11-1989

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FINANCING HIGHER EDUCATION IN PAKISTAN

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Working Paper No. 3

November, 1989

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ABSTRACT

This study examines the income redistributional consequences of public financing of higher education in Pakistan. The results show that the tax incidence and the subsidy to higher education entail a redistribution from the middle and upper to the lower income groups. Earlier studies of other LDCs indicated a redistribution from the lower to the upper income groups.

Although many scholars have debated the redistributional consequences of public financing of higher education, few have analyzed this issue for less developed countries.[1] Focusing on Pakistan, this paper is relevant to it's educational planning since the need to offset subsidies to higher education with user fees has been noted in the last two Five Year Plans.[2] Investigating the soundness of this policy is a major objective of this paper.

The paper could be of wider interest for three additional reasons. First, it examines the equivalence of the two methods used to measure the redistributional impact of higher education financing.

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[1] The controversy started with the article by Hansen and

80 data). However, both the tax and enrollment structures have been stable enough so that the findings from this study could reasonably raise doubts about the current policy direction.

FINDINGS

The level at which income is aggregated is crucial in this analysis. The high level of aggregation used (low, lower middle, upper middle and high) results in a loss of information. However, it does average out to some extent the distortions resulting from a possible understatement of income, and also, the aggregate categories are more helpful for social analysis. The aggregation could have been done using criteria such as the income elasticity of the demand for food. However, given the public policy orientation of this paper it seems useful to adopt the income classifications used in government documents.

In table 1, the Fields method is used to estimate the redistributional impact of financing higher education in Pakistan. The relevant comparisons are between column 2, which shows the percentage tax contribution by income group, and column 3, which indicates the enrollment structure. The enrollment structure is assumed not to have changed significantly between 1979-80 and 1982 since the tax structure pertains to 1979-80.

TABLE 1

THE RELATIVE INCOME REDISTRIBUTION FROM GOVERNMENT HIGHER EDUCATION
FINANCING.

Income Group	T_i	E_i	BR_i
Low	11.3	37.1	3.28
Lower middle	49.6	32.6	.66
Upper middle	17.6	14.2	.81
High	21.5	16.1	.75

Notes. The categorization into income groups is based on Pakistan,
Household Income and Expenditure Survey (1983, p. xxvii). According
to this classification, 23.7, 56.7, 13.0 and 6.8 percent of the
population fall into the low, lower middle, upper middle and high
income categories.

Column 2, the tax contribution by income group was computed by
first multiplying the average income of different income groups with
the tax function by income group.[7] The product of the mean income
and the relevant tax rate is then multiplied by the percentage of
tax payers in each income group drawn from Pakistan, Population
Census (1984, pp. 77-78).[8] The income range for the highest income
bracket was arbitrarily assumed to be similar to the prior income
bracket since the highest income bracket is unbounded. Using the
given lower bound of the bracket, as Fields does, would dramatically
understate the tax contribution of the upper income group. The
procedure used here could still be understating the mean income of
the upper income group.

Column 3, the enrollment structure was drawn from the survey data
(see section 1).

Column 4, the benefits ratio is column 2 divided by column 3.

All calculations were conducted on the level of disaggregation of
the tax function (Appendix table I), and then aggregated as shown
above.

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[7]The tax function utilized was computed by Malik and Saqib
(1989, p.22), and the relevant table is reported in Appendix
Table I.

[8]Data were only available for working population so that is
assumed to represent tax-payers.

A comparison of columns 2 and 3 shows that higher education financing caused a dramatic redistribution from the upper and middle income groups to the lower income group. The tax contribution of the lowest income group was 11 percent whereas it accounted for 37 percent of the enrollment in higher educational institutions. The lower middle income group bore about half of the tax burden and accounted for only a third of the enrollment in higher educational institutions.

The findings from table 1 are confirmed using the Jallade method. As earlier indicated, the additional insight in Jallade's method comes from replacing the percentages in column 2 and 3 of table 1 with numbers, and therefore getting an indication of the actual magnitude of the redistribution involved as shown in table 2 below.

The lowest income category received an educational subsidy that amounted to about 14 percent of its total tax contribution. The subsidy to the middle and higher income groups ranging from one to seven percent of their tax contributions was much lower. As expected, the lower middle income group benefited least from the subsidy relative to its tax contribution.

TABLE 2

TOTAL TAX CONTRIBUTION AND SUBSIDY DRAWN BY PARTICIPANTS IN HIGHER EDUCATION BY INCOME GROUP

Income group	T_i	S_i	BR_i
Low	3625.2	494.3	.136
Lower middle	20660.8	235.8	.011
Upper middle	5422.5	387.8	.072
High	6599.2	214.5	.033

Notes: Column 1 is as in column 1 of table 1.
   Column 2, the total tax revenue of Rs. 30,722.3 million for 1979-80 has been allocated by income group according to the percentage tax distribution as in column 2 of table 1.[9]
   Column 3, the total higher education expenditure or subsidy (including expenditure on university, college and higher technical and professional education) of Rs. 1332.4 for 1979-80 has been allocated by income group using the enrollment structure as in column 3 of table 1.[10]
   Column 4, the benefits ratio, is column 3 as a percentage of column 2.

These results confirm those of table 1 in that they do show the greatest benefit from the subsidization of higher education accruing to the lowest income group and the least to the lower middle income group. However, the findings from both tables are contrary to the findings of earlier studies for LDCs, which suggest that federal

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[9]Pakistan Economic Survey (1984, p. 112)

[10]Pakistan Economic Survey (1984, pp. 228-229). All higher education expenditure is being considered a subsidy since the fee charged varies on average from one to two percent of only the recurring expenditure. Pakistan, Seventh Five Year Plan, (1988, p. 345).

subsidization of higher education entails a redistribution from the lower to the upper income groups.[11] Thus more needs to be said to account for this difference.

It is not difficult to mechanically explain the results. Given the enrollment structure and the tax function in Pakistan such results are inevitable. Most taxpayers were from the lower middle income categories (57 percent) whereas the tax function (see Appendix table I) approximates a proportionate tax structure except for small jumps in the highest two income brackets. This tax structure combined with the high enrollment ratios for the lower income group and the low enrollment ratio for the middle income groups (relative to the population distribution by income group) explains the direction of redistribution in table 1. Even though the upper income group was over represented in higher education relative to the population, its relatively higher tax rates than the other income groups resulted in a benefit ratio to it of less than one. More speculation is possible about the redistribution resulting from financing higher education in Pakistan.

The enrollment structure by income group reported in column 3 of table 1 is as accurate as the reporting of parents' income by students. The low enrollment ratio for the lower middle income

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[11] See the studies cited in fn. 1, particularly Psacharopoulos and Woodhall, (1985, pp. 140-144).

group could result if students in this group under reported their parents' income more than did the other income groups. One could expect under reporting on application forms since eligibility to apply for need based scholarships may depend on that. It is unclear whether the same pattern of reporting would persist in filling in a confidential survey questionnaire.

The middle income groups could be under represented because traditionally large numbers of middle income youth engage in self-employment, enter the family business or join the military; none of these activities requires a college education. The lower income groups may be over represented because they can rely on support from an extended family. Such financial support would not show up as income of parents. The upper income may not be as highly over represented in higher education as one might expect because increasingly larger numbers of children from higher income groups go abroad for higher education.

SUMMARY AND COMMENTS

One established method to compute the impact of public financing of higher education on the redistribution of income is based on comparing by income group the tax incidence with the higher education enrollments or subsidy. Using the tax structure for 1979-80 and the enrollment structure in higher education in 1981-82, it

was determined that the financing of higher education primarily

represented a redistribution from the middle and upper income groups

to the lower income group. Given the stability of the enrollment

and tax structures, these findings can raise doubts about the

current policy direction of eliminating subsidies and replacing that

with a user fee / scholarship scheme.

Pakistan is a highly stratified society with upward mobility

increasingly difficult. It seems safe to suggest, therefore, that

evening the odds to some extent by aiding competent candidates from

the lower income groups is desirable. This is currently being done

by a blanket subsidy to all income groups, which clearly is not the

most efficient way of doing it. However, in the social conditions

prevailing currently in Pakistan, a scholarship scheme targeted to

those who need and deserve aid may be subverted by favor seeking and

influence pedaling, although hard evidence on this issue is not

available. Therefore the evidence cited in this study about the

redistributional impact of financing higher education in Pakistan,

does suggests at least the need for further research if the stated

policy change is being seriously considered for implementation.

A preferable alternative may be a means test. Thus the subsidy

could be retained but students and their families would have to

demonstrate why they should not pay the full fee. It may be safer

to err due to misreporting than due to diversion of fellowships

given that progressive public expenditure may currently be the only achievable redistributive mechanisms in LDCs.

The subsidy received from enrollment in an higher educational institution is an incidental benefit. Most of the participants in higher education have their sights on the labor market. The static method of assessing benefits used in this paper is incomplete since it does not account for the differential future earnings by income group. Findings based on earning functions suggest family background may positively affect future earnings in Pakistan. Thus the static redistributive advantage in favor of the lower income group may be partially or wholly offset anyway.

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APPENDIX TABLE I
TOTAL PERCENTAGE TAXES DRAWN BY INCOME GROUP

Income group group (Rupees)	Percentage tax contribution
<3600	11.930
3600-4800	11.417
4800-6000	10.753
6000-7200	11.447
7200-9600	10.698
9600-12000	11.308
12000-18000	10.698
18000-24000	11.308
24000-30000	10.438
30000-36000	10.142
36000-42000	10.221
>42000	17.604

Source: Malik and Saqib (1989, p.22) The total tax contribution is aggregated using the following federal taxes: import duties, excise duties, sales taxes, surcharges, income tax, corporate profit tax.