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Financing higher education in India*

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Abstract. This paper is an attempt to analyse the present pattern of funding higher education in India and to discuss the desirability and feasibility of various alternative methods of funding the same. Higher education in India is basically a state funded sector. But as higher education benefits not only society at large, but also individuals specifically, and as it attracts relatively more privileged sections of the society, there is a rationale for shifting the financial burden to the individual domain from the social domain.

It is argued here that given the resource constraints and equity considerations, financing higher education mostly from the general tax revenue may not be a desirable policy in the long run. Accordingly some of the alternative policy choices are discussed, including financing higher education from the public exchequer, student loans, graduate tax, student fees, and the role of the private sector. Among the available alternatives, it is argued that a discriminatory pricing mechanism would be relatively more efficient and equitable. While given the socioeconomic and political realities, the government has to continue to bear a large responsibility for funding higher education, instead of relying on a single form of funding, efforts should be made to evolve a model of funding that provides a mix of the various methods. It is also argued that fee and subsidy policies need to make distinctions across various layers and forms of higher education.

1. Introduction

By the end of the 1980s, higher education in India has become one of the largest systems in the world, with about 10 million students enrolled in 188 universities and about 14 thousand colleges and with 400 thousand teachers. More than Rs.10 thousand million are invested every year in higher education, which forms 0.9% of GNP. Nearly one-third of the total education budget goes for higher education with about one-twentieth of the total student population in the country. In a developing country like India where universalisation of elementary education still eludes, and mass illiteracy is dominant, how is higher education financed? The paper discusses the pattern of financing higher education, the weaknesses therein and some alternative policy choices available for improving the financial situation of higher education, with least ill effects on equity and efficiency.

The following section briefly describes the growth of higher education in India and its contribution to development, measured with the help of the summary statistic of the rate of return. Sections 3 and 4 discuss the pattern of financing higher education in India: Section 3 concentrates on the pattern of incidence of fees and distribution of public subsidies, and Section 4 on the role of the private sector in higher education in India. Section 5 discusses various alternative choices available for augmenting additional resources for higher education. The paper ends with a

Table I. Growth of higher education in India

	Institutions	Enrolment in millions	Teachers in thousands	Expenditure Rs in millions
1950–51	843	0.42	24.4	171.5
1955–56	1252	0.74	37.9	283.8
1960–61	2185	1.10	62.2	544.7
1965–66	5820	2.09	128.4	1269.6
1970–71	7082	3.31	189.6	2791.2
1975–76	8514	4.44	236.1	4673.8
1980–81	9298	5.29	244.0	10532.0
Annual Rate of Growth (%)				
1950–51 – 1960–61	10.0	10.1	9.8	12.3
1960–61 – 1970–71	12.5	11.6	11.8	17.8
1970–71 – 1980–81	2.8	4.8	2.6	14.2
1950–51 – 1980–81	8.3	8.8	8.0	14.7

Source: Based on *Education in India* (New Delhi: Ministry of Education (various years)).

brief summary of the arguments made here.

2. Higher education and development

2.1. Growth in higher education

Table 1 sums up the growth of higher education during the post-independence period in India. It may be noted that the expansion of the system was tremendous and it conforms to the international pattern of high growth rates in the 1960s followed by declining rates of growth in the 1970s (Sanyal 1987). Physical expansion as well as financial investments follow the same trend. The expansion of the system was due to various considerations and compulsions. The objective of higher education development in India has been to promote and sustain self-reliant socioeconomic development. The higher rates of expansion of the system during the 1950s and the 1960s can be attributed to the requirements of manpower and also considerationis for equity. The employment prospects provided an initial enthusiasm to many to seek higher education. With the spread of unemployment in the 1970s the initial optimism and euphoria drained away and consequently the rates of growth of the system declined. Also the proliferation of the system led to erosion in quality. Accordingly consolidation of higher education became the major concern of the government. With further strains on the system, the government in the 1980s began encouraging open learning systems. Of late, the government is contemplating to delink degrees from jobs so as to reduce the rush to higher education in the formal institutions.

Higher education is imparted in India at various levels and types of formal education institutions, which can be classified as follows:

a) universities;
b) institutions recognised as 'deemed to be universities', that specialise in one major area, rather than being multi-faculty universities of general type;
c) institutions recognised as of national importance, such as the Indian Institutes of Technology, and the All-India Institute of Medical Sciences;
d) research institutions; and
e) institutions (colleges) for higher education, that can be further classified into
   (i) institutions of degree standard and above, i.e., degree and post-graduate colleges (referred to here for brevity as degree colleges), necessarily affiliated to universities,
   (ii) institutions below degree level (offering courses equavalent to diploma and certificate courses), and
   (iii) intermediate/pre-degree/junior colleges (referred to here as intermediate colleges), affiliated to either boards of intermediate education or universities.

While all these institutions can also be further classified into professional and general higher educational institutions, only *e-i* and *e-ii* are in practice classified into general, professional and 'other' types of colleges.

In terms of numbers, category *e* dominates the whole higher education scene. For instance, in 1983-84 the latest year for which these data are available, there were 14,000 colleges of category *e*, compared to 122 universities,and 69 other institutions. Even in the category *e*, it is *e-i* and *e-iii* that are quantitatively significant; they together comprise 85% of the total enrollments. 40% of the total enrolment is in *e-iii* category alone, a level equivalent of which forms a part of secondary education in several states in India, and in most other countries.[1] Hence it may not be either proper to aggregate all levels of higher education into one category, or to concentrate on one category and to refer to it as higher education for the purpose of policy formulation and planning.[2] Category *e-i* includes 'under-graduate' (first degree), and graduate (second degree or post-graduate) level of education. Graduate and post graduate education is also imparted in universities, deemed universities, institutions of national importance. Universities and deemed universities, in addition, are also involved in both basic and applied research, which is also the main function of categories *c* and *d*.

2.2. Rates of return

All layers of higher education have been found to be contributing significantly to economic development of the nation, but in various degrees. While there are a good number of studies on rates of return to investment in education in India,[3] very few of them estimated rates of return to the various levels and types of higher education separately. No study has estimated rates return exclusively to research.[4] Some of the available estimates are presented in Table 2.

These several estimates are not exactly comparable, as the estimates are based on different surveys conducted by different researchers and for different purposes and

Table 2. Rates of return to higher education (percent)

Reference	Source	Description	Rate of return	
			Social	Private
1950–54	Hussain (1967)	I Degree (General)	4.0	12.0
		II Degree (General)	3.0	10.0
		Higher (Professional)	3.0	9.0
1957	Harberger (1965)	Graduates & Post-Graduates over Secondary	16.9	...
1960–61	Nallagoundan (1967)	I Degree (General)	7.0	8.1
		Higher (Professional)	9.8	13.5
1960–61	Selowsky (1967)	I Degree (General)	11.6	...
		II Degree (General)	14.7	...
1960–61	Blaug *et al.* (1969)	I Degree (General)	8.9	10.4
		Higher (Professional)	12.5	15.5
		Engineering Diploma over Secondary	16.0-19.0	19.1-24.2
1964–65	Pandit (1972)	I Degree (General)	<5.0	9.2
		II Degree (General)	<5.0	6.7
		Higher (Professional)	<5.0	5.6
1965–66	Kothari (1967)	I Degree	10.0	14.0
		Higher (Professional)	22.0	25.0
1967–68	Goel (1975)	I Degree (General)	4.8	6.4
		II Degree (General)	8.6	11.7
1977–78	Tilak (1987)	Inter-Secondary	12.2	14.0
		I Degree-Intermediate	10.8	13.2
		II Degree-I Degree	10.3	11.5
		Higher (General)-Intermediate	8.5	9.0
		Higher (Profl.)-Intermediate	12.5	14.9
1980–81	Debi (1988)	Under Graduate (Gen)-Secondary	14.6	17.9
		Graduate (Gen.)-Secondary	20.0	25.8
		Graduate (General)-Under Graduate (General)	20.0	25.0
		Post Graduate General-Graduate General	11.7	13.2
		Under Graduate (Prof)-Secy	26.3	33.0
		Engineering-Secondary	13.0	16.6
		Engineering Graduate-Under Graduate General	10.4	12.8
		Medical-Secondary	13.9	16.7
		Medical Graduate-Under Graduate General	12.2	14.0
		Agriculture-Secondary	13.2	16.7
		Agriculture Graduate-Under Graduate General	10.6	12.9

Note: See Tilak (1987) for details on these several estimates, except the estimates by Debi (1988).

as they adopted different methods of data collection, and procedures of computation. They also refer not to the whole of India, but to various small and big regions in India, except a couple of them that used all-India (urban) sample surveys. Subject to such limitaitons, one may draw a few generalised conclusions from these estimates, as follows:

a) Investment in higher education in India is economically efficient, as the rates of return are fairly high, compared to alternative rates of return.
b) Higher education, like other levels of education, yields higher rates of return to the individuals, than to society at large, as after all, huge public subsidies make higher education more attractive to the individuals.
c) Unlike the general pattern of declining rates of return to increasing levels of education, observed in a cross section of countries (Psacharopoulos 1985), and even in India (Tilak 1987), within higher education second degree education yields higher rate of return than first degree. This is true both with respect to general and professional education. Thus the second degree forms a better terminal level of education.
d) Professional education carries with it higher rates of return than general education, which explains the maddening rush for admission into medical and engineering colleges, compared to arts and science courses.
e) However, there is not much difference between rates of return to various professional courses, such as engineering, medical, and agriculture.
f) Time trends in rates of return are not consistent, but seem to increase over time.

Thus, as the rates of return to various levels and types of higher education are varied, it is necessary for any meaningful and effective policy formulation and planning regarding financing of higher education, to examine the higher education system in India by disaggregating it, rather than looking at it as a homogeneous unit.

3. Financing higher education

The total recurring expenditure on higher education in India increased from Rs.172 million in 1950–51 to Rs.10,532 million in 1980–81, i.e., it increased at a rate of growth of 14.7% per annum. In real prices, the actual increase, however, was by 11 times only. In fact, recurring expenditure per student, declined in real prices between 1950–51 and 1980–81 by 10.5%, meaning that India spent much less per student in 1980–81 than she did three decades ago. However, in market prices, investment in higher education today is very large.

This investment in education flows from different sources, which can be broadly classified into governmental and non-governmental sources. The governmental sources include contributions from the federal, the provincial/state and the local governments. The non-governmental sources include contributions from students in the form of fees, other household expenditure on education and voluntary donations and endowments by the community, generally referred to as 'others' in

statistical documents of the Ministry (Department) of Education. Information on household expenditure on higher education is not available.[5]

A look at the expenditure on higher education by sources in Table 3 reveals some interesting features. During the three decades ending in 1980, the share of the government in total expenditure on higher education increased from 49% in 1950–51 to 78% in 1979–80. Correspondingly there is a decline in the share of all other sources. Local government bodies contribute an insignificant amount to higher education. Fee is an important non-governmental source of funding higher education in India, though its contribution is not very significant during the recent period. Fee includes all compulsory payments made by the students towards their education. It includes tuition fees and fees on account of various items like registration, admission, examination, etc. Total fees contribute a very small share of the total education expenditure in India. Fee is not an important source of funding in any publicly funded education system of the world.[6] It needs to be mentioned that fees and private contributions are the sole source of income in 'pure' private schools in India that do not receive any grants/aid from the government. The share of fees in total resources for higher education declined substantialy. In 1950–51 fee accounted for 36.8% of the total, whereas its relative share in 1979–80 was only 14.6%, i.e., a decline almost equivalent to one-third of its intial share. The share of 'other' sources also declined from 13.8% in 1950–51 to 6.9% in 1979–80, i.e., its relative share was halved. Thus over the years higher education in India is increasingly becoming a state funded activity.

The pattern of financing higher education does not seem to be very different between the several layers of higher education, as can be noted from Table 4. All institutions of higher education rely extensively on public funds. The reliance varies between 70% and 92% of their total (recurring plus non-recurring) expenditure. Institutions of national importance, that are involved in science and technology education and research activities, are probably understandably financed by the government to the extent of 92% of their expenditure. But surprisingly so are the colleges below degree level that provide diploma and certificate courses. Fee contributions are very small in general. So are the 'other' contributions to higher education, except in case of deemed universities, which receive nearly one-quarter of

Table 3. Expenditure on higher education in India, by sources (percent)

	Government	Local bodies	Fees	Others	Total
1950–51	49.1	0.3	36.8	13.8	100
1955–56	47.6	0.3	39.4	12.2	100
1960–61	53.1	0.4	34.8	11.7	100
1965–66	59.0	0.4	28.6	12.0	100
1970–71	60.4	0.5	25.5	13.5	100
1975–76	69.6	...	...	...	100
1979–80	77.9	0.6	14.6	6.9	100

Source: Education in India (various years).
Note: ... not available.

Table 4. Financing higher education in India, 1979–80 (percent)

	Government	Self (University)	Private sector		Total	Total (Rs in millions)
			Fees	Endowments & others		
Universities	73.6	2.9	13.4	10.1	100	2534.8
Deemed univs.	69.4	3.3	1.6	25.6	100	284.6
Inst. national imp.	91.7	0.0	3.5	4.8	100	474.9
Research insts	86.2	0.2	0.9	12.9	100	127.4
COLLEGES						
Degree & above	69.4	6.5	15.4	7.4	100	5174.9
Below degree	90.8	0.2	5.7	3.3	100	801.4
Inter.	77.8	0.3	12.1	9.8	100	225.8
Total	73.8	4.4	12.8	8.3	100	9623.8

Source: Based on *Education in India 1979–80.*

their total budget from the private sector in the form of endowments, donations, etc.

Among the different layers of higher eduction, per student fees in colleges is lowest, Rs.187.35 per annum. Within the colleges one finds that fee per student in

Table 5. Average fees and subsidies per pupil

	Fees	Scholarships	Total rec. expr.	Net fee Fee-Sch.	As % of rec. expr. per pupil		
	(Rupees per pupil)				Fees	Scholarships	Net Fees
Universities	1336.09	266.82	7484.45	1069.26	17.9	3.6	14.3
Deemed univs.	438.10	542.86	16000.00	-104.76	2.7	3.4	-0.7
Sub-total	1300.45	277.78	7822.37	1022.68	16.6	3.6	13.1
Insts. national imp.	1177.72	2658.67	25289.14	-1480.96	4.7	10.5	-5.9
Research insts	325.44	828.40	27485.21	-502.96	1.2	3.0	-1.8
Sub-total	1013.67	2306.38	25711.85	-1292.71	3.9	9.0	-5.0
COLLEGES							
Degree & above	211.95	9.20	1212.03	202.75	17.5	0.8	16.7
Below degree	90.88	108.50	1461.29	-17.62	6.2	7.4	-1.2
Inter.	71.60	47.04	373.68	24.56	19.2	12.6	6.6
All colleges	187.35	23.00	1169.75	164.35	16.0	2.0	14.1
Total	323.59	44.83	1614.67	278.75	20.0	2.8	17.3

Source: Based on *Education in India 1979–80.*

degree colleges is two and a half times that of below degree level and three times the intermediate level. Fees in the universities is more than six times that in the degree colleges (Table 5).

Apart from general (indirect) subsidisation[7] by government, keeping in view the equity considerations in a developing economy like India where about half the population lives below the poverty line, and general standards of living are low, there is need for direct subsidies in the form of scholarships, stipends and fee concessions. Available data on the expenditure on scholarships and stipends, indicate that a sizeable expenditure is incurred on such subsidies. However, these subsidies are not found to be in any way systematically related either to costs of education or to the fees. The subsidies are the highest in the institutions of national importance, and the lowest in the degree colleges. Scholarships meet a substantial part of the fees. In the deemed universities, institutions of national importance, and in research institutions, expenditure on scholarships exceed the revenue from fees. However, scholarships from a small proportion of total recurring exenditure on higher education. It is only in the institutions of national importance, and in the intermediate colleges, that a little more than 10% of the total expenditure goes for scholarships.

One can estimate 'net fee' per student by adjusting fees for scholarships to students, i.e., net fee equals fee minus scholarships. Table 5 shows that net fee is negative in many categories of institutions like deemed universities, institutions of national importance, research institutions and below degree level colleges. The fees in the institutions of national importance is high, but the scholarships are higher; hence the net fee is negative. But in the universities the net fees is quite high. In the intermediate colleges it forms a very small fraction of recurring expenditure. Net fee is the highest in the universities and is more than five times that in the degree colleges. But as a proportion of recurring expenditure, net fee in higher education as a whole forms only 17%.

A further disaggregation of fees in a few selected faculties is shown in Table 6. It

Table 6. Fees, scholarships, and total recurring expenditure per pupil in selected faculties in higher education, 1979–80

	Fees	Scholar-ships	Total rec. expr	Net fee Fee-Sch.	As % of rec. expr.		
	(Rupees per pupil)				Fees	Scholar-ships	Net fee
Arts & Science	199.82	67.20	923.51	132.62	21.6	7.3	14.4
Engineering & Technology	434.11	196.38	3597.93	237.73	12.1	5.5	6.6
Medicine	434.46	480.39	6244.14	-45.93	7.0	7.7	-0.7
Agriculture	406.94	322.01	6309.27	84.93	6.4	5.1	1.3
Business Management	994.04	377.73	18223.99	616.31	5.5	2.1	3.4

Source: Based on *Education in India 1979–80.*

may be noted that the fee per pupil is the lowest in arts and science faculties and the highest in the faculty of business management. Among the several professional and technical faculties, the fee per student is comparable. However, the net fee is negative in case of medical education and is the highest in the case of business management. If we consider the private costs of higher education based on net fees only, one finds that medical education is the cheapest, and business management education is the most expensive one.

Relative to the expenditure per pupil, the cost recovery from fees is the least in the faculty of business management, and the highest in the case of arts and science faculties. In fact, according to net fee, the recovery of costs is very small in all professional courses, and is negative in medical courses, compared to arts and science courses. It is well known that the student composition of the professional courses is mostly skewed in favour of better socioeconomic groups of population (see Tilak and Varghese 1985). Yet they are heavily subsidised. All these are, however, averages, and hence do not reflect individual differences based on the scholarships actually received and fees actually paid by each individual student.

What are the implications that we can draw from the above discussion? First, as fees remained unaltered and costs have been increasing, cost-fee differences have been widening over the years. Second, the incidence of fees is different among the different layers of higher education. Third, the incidence of fees within the same level of higher education is inequitably felt by different groups of students. Fourth, students in some of the professional courses like medicine, business management, agriculture and engineering, which are traditionally considered to be very expensive are relatively more subsidised compared to arts and science courses. Fifth, the fees and subsidies are not systematically related either to costs of education or to the economic conditions of the students. If the cost-fee differences are taken as an index of the amount of public subsidy, the above analysis calls for a fresh look at the very policy of public subsidisation of higher education in India. Perhaps from the equity point of view, a discriminate policy of fees and subsidies may be preferred to an indiscriminate policy.

How should the fee and subsidies be distributed? From the efficiency point of view, one can expect the public subsidies to flow relatively more to areas where the social rates of return are high. From the equity point of view, fee burden should be less in those areas, that are populated relatively more by the students of less privileged groups of the population. It may be difficult to combine the two criteria. But the evidence shows at least tentatively that the efficiency criterion is being more cared for in the case of fee and subsidy policies in higher education in India. It already has been noted in Table 2 that professional education yields higher rates of return than general education, and it is the professional education that is being relatively more subsidised by the government. However, as it is relatively the socially and economically better-off sections of the society who are the principal consumers of professional education, huge public subsidisation of professional education may be inequitable.

While empirical evidence is still awaited, it is believed that the social rate of return is higher for research than for higher education in general (Birdsall 1989). Fees in

research institutions are low in India and the net fees is indeed negative. So is the case of deemed universities that specialise in a given particular area. Given that research and development should be an important area for public investment, this pattern seems to be desirable. But the students in research institutions may also belong to a small privileged section of society. Hence indiscriminate public subsidisation of students in research institutions is also not justified from the equity point of view. Thus the issue of public subsidisation of higher education becomes complicated. All this suggests the need for selective and discriminate subsidisation policies, a proposal that is discussed later in detail.

4. The private sector in higher education

In a mixed economy where the private sector has contributed significantly to industrial and agricultural development, the role of the private sector in the field of higher education needs a detailed analysis, particularly when higher education is suffering due to paucity of resources. In this context, two aspects are important: the role of the private sector in financing higher education, and the role of the private sector in administration, planning and management of higher education.

Private colleges mean necessarily privately managed colleges and not necessarily privately funded colleges. About three-fourths of arts and science colleges and also three-fourths of intermediate colleges in 1983–84 were under private management. They include the ones aided by the government, and the unaided ones. Most private colleges in India receive nearly the whole of their expenses from the state exchequer. The fee contributions in the private aided colleges are however not high, as they are regulated by the government.[8]

There are a few private colleges recognised by the government that do not receive any state subsidy and are least regulated by public authorities; but they constitute a negligible proportion of the total number of colleges in the country.[9] Most private colleges which have been founded in the recent past are operated as commercial enterprises. They needed to survive for a few years before they could qualify, sometimes even retrospectively, for government aid and both during initial and later periods they could make profits by under paying teachers and other staff, charging various types of non-tuition fees, and through other undesirable practices (see also Mathew 1990). The undesirable practices are so high in India that one may rightly tempt to call these colleges 'bastard colleges' as they are illegally born to do legal activities, and/or legally born to do illegal activities (Singh 1983).

As a market response to the unmet private demand of the upper classes for higher education, there has been proliferation of private engineering and medical colleges in the recent period. These colleges receive little public support, but charge 'hefty' donations and capitation fees from the students. There are about 161 private engineering colleges in the country which charge either 'capitation' fees or a considerably higher tuition fee than the colleges run by the government (Shatrugna 1988, p. 2624). Engineering colleges in Maharashtra in 1989, for example, charge donations anywhere between Rs.50,000 and Rs.90,000. These are in addition to

tuition and other normal fees charged over Rs.8,000 per annum compared to Rs.500 in government colleges. Private colleges for general education, such as the 'parallel colleges' in Kerala, have also been operating on more or less the same lines. The tuition fees in these colleges are 2-3 times higher than in government colleges (Nair and Ajit 1984).

Thus the scanty evidence available indicates that private colleges both aided and unaided have grown largely in response to the prospects of making 'quick profits' (Nair and Ajit 1984, p. 1847), and for political power, and are detrimental to all but a few (Kothari 1986). As Nirmal Singh (1983, p. 74) noted, with lesser resource investment greater resources are brought under control of the private education enterprise for conversion into profit and power. That nearly 95% of the private colleges in states like Maharasthra are 'owned' by politicians suggests the extent of the political gains of private higher education. Private unaided engineering and medical colleges are allowed by the governments in Karnataka, Tamil Nadu, and Maharashtra, and recently in Gujart and Andhra Pradesh. With these private colleges, 'the system of interlocking interests of capital, educated elites, bureacrats and politicians is thus mutually supportive and complete' (Kothari 1986, p. 596).

In the final analysis, the ill effects of private colleges, particularly on equity, some of which are inherent in a private system, but many of which are attributable to the undesirable practices in India, outweigh the positive effects of private education. 'The objective of equal opportunities for education would be jeopardised in a big way. The overall effect would be to convert education into a force for reinforcing the existing stratification of the society' (Kthari 1986, p. 596).[10]

5. Alternative methods of funding higher education

Huge and indiscriminate public subsidisation of higher education in a society characterised by high levels of socioeconomic inequities on the one hand, and mass illiteracy and low levels of school enrolments, on the other, may be highly inequitable, as well as inefficient. The perverse effects of huge public subsidisation of higher education are well known (Psacharopoulos 1977; Blaug 1982). Low or no fees does not necessarily promote equity in access to higher education. It is argued sometimes that higher education in developing countries grows at the cost of primary education and literacy programmes. At the same time, it is also well known that both for qualitative and quantitative improvement, higher education requires significant increases in investment of resources. Given this, the need for augmenting additional resources for higher education without putting a strain on the resources of mass education is clearly evident. This section reviews quickly a few policy choices available regarding generating additional resources for financing higher education in India. The choices revolve around the three major partners of financing education, viz., the government, the students/parents, and the community at large. Let us briefly examine the possibilities and potentials of each of these partners in financing higher education in India.

i. Public financing of higher education

Higher education benefits society and hence there is always a case for society to spend on higher education. In fact, the whole idea of public spending on education in general, and higher education in particular, stems from the unquestionable understanding of the public good characteristics of higher education, and the externalities associated with it, besides the effect of higher education on growth and distribution and on overall development (see Schultz 1981). Public spending on higher education is also required so that economically unable yet educationally suitable students do pursue higher education. In the present juncture the share of the government in total spending on higher education has reached a stage beyond which it is difficult, if not impossible, for the government to sustain the present level of spending not to talk of increased spending.

If all students are subsidised out of general taxation, it may be equitable as it improves access to higher education and more people may be able to benefit from higher education in this pattern than in any other pattern. However, such an indiscriminatory public subsidisation may not be equitable. All those who are paying taxes may not necessarily go for higher education on their own or by their children. But the externality and public good arguments outweigh these arguments as, after all, the whole society benefits from higher education.[11]

But a more serious case for reducing public subsidies in higher education in India exists for the following reasons:

a) From the equity point of view, in India the underprivileged do not reach the higher education sector, as in many other countries (e.g., Hansen 1989). They wither away before they reach the tertiary levels of education. Higher education is found to be clearly benefiting relatively more the upper income groups (see Bhagwati 1973; Tilak and Varghese 1985). Therefore through the present pattern of public subsidy in higher education one cannot expect to cover the under privileged sections of society. Perhaps public intervention is needed more at lower than at higher levels of education. Added to this is the fact that the equity effects of public subsidies to higher education are less than expected.
b) From the economic efficiency point of view, as rates of return to higher education are found to be lower than the rates of return to primary and secondary education (Tilak 1987), and as it is believed that higher education expands at the cost of primary education, it would be necessary to reduce public subsidies to higher education and to reallocate them in favour of school education. This also becomes imperative, in view of the constitutional commitment to universalisation of elementary education.
c) It also becomes necessary as mainly public budgets for education are at best stagnant, and indeed declining in real prices, and more particularly in relation to other sectors of the economy. In the present context because of the financial constraints the government is not in a position to maintain, not to speak of increasing the present level of public subsidies to higher education significantly.

Therefore a case exists for reduction of public subsidies to higher education and a clear shift from public subsidies to private financing and cost recovery. Since private

benefits of higher education are high and they acrue to the individuals more than to the society there is a strong case for recovery of costs from the students in the form of fees and/or in the form of student loans, and from the users of graduates in the form of a graduate tax. First, the student loans.

ii. Student loans

Student loans are envisaged to support the costs of higher education by the students themselves in the long run. Theoretically emphasis on student loans is an attempt to shift the burden of investment from the present to a future generation. Normally the present generation undertakes investment activities and future generations benefit from them and further build on them. Generally out of the taxes paid by the present generation, children are educated, and the future generation benefits. Loans, on the other hand, require the students to fund their own education, but retrospectively. They pay later for the education they receive earlier.

A scheme of loan scholarships of national and state governments has been in operation in India since 1963, and curently about 20,000 scholarships are awarded every year at the rate of Rs.720-1750 per annum. The loan is recoverable in monthly instalments, one year after the graduate secures employment or three years after the completion of the studies. Some exemptions are also allowed with regard to repayment. It was originally anticipated that by setting up a revolving fund for 5-10 years, the scheme would be self-funding and would greatly reduce the burden on the government. But it did not happen.

The student loan programme in India is associated with a few major problems. First, psychologically loans are not welcome in Indian society. Graduates do not wish to start their careers with a burden of loan, and women graduates in particular dislike a 'negative dowry'.

Second, the credit market in India is not well developed to float educational loans.[12] The private financial institutions will seek security which the students may not be able to provide. Therefore public intervention is needed to give or guarantee assurance etc. for providing loan scholarships to the students.

Third, the rate of interest is also an important issue. Will educational loans carry the same rate of interest as in the case of other loans? In many developed countries student loans are either interest free or charge rates lower than the market rates of interest. The question is: will the private agencies in India be ready to provide student loans at less than market rates of interest?

Fourth, the former argument amounts to saying that the government intervention is essential to facilitate loan administration of loan scholarships. Invariably it may also lead to a position where the loans are to be funded and administered by the public authorities.[13] This may put further strain on the public exchequer in the short run, unless fees are increased significantly.

Fifth, unlike in the west, administration of loans has some peculiar problems specific to many developing countries. In many developed countries by providing student loans the government saves the resources which otherwise would have to be spent on social security systems and unemployment allowances and housing benefits.[14] And therefore, the real incidence of loan on the government purse is the

difference between the actual loan amount and the amount which would have otherwise been spent on social securities. In a country like India in the absence of social security schemes, the burden of student loans will be extremely high on the government.

Sixth is the question of repayment of the loan. Neither the Indian experience nor the international evidence in this regard is very encouraging. Excessive debt burdens and default rates have been a common phenomena. As Hansen (1989, p. 62) mentioned, 'student loan defaulters have become a major political issue in Washington in the past year because they now cost the federal government over $ 1.50 billion annually'. If this is the case in a country like the US where the administrative mechanisms to recover loans are somewhat efficient as well as well established, one can imagine the extent of recovery possible in developing countries like India. The Indian experience with the recovery of national loan scholarships to students is not at all encouraging.

Finally, when education does not guarantee employment and if repayment becomes conpulsory, people from relatively poorer sections will be worst affected. Further, unless student loans are accompanied by carefully formulated policies regarding fees, loans may aggravate inequities, the rich getting public subsidies through low levels of fees, and the poor paying back in full for their education. All this may lead to inequities in participation in higher education by these groups. The American experience clearly shows that increasing reliance on loan financing has contributed to the stagnation of enrolment of the minorities in the 1980s (Hansen 1989; p. 62). In all, access to higher education may be seriously reduced by student loans (see also Woodhall 1989b, p. 6).

iii. Graduate taxes

Yet another way of raising resources for higher education is through a graduate tax. A graduate tax is an education specific tax to be levied from those who use the educated manpower. Manpower produced by the education system is used by all sectors of economic activity. These sectors do not directly contribute to financing education although they are the direct beneficiaries in terms of the productivity gains on account of their employment of graduates. Hence there is every reason for these employers being asked to share the costs of the education of the graduates in the form of an annual tax for the graduates they employ.

There is another argument in favour of graduate taxes in India. India is a mixed economy where private and public sectors coexist. But the education system is largely publicly funded, and the human capital produced by it is used by both the public and private sectors in the economy. In fact, in the case of professional and technical manpower especially engineers, nearly one-third of the total employed manpower is in the private sector. The profits from these enterprises accrue to the private individuals. Just as the private enterprise pays interest for the physical capital, it seems justified to require the private sector to pay for the production of human capital, or interest on human capital, in the form of a graduate tax.

A graduate tax envisages that the employers would be asked to pay a tax annually for each graduate they recruit. The amount of tax to be levied needs to be based on

the cost of education and the number of graduates employed. And the duration of taxation should be long enough at least to recover the total costs of education.

Since the graduate tax is linked to the cost of education the rate of graduate tax also has to vary depending upon the type of graduates employed. In general, one can expect that the graduate tax for employing an engineering graduate will be proportionately higher than the same for employing a graduate in arts. Once the employers start paying the graduate tax regularly, the resources thus accruing to the education system can form a reliable and continuous source of financing education in the years to come.

The main drawback of the graduate tax, however, is that it might work as a disincentive to the employers to employ graduates. Depending upon the elasticity of substitution between several levels/types of graduates, employers may tend to employ a 'cheaper' graduate, or a secondary school product. All this may aggravate the problem of educated unemployment, unless the education-productivity relationship becomes very strong, and the elasticity of substitution between several types of higher education becomes less.

iv. Student fees

Unlike student loans, fee is a method of cost recovery where the incidence will be on the present generation. But unlike the graduate tax, the students or their parents pay fees while the students are in the colleges. The method of cost recovery through fees ensures equity on one count, namely the fee is charged only from those who are the direct beneficiaries of the system. But it may act as a negative factor adversely influencing enrolment from the relatively disadvantaged segments of the society.

The fee is not only low in India but has also remained almost unaltered over the years, and the costs of education have increased thus leading to an increase in cost-fee disparity. Therefore the fee should be enhanced in such a manner whereby the cost-fee disparities are reduced or at least maintained at a reasonable level. In India higher education is a favoured sector of the privileged. But this is not reflected in the pricing of education. The ability to pay of those who come to this level is much higher than what they are actually paying. Therefore, there are grounds for increasing the fee levels so as to tap the ability of the people to pay for higher education.

However, a uniform increase in fees may have adverse effects on the equity objectives. Instead, a discriminatory fee structure may be advocated. Discriminatory pricing minimises the perverse effects of public subsidisation of higher education reflected through uniform and low levels of fees. Indiscriminate public subsidisation is inequitable because the incidence falls heavily on the relatively less privileged sections. Therefore, to equalise the public subsidy a differential fee structure is essential.

The higher education sector in India has to be seen in a disaggregated fashion to implement a differential fee structure. There are different layers of higher education, as already noted. On the basis of the rates of return to different levels, one can argue that the absolute amounts of fees as well as the share of fee in the cost per student should be positively associated with levels of education within higher education. One has to decide normatively on the desirable levels of fees at each layer of higher

education. Discrimination also needs to be made between different courses, like general and professional courses. After all, the costs, the benefits and the student composition significantly differs between the general and the professional courses, and between several professional courses like medicine, engineering, and business management. Essentially under discriminatory pricing, students with different abilities to pay for higher education would be required to pay different levels of fees, say the richest income quartile paying 75% of the costs, the next richest quartile paying 50% of the costs, the third quartile paying 25% of the costs, and the bottom quartile paying no fees at all. These relative proportions have to differ for different layers of higher education. Further, a rational policy of pricing should be based upon the net fees. The existence of private benefits of education along with social benefits, provides no case to the net fee to be negative.

The basis for discriminatory pricing therefore should be (i) the cost fee disparity; (ii) the share of fee (taking into account net fee paid) to the expenditure per student across disciplines, and levels; (iii) perhaps more importantly, the family income of the students; and (iv) the likely benefits for a given type/kind of education.[15] However, discrimination of other kinds may not be desirable. For example, discrimination on the basis of merit of students (higher fees for students unsuitable for higher education and lower fees for academically suitable students) as suggested by some (Azad 1976) leads to deterioration in the overall quality of higher education; or discrimination in quality of education on the basis of fees paid (Stubblebine 1965) results in a dual system of education.[16] The suggested pattern of discriminatory pricing may be efficient as it provides additional resources and as it is related to costs of higher education, as well as equitable as students are charged according to their abilities, and according to their future likely benefits from their education.

6. Summary and conclusions

This paper is an attempt to analyse the present pattern of funding higher education in India and to discuss the desirability and feasibility of various alternative methods of funding the same.

Higher education is imparted in India in a variety of heterogeneous institutions, viz., colleges, universities, and institutions of various kinds; it includes various layers, viz., undergraduate, graduate, and post graduate including research; and it includes general, and professional including technical and technological education. The composition of the students in these various levels is also varied. Returns to these various forms of higher education are also different. Hence, a disaggregated examination of the financing pattern of higher education in India is attempted here, and it is suggested that for the formulation of meaningful policies, higher education needs to be subject to disaggregate examination by these layers and types of education. Specifically fee and subsidy policies need to make distinctions across the various forms of higher education.

Higher education in India is basically a state funded sector. The share of the state

in total funding varies from 70% to 90%, excepting the very few private unaided colleges that charge heavy donations or 'capitation fees', and very high rates of tuition fees. Given the undesirable practices that the private colleges follow, they cannot be regarded as a desirable, alternative and reliable form of funding. But as higher education benefits not only society at large, but also the individuals specifically, and as higher education attracts relatively more privileged sections of the society, there is a rationale for shifting the financial burden partly to the individual domain from the social domain. Accordingly the discussion in this paper centred around various alternative methods of funding higher education.

It is argued here that given the resource constraints on the one hand, and equity considerations on the other, financing higher education mostly from the general tax revenue may not be a desirable policy in the long run. Accordingly some of the alternative policy choices are discussed, including financing higher education from the public exchequer, student loans, a graduate tax, and student fees. The relative strengths and weaknesses of these methods are discussed in detail. Among the available alternatives, it is however argued that a discriminatory pricing mechanism that is sensitive to the costs of higher education on the one hand, and the economic ability of the students on the other, would be relatively more efficient in generating additional resources, as well as equitable by taking care of the interests of the economically weaker sections of society. However, given the socioeconomic and political realities, the government has to continue to bear a large responsibility for funding higher education. But instead of relying on a single form of funding, efforts should be made to evolve a model of funding that provides a mix of the various methods.

Notes

* This Paper was used as a background document of the 1990 Review Committee of the National Policy on Education 1986, Govt. of India, New Delhi.

1. Accordingly, they are not considered as a part of 'higher' education in India by the University Grants Commission. See also the Education Commission (1966, pp. 948–949) for a discussion on related aspects. This might result in some confusion while comparing data drawn from different sources.
2. Many studies on financing higher education concentrate on category *a* only. See Tilak (1988) for a review. See Amrik Singh (1985) who argues for separate treatment for under- and post-graduate courses.
3. See Tilak (1987) for a survey.
4. See Nair (1990) for a modest attempt.
5. See Tilak (1991) for some details on household expenditure on education.
6. Even in many OECD countries fee forms a small source of total income of higher education institutions: 2.1% in Australia, 4.7% in France, 12% in the Netherlands, 22% in USA (14.5% in public institutions), and 35.8% in Japan. See Williams (1990). See also Psacharopoulos *et al.* (1986).
7. General or 'indirect' subsidy can be defined as expenditure (recurring) per student minus fee per student, and 'direct subsidy' can be defined as to refer to scholarships, including stipends, and other kinds of direct financial assistance.
8. For example, in Orissa fee income formed only 10% of total expenditure of the private colleges and

it was 17% in Andhra Pradesh in 1980–81. However in some states the corresponding figures were quite high: 41% in Haryana, and 36% in Gujarat (Arad 1988, p. 31). A large part of the residual is met by the state exchequer. The problem lies partly in under-reporting. Mostly only the tuition fee and the examination fee is reported, and the rest might become a part of private profits.

9. It is not possible to state exactly how much of the financial support for private colleges in India comes from the private sector, as no country-wide data on private unaided colleges are available.
10. See also Tilak (1990) for more details.
11. See Windham (1976) who argues against the social benefits argument in relation to higher education.
12. Even in advanced countries the credit markets are 'bad'. It was found that 'education loans cannot work through private credit market' in the US (Tullock 1983, p. 144).
13. Even in UK the private banking sector withdrew from the whole scheme recently, and the government has had to take it over. *Education* (UK) 174 nos. 24–26, 22–29 December 1989, p. 542.
14. For example, Woodhall (1989a) estimates that the British Government would save £65 million a year on account of social security expenditure compared to an initial expenditure of £167 million on student loans. It was envisaged that when the loan repayments begin it will be sufficient to cover the costs of providing top-up-loans.
15. See Tilak and Vaghese (1985) for some elaboration on this issue of discriminatory pricing. See also Jimenez (1987), and Khadria (1990).
16. The 'capitation' fees colleges in India reflect such a form of discrimination.

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