion of resources raised at the centre. The implications are quite clear. The vertical imbalance has worsened.

3. The relative weights of various types of budgetary transfers have undergone a welcome dramatic change in favour of the statutory transfers since the close of the sixties. The relative weight of discretionary transfer has declined. Thus the ad-hoc nature of transfers has been

steadily reduced to marginal levels over the years. Finally the plan transfer has stagnated at around 30% of the total transfer.

4. The criteria adopted by the Planning Commission are guided by the Gadgil formula for the IVth and Vth plans and modified Gadgil Formula for the VIth plan.60% of the plan assistance is distributed among the states on the basis of population. The criterion for statutory transfer has also differed from time to time. 90% of the state's share of income tax proceeds has been distributed among the states on the basis of population during the entire time period of our study. From this it is evident that population has all along been a major criterion, while effecting inter-state distribution of the transferred resources from the centre. Unlike the period 1969-74, population criterion has ceased to be important in the case of sharing of the proceeds of excise duty during 1974-85. Various indicators of backwardness have got more weightage in case of excise duty than income tax and plan transfer.

5. Both the Planning and Finance Commissions have adopted a gap-filling approach, the Finance Commission

to fill the non plan revenue gap of states and the Planning Commission to fill the shortfalls in plan expenditure commitments. While plugging these two types of gaps they have not taken into account whether or not a state is poor and whether its expenditure level is relatively high or, not. Thus, by and large, the equalization of performance levels which would have helped reducing the disparities among regions has remained a far cry.

1.2 PROGRESSIVENESS:

Statutory Transfer:

1. Per capita statutory transfers have been the highest to the poor income states as a group followed by the middle income and then the high income states in that order. However it is important to keep in mind that the difference between them is not very significant. This is mainly due to the fact that very high weights have been assigned to the population criterion which is of an equalizing nature. The Vth plan period was most progressive in terms of per capita statutory transfer.

2. Although the poor states as a group has received more in per capita terms, yet the two poor states Bihar

and U.P have generally got less than the all-states average in per capita terms. Happily their position has somewhat improved during the subsequent plan periods.

PLAN TRANSFER:

1. Progressiveness is more pronounced in plan transfer than it is in the case of statutory transfer. The low income states as a whole have always received more than what the high income or the middle income states had received as a whole. Nevertheless, the fact cannot be denied that the mid-income states as a whole occasionaly received lower than the high income states, on per capita basis.

2. Just like the statutory transfers, plan transfer has not been very generous towards three of the poorest among the poor states. Thanks to the transfers to ORISSA and Assam, the poor income states as a whole have received more than the mid-income and high income states. Except during the VTh plan, UP has always received less than all-states average. Bihar and Madhya Pradesh have received per capita plan transfer less than the all-states average during all the three plan periods.

3. The introduction of Gadgil formula and the consequent

importance given to backwardness as a criterion in plan transfer is the principal explanation behind plan transfer being more progressive than statutory.

SCHEMATIC TRANSFER:

1. Schematic transfer has generally been more favourable to high income and mid-income states when we make a plan-wise analysis. Thus, it is less progressive than plan or statutory transfer. The generally ad-hoc nature of these types of transfers has rendered them regressive. Nevertheless, efforts seem to have been made during the fifth and particularly the sixth plan period to reverse this trend.

INVESTMENT BY CENTRAL NON-DEPARTMENTAL ENTERPRISES:

1. This type of investment has been higher in the low income states in relative terms. This is due to the fact that these states are extremely rich in coal and other mineral resources, and investment by non-departmental enterprises has largely taken the shape of extracting such natural endowments for larger national interests rather than consciously planned to boost the local growth prospects. Our conclusion is based on the fact that U.P. (which is

not as rich as Bihar) Orissa and Madhya Pradesh are far behind the all-states average of per capita investment in gross blocks. Secondly, investment in middle income states is appallingly low and very high even in case of West Bengal. From this, one can safely conclude that investment is confined to the coal belt and is motivated by factors not directly aimed at boosting up the forward and backward linkages of such central investments.

2. Investment in Maharastra during the period 1969-85 is higher than in any other state. This is reflected by the fact that from its rock bottom position in terms of cumulative investment, it gradually made its way to the top.

TOTAL DIRECT RESOURCE TRANSFER:

1. The total direct resource transfer has been progressive in the sense that poor income states have received more than high income and mid income states. Also, mid income states have received more than the high income states. The regressive schematic transfer has not been able to alter the over-all progressive situation because of its small share in the total direct resource transfer. Of course progressivity is not of a very high order.

5.1.3 Impact of central transfer on the SDP:

1. The correlation analysis strengthens the conclusions we had derived about the progressiveness of various types

of transfers.

2. Most of the central transfers had no significant impact on the growth rate of the states. Even when they had a significant impact, they were sometimes negative.

3. The impact of schematic transfer is most pronounced, while that of investment by central enterprises is the least.

4. In the case of plan and statutory transfers, the impact is positive while in the case of schematic transfers, it is negative if significant. The impact of central enterprises has been inconsequential on the growth process.

5. The combined impact of total direct resource transfer is mostly insignificant or negative.

6. From the time series analysis we find that the transfers had no significant impact on the growth rate of the poorer states. Only in the case of one poor-income state i.e. Bihar had schematic transfer some positive impact on the growth rate. This was in sharp contrast to the positive impact of schematic transfer on the growth rate of the high income states. Of course not

many transfers were statistically significant even in the case of high income states.

It seems the gap filling approach adopted by the two commissions and the undue importance given to population as a criterion has resulted in an almost equal percapita transfer to states. The inadequacy of central transfer has not been able to bridge the per-capita expenditure levels of different states. And as long as this gap is not closed regional disparity is bound to widen.

Secondly, the direct investment by the central enterprises which was supposed to liberate the poor states from the vicious circles of poverty, has failed in its attempt. What is worst, two of the poorest and the most populous states, i.e. U.P. and Bihar have always received even less than the average percapita transfer not to speak of equal per capita expenditure.

Considering these factors it is not surprising that the impact of various types of central transfers on the growth rate of the poorer states has remained negligible.

5.1.4 The Policy Implications

1. The policy makers would do well to look beyond the

criterion of population while making inter-state distribution of central transfers. Population being an equalising factor in nature cannot help much in reducing regional inequality. Instead, backwardness should be a major criterion. The undue importance given to population over backwardness renders even a progressive tax like income tax regressive in its actual operation especially in its inter-regional setting. Thereby poorer regions and hence most of the poorer people of India do not benefit much from this progressive tax.

2. The assistance for central plan schemes and centrally sponsored schemes has been found to be least progressive. This is due to the ad-hoc nature of this transfer. It would be better if they were guided by some sort of progressive formulas based on the different indicators of backwardness, and not geared to political considerations. It is indeed alarming that the discretionary transfer of which our schematic transfer is a part constitutes around 30% of the total budgetary transfer. Of course now-a-days some amount of schematic transfer too is being guided by the Gadgil Formula. Serious efforts should be made to drastically reduce the quantity of this type of transfer. Of course in case of certain projects, having inter-state implications or, of national importance,

schematic transfer is absolutely essential.

3. The central transfers are found to have failed to reduce regional imbalances. This is reflected by the fact that they had little or no significant impact on the growth rate of the states. Of course state domestic product depends on a number of factors such as the levels of investment, resource endowments, infrastructural base, capita-output ratio, tax efforts of the states, efficiency of the state government undertakings and so on. But this does not imply that central transfers have not failed to reduce regional imbalances. One thing is clear; the transfers have not been adequate. The poorer states have to be protected in a much bigger way. A piece-meal approach is not going to be the solution.

4. The resources transferred to the states as a proportion of revenue raised at the centre has shown a continuous decline over the years. There is an urgent need to reverse this trend.The other alternative is to do away with the centralised bias and give more financial autonomy to the states.

5. The policy makers would do well to dispense with the

gap filling approach of the Finance and Planning Commission. They should rather try to equalise the per-capita expenditure levels of different states. This would go a long way in reducing regional disparities.

6. One of the objectives of the planning process was to locate the public sector enterprises in backward regions. But, one of the major ills of Indian economy has been their poor performance. This has resulted in a drain of resources from the state exchequer and a high capital-output ratio. It is a matter of grave concern that the huge public sector investments have failed to generate adequate returns. The central non-departmental undertakings of our analysis which form part of the public sector units had a very negligible impact on the growth rate of the states. Efforts should be made to find out its cause and revitalise the enterprises. The commanding heights of the economy seem to have failed to deliver the goods. They were expected to be the pillars of our mixed economic system, and usher in an era of balanced regional development in due course of time. Their revitalisation has serious bearing on the reduction of inter-regional disparity.

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