PART II

COST OF EDUCATION

Chapter III

PUBLIC EXPENDITURE ON EDUCATION

Introduction

Part II of our work is on costs of education. It consists of two chapters.

(i) Public expenditure on education and

(ii) Private expenditure on education

Costs are treated here as equivalent to investment in education. The concept of factor or resource cost of education is followed to estimate the stock of human capital. The three components of factor cost of education are:

(i) Public expenditure on education

(ii) Private cost - tuition as well as non tuition costs of education

(iii) Earnings foregone by students, while choosing to go to school-the alternative of which is paid work.

The information on Public expenditure on education is readily available in the annual publication 'Education in India Vol. I-II' of the Ministry of Education, now Ministry of Human Resource Development. Expenditure on education available in a published form may better be termed as recorded expenditure on education. The recorded expenditure on

2 education is that incurred by the government or state on the one hand and that incurred on tutition, examination and other fees by private individuals. Information on non-tuition private expenditure on education is not available in a published form. So we treat this as non-recorded expenditure on education.

Public expenditure on education is classified into 'Direct' and 'Indirect' expenditure. Direct Public expenditure comprises of (a) Teachers' Salary (b) Salaries of non-teaching staff, (c) Maintenance of Buildings, Libraries, etc. It is mainly of recurring nature. Direct public expenditure is available by levels as well as stages of education and also by Sex-region for all years, whereas, for caste and management the break-up is not available after 1960-61. For the valuation of human capital stock such a detailed break up of educational expenditure is desirable. The variation in per pupil expenditure on education by sex, region, caste and management of educational institutions may reveal variation in quality of education, which in turn throws light on the quality of human capital stock so estimated.

Recorded indirect expenditure is not available by level of education. It is non-recurring expenditure which includes expenditure on buildings, libraries, equipments etc.

Education is financed both by the State as well as private individuals. So both are responsible for the

.3 formation of human capital through investment in education. We are interested in examining the role of both these agencies seperately in building up the stock. The reason is, education confers benefits both on the society as well as on individuals. Such macro objectives as redistribution of income, income inequality, reducing rural/urban differences can be attained not only by tax measures but also by expenditure on social inputs.

This chapter on public expenditure on education is divided into three sections as follows. First section is on trend in recorded expenditure by level and type of education. Second section examines the trends by sex and region and/the third section is on conclusions.

I

Trends in Recorded Expenditure

In Table 3.I we present the growth of direct and indirect expenditures in India during last three decades i.e., 1950-51 to 1979-80. From the figures, it can be seen that there is a prepondernce of direct expenditure. The total direct recorded expenditure was 902 millions in 1950-51 which went upto Rs. 28922 millions in the year 1979-80 i.e. the direct expenditure has increased by 3000per cent or by 30 times. The indirect expenditure which was 232 million in the year 1950-51 rose to 1686 million in the year 1979-80 a 627 per cent increase for the three decades.

Chapter : 3.I

Total and Per Pupil Recorded Expenditure on Education
(Public and Private)

Year	Direct Expenditure Rs. Million	Indirect Expenditure Rs. Million	Total Expenditure Rs. Million (2+3)	Per Pupil Direct Expenditure Rs.	Per Pupil Indirect Expenditure Rs.	Per Pupil Total Expenditure Rs. (5+6)
1	2	3	4	5	6	7
1950-51	902 (74)	232 (26)	1134 (100)	35.26	9.07	44.33
1960-61	2515 (74)	870 (26)	3385 (100)	52.62	18.8	70.75
1970-71	9328 (86)	1570 (14)	10898 (100)	113.61	19.12	133.0
1979-80	28922 (94)	1686 (6)	30608 (100)	268	15.6	283.60

Source : Various Volumes of Education in India - 1950-51 to 1979-80.

Note : Total Direct expenditure is inclusive of Private recorded expenditure like fees, endowments and other sources.

We have excluded expenditure on Pre-primary schools from total expenditure (Public & Private).

(Figures in brackets are percentages)

5 The share of direct expenditure of 74 per cent in 1950-51 increased to around 86% and 95% in 1970-71 and 1979-80 respectively. Naturally, the share of indirect expenditure which was 1/5th in 1950-51 was only 1/20th in 1979-80. These trends in direct and indirect expenditures are to be viewed in the context of the human capital stock to be estimated. What are the main components of these two types of expenditure? What could be their role in the formation of and growth of human capital stock? It is a common knowledge that the main component of the direct expenditure is salary expenditure comprising teaching and non-teaching staff. The quality of human capital stock is very much influenced by the teachers' salary expenditure. How far the increase in the salary expenditure is on account of improvement in the qualifications and in the training of teachers? And to what extent it is due to the increase in the number of teachers?

Indirect expenditure mainly takes the nature of non-recurring expenditure and includes expenditures on libraries, buildings, equipments, etc. The composition of indirect expenditure also has a bearing on the quality of education and consequently on human capital formed. The downward trend in this expenditure seems to be a cause for concern and apparently seems to have affected rather adversely the quality of education.

6 From decade to decade per pupil direct expenditure in money terms has increased from Rs. 35.26 per pupil in 1950-51 to Rs. 52.62 in 1960-61. In 1970-71, it was Rs. 113.61 and Rs. 268 in 1979-80 whereas the trend in case of indrect expenditure was uneven. Per pupil indirect expenditure doubled in 1960-61, than what it was in 1950-51. However, in 1970-71 it more or less remained at 1960-61 level and in 1979-80 it was much lower than those of the previous two decades.

The above increase in expenditures, total as well as per pupil, are at current prices and may be fictious. Thus, they need to be adjusted for the price rise. This is essential to estimate the human capital stock in real terms.

Direct expenditure or education is classified into government expenditure and private recorded expenditure. As is evident the share of public expenditure has steadily moved upward from 2/3rds in 1950-51 to approximately 9/10th (88%) in 1979-80 of the total expenditure. The share of private expenditure which used to be 1/3rd in 1950-51 was a little above 10 per cent in 1979-80. (refer table 3.II). These shares are worked out on the basis of published or recorded public and private expenditures on education. This may not necessarily give a reliable picture of the factor or resource cost of education which also includes non-tuition private cost plus earnings forgone.

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Table : 3.II

Total and Per pupil Direct Expenditure on Education
(Public and Private)

Year	Public Expenditure		Private Expenditure	
	Total (Rs. millions)	Per pupil (Rs.)	Total (Rs. millions)	Per pupil (Rs.)
1	2	3	4	5
1950-51	605 (67)	23.65	297 (33)	11.61
1960-61	1810 (72)	37.87	705 (28)	14.73
1970-71	7603 (82)	92.61	1725 (18)	21.00
1979-80	25421 (88)	235.40	3501 (22)	32.42

Note : Direct Public expenditure is total expenditure incurred by State governments, Central government District Boards and Municipal Boards.

Private expenditure is incurred by Private individuals on fees and other endowments.

(Figures in paranthesis are percentages)

Source : Various volumes of Education in India,(Vol.II) (1950-51 - 1979-80).

Table : 3.III

Direct Public Expenditure on Education - Total and Per Pupil By Level of Education

Year	Elementary		Secondary		Higher	
	Total (Rs. in million)	Per pupil (Rs.)	Total (Rs. in million)	Per pupil (Rs.)	Total (Rs. in million)	Per Pupil (Rs.)
1	2	3	4	5	6	7
1950-51	389	19.0	135	28.41	81	201.0
1960-61	959	25.74	585	60.92	266	270.60
1970-71	3863	63.02	2155	123.03	1586	482.21
1979-80	11925	153.81	7759	303.63	5737	1169.14

Source : Same as Table 3.I

9 Level-wise Public Expenditure

To estimate the stock of human capital we must know the expenditure incurred by the Government as well as private sources by level of education i.e., elementary, secondary and higher levels of education.*

According to Table 3.III we find that the government spent Rs.389 million on elementary education in the year 1950-51 which rose to a figure as high as Rs.11925 million in the year 1979-80. There is a continuous increase in the aggregate expenditure decade by decade. Per pupil expenditure also rose from Rs.19 to Rs.154 between 1950-51 and 1979-80 i.e., per annum it increased by 24 per cent. We find the same trend both in the case of secondary education and higher levels of education. But most striking feature is to know the proportion of each level of educational expenditure in total public expenditure on education. It reveals that the share of elementary education has declined whereas that of both secondary and higher levels of education has increased. In 1950-51 the share of elementary education expenditure in total expenditure was 64 per cent, that of secondary level of education expenditure it was 22 per cent and higher level of educations it was 14 per cent. This has changed in favour of secondary and higher levels of education i.e., by 1979-80 the share of elementary education in total expenditure came down to 48 per cent and that of secondary level it rose to

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* For our purpose we have classified educational institutions into three levels i.e., Elementary, Primary and Middle.
Secondary : Intermediate, Matriculation High/Higher Secondary
Higher : Degree, Diploma and Post-graduate education.

30% and in case of higher level of education it was 22%. This is something contrary to the government education policy to go for universalization of elementary education. This has led us to say that Indian educational system is top heavy.

Vocational/Professional Education

In the literature on manpower planning it has been frequently emphasized that one of the main constraints to economic growth in terms of GNP is the shortage of highly scientific or technically qualified manpower. This has a relevance to Indian planning also, since the goal of rapid industrialization can be achieved only by augmenting the stock of high level manpower. Thus, we have also emphasised in our educational planning the promotion of vocational/ professional education. India ranks quite high in the world in terms of scientific personnel. However, at the same time emigration of this high level manpower to developed countries of the world is considered as a brain drain or the reverse transfer of technology. In this context, it is better to estimate seperately this component in the stock of human capital.

The emphasis on the vocational and professional education can be easily seen with reference to enrolment and expenditure incurred. (See Tables 3.IV & 3.V). Enrolment in the higher vocational/professional educational

Table : 3.IV

Enrolment in Vocational/Professional Courses and Non-vocational/Professional courses at Secondary and Higher Levels of Education 1950-51 - 1979-80

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Year/ Enrolment	Secondary			Higher		
	Vocational	Non-vocational	Total	Vocational	Non-vocational	Total
1	2	3	4	5	6	7
1950-51	187 (4.0)	4564 (96.0)	4751 (100)	54 (15.4)	349 (86.0)	403 (100.0)
1960-61	401 (4.0)	9201 (96.0)	9602 (100.0)	194 (20.0)	790 (80)	984 (100.0)
1970-71	166 (1.0)	17350 (99)	17516 (100)	765 (23.0)	2524 (77)	3289 (100.0)
1979-80	320 (1.0)	25239 (99.0)	25559 (100)	830 (17.0)	4077 (83.0)	4907 (100.0)

Source : "Education in India" Vol. I Table 1 for respective years 1950-51 to 1979-80.

(Figures in paranthesis are per centages)

Table : 3.V

Public and Private (recorded) Expenditure on Vocational/Professional Courses at Higher Level of Education

(Rs. Million)

Year	Vocational			
	Public	Private*	Total	Per Pupil (Rs.)
1	2	3	4	5
1950-51	30	8	38	704
1960-61	113	24	137	706
1970-71	724	64	788	1030
1979-80	2255	172	2427	2924

Source : "Education in India" Vol. I and II, Government of India Publication : 1950-51 - 1979-80.

* Private expenditure is net of financial concessions.

institutions during the three decades of planning i.e., 1950-51 to 1979-80 as a proportion of enrolment of college and university education on an average hoavered around 1/5th. As against this, the corresponding proportion at the secondary school level works out to just 5 per cent for the same period. Similarly, the share of expenditure on higher professional education works out to 41 per cent. On the other hand, at the school level on ~~an~~ average we have spent around 11 per cent of the total expenditure incurred during the last thirty years of planning. Thus, it is clear that we have concentrated more on the production of high level manpower. Whether this kind of education policy followed is of right type or not? In this context, it is apt to quote Professor V.N. Kothari, "Another factor which inhibits the growth of employment is the rising supply price of investment in rural areas. Next to the increase in self consumption and building up of stocks by the farmers the items to receive attention are the accumulated repairs and maintenance expenses and additions to capital assets. For this purpose, a component of carpenters, masons, blacksmiths and technicians is needed which is in general short supply. A quickening in the tempo of rural investment leads to a rise in the wage rates of these skilled and technical workers. While inter generation handing over of skills was adequate for the needs of the self perpetuating circular flow economy, such is not the case in regard to a continuously expanding flow. While our educational system

12 has taken care of this problem in regard to the needs of highly trained manpower, in regard to intermediate skills the dificiencies are glaring. We have left this largely to the market forces. Thus, we have on the one hand excess supplies of unskilled labour and educated manpower and shortages of skilled manual and technical workers."[1]

II

Sex-wise and Region-wise Public Expenditure

In any economy where female education is neglected and which is theoretically emphasised for the augmentation of non-market production in the theory of human capital, it is the sex-wise differential in expenditure that should attract attention of the researchers while estimating the human capital stock. The relevant question is : what is the extent of sex-wise difference in expenditure? Is there a tendency of this expenditure to narrow over time? As per information given in Table 3.VI, in 1950s the difference was of the order of nearly 3 times in favour of males. It got widened in the next decade to around four times and in very recent decade of 1970s the differential was of the order of nearly 5 times. This has some serious implications in the estimation of human capital stock. First, though female education both in total population and in labour force has shown a relatively faster growth, the widening of per pupil sex-wise differential in educational expenditure is indicative of the qualitative differences in their education. One has to

Table 3.VI

Direct Public Expenditure on Education by Sex

(Rs. in million)

Year	Male		Female	
	Total	Per Pupil (Rs.)	Total	Per Pupil (Rs.)
1	2	3	4	5
1950-51	537	28.07	68	10.54
1960-61	1631	48.48	179	12.60
1970-71	6832	127.04	772	27.28
1979-80	22844	329.19	2577	66.67

Note : Expenditure on female students is taken from the Institutions for Women.

Source : Education in India Vol. I & II

13 take account of this fact at the time of the measurement of such a stock.

We talk a lot about sex-discrimination in human capital theory. Productivity of labour can be raised by investing more in human beings. In a competitive market persons are paid according to their marginal productivity so if we spend just 1/4th or 1/5th on female education than what we spend on male education, means we are investing less in females and they are bound to be less productive than male and will get less income. In this connection low wages of women are economically justified and it is not at all a case of sex-discrimination. Even then the question that is to be probed into detail is whether we spend generally so low on female education? Are our educational statistics so perfect? It is possible that we find female enrolment even in schools for boys and the proportion of enrolment of girls in schools mainly meant for girls is not that significant. In that case the figures given regarding sex-wise distribution of educational expenditure require further scrutiny before we infer anything.

Assuming that of the total girls enrolment more than 50 per cent of enrolment is in institutions for boys or where co-education is imparted, in that case per pupil male expenditure on education is at the same time per pupil expenditure on females and the question of sex-wise

14 differential in expenditure on education may not be that relevant. This may be correct for public expenditure. For private unrecorded expenditure the difference may be considered and that should get reflected in the sex-wise estimate of human capital stock. Of late, girls' education has been made tuition free through subsidized education.

Thus, equal amount of education in terms of years of schooling does not necessarily mean equal amount of investment in education in terms of money. Naturally then, the stock of human capital embodied by male and female is bound to vary.

Region-wise Public Expenditure*

Our education system is not only top heavy but biased against rural areas. Two indicators of bias are (i) enrolment of students and (ii) expenditure on education. The average urban enrolment during the period 1950-51 to 1979-80 has been around 30 per cent of the total, whereas average expenditure on education in urban areas has been 55 percent - twice the urban enrolment. Unlike this, the average shares of rural areas in enrolment and expenditure have been around 71 per cent and 45 per cent respectively

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* Note : Let us be clear at the outset that in the government publication "Education in India," separate information regarding urban areas is not available. We have subtracted the figures of 'rural' areas from the 'total' figures to arrive at figure for urban areas.

Table : 3.VII

Public Expenditure* by Region

Year	Rural		Urban	
	Total Rs. Million	Per Pupil Rs.	Total Rs. Million	Per Pupil Rs.
1	2	3	4	5
1950-51	382	21.22	223	31.85
1960-61	984	29.0	826	61.18
1970-71	3874	72.59	3730	154.13
1979-80	11522	155.68	13899	410.0

* Total Public expenditure is inclusive of both Direct and Indirect expenditure, since there is no separate Indirect expenditure is shown in the Vol. Education in India Vol. II, for rural areas.

Source : Education in India Vol. I & II

15 expenditure accounting for roughly two thirds of enrolment. This bias gets reflected in per pupil expenditure by region. Per pupil expenditure of urban areas has been two and a half to three times than that of rural areas (See table 3.VII). If the per pupil expenditure can be taken as an index of quality of education then the quality of human capital stock of rural population is bound to be inferior to that of urban population. In this context the earlier observed narrowing of educational distance between urban and rural areas loses much of its significance. The human capital stock embodied in rural people in terms of investment in education is much lower than that embodied in urban population. Apart from the production relations explaining the inequality of income between regions it is the large variation in the human capital endowment between regions should be considered as an important factor for the wide spread inequality. The duality of the Indian economy for instance, high and low per capita income of urban and rural population may also be explained in terms of the difference in human capital stock of urban and rural regions in the total capital stock. We are estimating human capital stock by region in order to provide an explanation for this inbuilt structural imbalance in the Indian economy. Furthermore, in the light of technological transformation of the rural economy that has recently taken place and the generation of employment opportunities outside agricultural sector may also require the estimation of human capital

stock by region. We have expressed our concern over the neglect of manpower imbalance between highly qualified and intermediate skilled manpower. It gets further strengthened in view of extremely limited enrolment of rural students in vocational and professional courses both at the secondary and higher levels of education. The question of providing relevant education to rural youth becomes important in this context.

(1) The trend in Public expenditure reveals that the share of direct expenditure has increased substantially where as that of indirect expenditure has fallen. This trend has a bearing on the quality of education and consequently on the quality of stock of human capital.

(2) Over the period the direct expenditure per pupil has increased in money terms, whereas per pupil indirect expenditure in 1979-80 was lower than the previous two decades.

(3) The level-wise trend in the government expenditure on education also shows that the share of elementary education has declined. As against this the proportion spent on two higher levels of education has gone up, indicating the top heavy character of our educational system.

(4) Regarding vocational and professional education it

17 can be noted that keeping in view the goal of rapid industrialization, we have given more attention to the development of higher professional education to meet the growing requirement of higher qualified manpower. At the college and university level, of the total enrolment the share of vocational and professional institutions was around 1/5th. At the secondary school level the corresponding proportion was just 5 per cent. Similarly, the share of expenditure incurred on higher professional education was as higher as 41 per cent, where as at the school level it was around 11 per cent. Thus, the focus was on the provision of highly technical qualified manpower and rarely on middle level manpower.

(5) The sex-wise trend in educational expenditure is disturbing. The differential in favour of male has widened from three times in 1950's to around five times in 1970's. This has some serious implication in the estimation of human capital stock. First though female education both in total population and in labour force has shown a relatively faster growth, the widening of per pupil sex-wise differentials in education is indicative of the qualitative differences in their education. One has to take account of this fact at the time of the measurement of such a stock.

.18 (6) The region-wise trend in public expenditure reveals a bias against rural area in terms of enrolment of students as well as expenditure on education. The average enrolment in urban area during the period 1950-51 to 1979-80 has been around 30 per cent of the total, whereas average expenditure on education in urban areas has been 55 per cent. Unlike this, the average shares of rural areas in enrolment and expenditure have been around 71 per cent and 45 per cent respectively. This bias gets reflected in per pupil expenditure by region. Per pupil expenditure of urban areas has been two and a half to three times than that of rural areas. If the per pupil expenditure can be taken as an index of quality of education then the quality of human capital stock of rural population is bound to be inferior to that of urban population. More about this will be seen in the chapter on the measurement of human capital stock.

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Reference

1. Kothari V.N. Presidential Address delivered at the 9th Annual Conference of the Gujarat Economic Association. Dahod Oct, 1977.