CHAPTER 10

SUMMARY AND CONCLUSIONS

The study makes an attempt at cost-benefit analysis of higher education in West Bengal. The objective of the study is to find out whether resources have been allocated efficiently to different types and levels of education in the State.

In this chapter we summarise the principal findings of our study along with the conclusions and their policy implications. The chapter is divided into three subsections, viz., (1) the main findings; (2) the policy implications and suggestions; (3) the limitations of the study.

The study is based on a sample survey conducted in Burdwan municipal area and in Durgapur town. The sampling design consists of two stages: (1) selection of universe, (2) selection of employees. The selection of the employees has been done by two-stage sampling. The population of employees has been divided into strata like banks, Life Insurance Corporation, general college, medical college, engineering college, hospital, State and Central Government offices, high and higher secondary schools, local bodies like municipality and zilla parishad etc. From each stratum some first stage units (banks, schools, colleges etc.) have
been selected by Simple Random Sampling without Replacement. Before second stage selection employees are divided into categories like managerial staff, office-assistants and group 'D' category staff provided their qualification is on or above 'Madhyamik' level. The category-wise lists of the employees, prepared according to their seniority in the concerned institutions, have been used to draw the sample of employees half-samplewise by circular systematic sampling.

The data have been collected in respect of education, age, sex, experience, nature of service, sector of work, earnings, private costs incurred for attaining the concerned level of education from 305 employees having different levels and types of education. For estimating institutional costs data have been collected from published records of government of India, published and unpublished records of D.P.I., West Bengal and income-expenditure accounts of different educational institutions.

For estimating the rates of return to different types and levels of education the benefits of higher education have been estimated with the help of age-earnings profiles of persons with different qualification groups. The consumption benefits of education and spillovers of education have not been included in the benefit-side of higher education as the researchers, have not been successful so
far to quantify these benefits. In the cost-side we have taken into consideration both the recurring and non-recurring costs and capital costs of different types and levels of education. The indirect costs of education, as reflected in foregone earnings of the students when they are engaged in study, have been included in 'costs'. The rates of return to different types and levels of education have been calculated through Internal Rate of Return formula as described in Chapter 2. The unadjusted marginal rates of return have been calculated for 'eleven' types and levels of education from social and private points of view. The private rates of return have been calculated by taking into account the post-tax earnings differentials between two successive levels of education and the private cost of the concerned higher level of education. The social rates of return have been calculated by taking into account the pre-tax earnings differentials between two successive levels of education and the social costs (Public costs + Private costs including foregone earnings) of the concerned higher level of education.

The adjusted marginal rates of return have been calculated for 'seven' types and levels of education by adjusting for the effect of socio-economic variables, demographic variables and job-related variables on earnings.
through multiple regression analysis. The effect of education on earnings is isolated here with the help of multiple regression. The rates of return are calculated in the similar fashion mentioned above.

10.1 Main Findings

The main findings of our study of cost-benefit analysis of higher education in West Bengal are stated below.

(1) The cost of medical education is the highest in relation to other levels of higher education in West Bengal. The cost of engineering education holds the next position. The ratio of public costs to social costs of professional education in the State is much higher than the ratio of private costs to social costs of those types of education (vide Table 5.4, Chapter 5).

(2) The earnings structure of the educated persons in West Bengal varies from sector to sector. The pay scales of banks, Life Insurance Corporation and some private firms are higher than the pay-scales of State Govt. and Central Govt. offices. The pay-scales of local bodies like 'Municipality' and 'Zilla Parishad' are the lowest. The professional graduates are underpaid in the State - their salary structure is not sufficient enough to cover the heavy costs incurred for these levels of education.
and this results in lower social rates of return to professional graduates in relation to general graduates.

(3) The age-earnings profiles in our study have the general characteristics of "well-behaved" profiles. If we compare the age-education-earnings profiles of West Bengal with those constructed by Blaug, Layard and Woodhall for India, it is found that our profiles show similar characteristics with a few exceptions.

(4) The effect of education on the earnings of the educated people in the State gradually increases as one moves up along the educational ladder. The socio-economic factors play an important role in determining the earnings of people in the lower levels of higher education. It is revealed from Table 7.5 that the effect of education on earnings of general under-graduates is 34.58% while the corresponding figures for general graduates, general post-graduates and general Ph.D. degree holders (i.e. M.A./M.Sc./M.Com., Ph.D.) are 55.26%, 59.65% and 59.83% respectively. Hence we can conclude that education emerges as the most dominant factor in determining the earnings of persons at higher level of higher education.

(5) If we go through the rates of return to different types
and levels of education in the State the following conclusions can be drawn:

(i) The unadjusted private rate of return to medical graduates (taking into consideration their actual income i.e. salary + non-salary income together) is the highest among all levels and types of higher education in West Bengal. Next comes the unadjusted private rate of return to engineering graduates. The private rates of return to general graduates and professional under-graduates (i.e. D.C.E./D.E.E./D.M.E.) are also quite high. The high private rates of return in the above-mentioned levels and types of education are due to heavily subsidised costs of education in the State. The high private rates of return to professional graduates and professional under-graduates induce the students to make heavy rush for admission to these courses. Since the seats are limited in these fields of education there is restriction on entry. All aspirants are not able to qualify for admission to professional education in the State. So a group of students from affluent families move to other States and take admission to professional courses by donating 'Capitation Fee' at high rates.

It is true that unemployment rate among the general educated persons is high in West Bengal. In 1992 the unemployment rate among the general pass graduates was 21.22%.
Inspite of a relatively high incidence of unemployment even for the better educated additional education upto degree level still remains a profitable investment for average parents. Psacharopoulos has pointed out that the phenomenon of unemployment lasts for few months/years at the beginning - so it may be termed as employment-searching period. This explains why supply has continued to grow faster than demand for a long-time.

A glance at the table for unadjusted rates of return for general education reveals that the social rates of return to investment in education declines steadily from general under-graduate level to general post-graduate with Ph.D. degree level, the general graduate level of education constituting the sole exception to the generalisation. The social rates of return to different types of education are not equal - it indicates that the pattern of educational investment is sub-optimal.

In case of professional education the unadjusted social rates of return to investment in education decline steadily from professional under-graduate level to professional post-graduate level.

(ii) The table for adjusted rates of return in Chapter 8 (Table 8.8) reveals that the rates of return to
medical graduates are the highest among all types and levels of education. Hence we can conclude that investment in medical education is the most profitable investment both from social and private viewpoint.

(iii) The main features that come out from our rates of return table are as follows:

(a) The rates of return decline as we move upward to the higher level of higher education.

(b) The private rates of return are higher than the social rates of return. But we should admit that social rates of return ignore the external benefits and spillovers of education as it is difficult to quantify these benefits. Hence our calculated social rates of return have downward bias.

(c) The unadjusted as well as adjusted social rates of return to professional graduates are lower than those to general graduates with the exception in case of adjusted social rate of return to medical graduates.

The low social rates of return to professional graduates are due to heavy public costs incurred by the State for these courses and longer duration of the courses.
This result should be interpreted with caution because of the limitations of the concept of rates of return analysis and various assumptions made for its estimation.

The rates of return to general and professional higher education in West Bengal have been compared with the similar rates calculated by different economists and researchers in India. The estimates of rates of return calculated by Husain (1967 and 1969) and H.N. Pandit (1972) for India and Sailabala Debi (1980-81) for Orissa show similar trend like our estimates. The comparison of rates of return of West Bengal with rates of return tables of different researchers in India and abroad has been presented in the Chapter 9.

10.2 Policy Implications and Suggestions

We have seen that the earnings structure in the State is unequal among different educated persons and among different sectors. The pay-scales of banks, Life Insurance Corporation are higher than the pay-scales in government offices. Again the pay-scales of Central government employees are higher than the pay-scales of State government offices and local bodies. The general under-graduates are low paid employees, government should try to raise their pay-scales.
The cost-benefit approach has a strong intuitive appeal among academic economists. Over the past twenty-five years a long list of objections has been directed at this approach as a basis of guiding decisions in education. This approach is unable to forecast and measure the benefits over life-time. For policy purpose we are in need of a measure of life-time productivity increases resulting directly from marginal increment in educational investment. The nearest we can get from this approach is earnings differentials derived from cross-sections of the existing work-force. It does not reflect the prospective experience of current graduates (say), nor does it reflect an accurate assessment of the experience of graduates (say) entering the labour market in future as a result of investment decision made to-day. Changes in supply and demand for differently educated groups will regulate the earnings differentials of different 'Education Groups' in future. Generally it is found that in most countries the rate of growth of educational outputs has increased faster than rate of economic growth and one can expect a downward pressure on rate of return over time. Hence Psacharopoulos and Hinchcliffe are of the opinion that "A low rate of return calculated with the help of cross-sectional data cannot be expected to be an underestimate of true life-time
So we can frame policy on the basis of rate of return analysis.

The comparison of private rates of return to different types and levels of higher education in West Bengal shows that the rates of return to lower levels of higher education are higher and the rate of return to medical education is the highest of all. This suggests that there is provision for reallocation of resources to those types and levels of education where the yield is higher.

The social rates of return to professional education are lower than those to general level of education. This is due to the heavy social cost of professional education. According to cost benefit approach, efficiency gains result from educational expansion if social benefits exceed the social costs (at an appropriate rate of discount). In this approach we want to establish a relationship between the costs of education and the resulting increased productivity of different education groups in whatever economic sector they work. In considering further expansion of education it is argued that if the rate of return is above the rate set as the criterion for government investment, this can be

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interpreted as a signal to expand, and if lower, as a signal for contraction. Our calculated social rates of return to all types and levels of education are less than the return from investments in physical capital. But this result should be interpreted with caution—because we know that social rates of return do not include external effects and spillovers of education in the benefit side as they are difficult to quantify. Hence the social rates of return have downward bias. So contraction of higher education on the basis of social rates of return will not be just. Before framing policy we should have to take into consideration the condition of labour market.

There is public pressure for expansion of medical graduate level of education, engineering graduate and undergraduate levels of education and general graduate level as the private rates of return to these fields of education are sufficiently high. At the time of policy framing the authority should keep in mind that technical and general curricula have their places in the development of a balanced educational system. Huge amount of public money is needed for making a 'Doctor' and an 'Engineer'. If the economy is in need of more doctors or more engineers then only expansion in these fields are justified. Otherwise the doctors and engineers will move to other States for job.
The large discrepancy between private and social returns to investment in higher education suggests that there is room for private finance at college and university level. A shift of cost burden from the State to the individual and his family is not likely to lead to a disincentive of investing in higher education. Bulk of the students in higher education come from the upper strata. So public subsidisation of students enrolled in higher education lead to accentuate income inequality in the country since there is a positive correlation between educational attainment and higher wages. A higher scale of fees should be supplemented by a liberalised scheme of scholarships available to those who win a seat in university or college but are unable to meet the expenses involved.

The growing incidence of educated unemployment in West Bengal, the relative decline in wages of graduates and movement of highly specialised personnel from this State to other States of India or outside India indicate that educational planning in West Bengal should be formulated with a proper mix of rate of return analysis and manpower planning. We need a strategy for human resource development so that the short-term and long-term disequilibrium in the demand and supply of educated man-power can be avoided. It is possible to keep a check on labour market for highly
qualified man-power by combining the man-power forecasting approach and social demand projection with rate of return approach.

In spite of its various limitations the rate of return approach is helpful as a criterion for efficient allocation of resources. We shall have to admit that the cost-benefit analysis of education directs the educational planners to allocate resources in different types and levels of education in an optimal manner.

10.3 Limitations of the Study

This study is not free from limitations. The study is confined to 305 employees working in different sectors in Burdwan municipal area and in Durgapur town. It was not possible for us to take a larger sample due to limited time and manageability of the work. We have concentrated on higher education only. Future studies can undertake primary and secondary level of education along with higher education. It has not been possible to include fringe benefits and other side-incomes to professional education at the time of constructing age-earnings profiles due to non-availability of proper information in all cases. The consumption benefits and spillover benefits of education have not been taken into consideration due to the difficulty of quantifying these benefits. So our rates of return have downward bias.
Another limitation of the study is that we have taken only five independent variables at the time of isolating the effect of education on earnings through multiple regression analysis - we have to do this due to small number of observations on the one hand and lack of sufficient information for all types and levels of education on the other hand. Due to lack of age and education specific mortality rate it has not been possible for us to make adjustment for mortality rate at the time of calculating rate of return.

There is scope for further research in this field by taking a large sample size and rates of return can be calculated separately for males and females, rural and urban population.