GOVERNMENT EXPENDITURE ON ELEMENTARY AND SECONDARY EDUCATION IN DELHI FROM 1993-94 TO 2003-04

by

VIPIN P VEETIL

Preface

Both the importance of education and the poor standards of government schools in Delhi are well known realities. Often these obvious and correct observations serve as the basis to argue for increasing government expenditure on education. The perpetuators of this view, however, seem to assume that the poor quality of education in government schools is due to the paucity of funds. The aim of the paper is to study government expenditure on education in Delhi from 1993-94 to 2003-04, under various schemes, and on various groups, to challenge this assumption. The central problem is not of deficiency in the overall level of expenditure but of imbalances in the allocation of funds, lack of accountability in the flow of funds, and inefficient utilization of it. Therefore the focus of discussion and action should be on reforming the existing 'system of funding', and not on the 'level of funding'. It is imperative to adopt a system of *'education vouchers and cash subsidy'* to increase efficiency, only then would any increase in the level of funding (if necessary) result in further improvements.

The paper began as a statistical study, and was plagued with the paucity of data. However once the 'available' data was collected, the preliminary problem seemed to have been modest. The analysis of data was indeed a difficult task, to simplify which a number of assumptions have been made and stated throughout the paper. It is paradoxical that these assumptions abstract from complex realities and at the same time allow us to make valuable inference about the same. As I began analysing the data I came to realise that there were intricate realities hidden in them, the paper was a challenging journey to liberate these from the complexity of numbers to the simplicity of words.

I express my sincerest gratitude to officials of all ranks of the Directorate Education, Municipal Corporation of Delhi (MCD), New Delhi Municipal Council (NDMC), Department of Planning of Delhi, Delhi (New) Secretariat, National Institute of Educational Planning and Administration (NIEPA), and National Council of Education, Research and Training (NCERT), who provided valuable inputs.

I am thankful to Parth J Shah (President, Centre for Civil Society) and Naveen Mandava (Research Associate, Centre for Civil Society) for their intellectual inputs which were critical to the paper. I am indebted to Kanika Mahajan and Anil Ramaprasad for assisting in the gathering of data; and to Shruti Jairam and Tushar Madhav for their constructive & creative contributions and editing; all of which were vital at various stages of the paper. I am also grateful to *'Centre for Civil Society'* for providing me with a challenging and motivating summer research internship programme; and for their extraordinary patience, as the work took a good deal longer then they – and for that matter even I – had expected. I am thankful to my parents, friends and the entire CCS Team for their gracious support throughout the internship programme.

I immodestly think that the paper manages to deal with certain issue of relevance, given the time and data constraints. There are however bound to be a number of deficiencies, all of which are a result of my own inexperience & shortcomings. All views expressed in the paper are personal.

Vipin P Veetil

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Introduction

After the process of liberalisation and privatisation began in 1991 the government has withdrawn from the production of many goods and services where it was inefficient, moreover a number of regulations have been removed so that the private sector can play a dynamic role leading to rapid economic growth. Unfortunately, education is one sector where none of this has happened. The government continues to be engaged in a large scale production of the service of education.

Walls of University of Delhi are sprayed with slogans such as *"Stop WTO Dictated Privatisation of Education"*. And those with similar ideologies demand drastic increases in government expenditure on education so as to improve the terrible quality of government schools. In Delhi, various government agencies spend Rs 6000 - 12000 per government school student per annum, yet the quality of education is abysmal. The allocation, flow, and utilization of funds are all inefficient. Schemes such as non-formal education meant for the most needy (such as the street children) have not been delivered despite budgeting large amounts for it, sufficient resources are not allocated for female education because they are not a vote bank, and the government has not moved away from its 'central planning mentality' as it tries to produce *vocational education* so that demand and supply of skilled labour are matched. There is an urgent need to revamp the system of funding. Any discussion on the level of expenditure reforms to increase efficiency would be a complete waste of time as every extra Rupee spent under the current system is a Rupee wasted.

The first section of the paper calculates per student expenditures in state government, NDMC and MCD schools in Delhi and deals with the issue of efficiency of this expenditure. The division of government expenditure amongst females & males and SCs & Non-SCs is analysed with the prism of social optimality and the reasons underlying a skewed allocation is explained. A microeconomic analysis of introduction of education vouchers, along with certain relevant issue with regards to it is also presented.

The second section of the paper studies in trends in expenditure on education by various departments of the Government of Delhi and a number of important schemes are studied in brief. All growth rates are compound and in real terms.

SECTION 1

1.1 Real and Nominal Expenditure

While constructing time-series of expenditure on education, to study trends in resource allocation, it is necessary to adjust the nominal expenditure for inflation. The prices of educational inputs may be related to the general price level by the formula:

(Prices of educational inputs) = ε (general prices), where $\varepsilon < = > 1$.

Prakash and Choudhary (1994) argue that $\varepsilon > 1$ in the Indian case. They constructed educational price deflators from 1950 to 1986 and concluded, "The range and extent of variations of educational and general price deflators are significantly different". Tilak (1989) agrees as he states that it "is widely felt that there is no appropriate method of expressing the costs of education at constant prices because of the obvious problems. The commodities that enter the educational activity constitute a minor component of the basket of commodities…hence a general price index cannot serve the purpose adequately. The use of national or state income deflators generally adopted is only second best alternative".

The author was compelled to use *'Gross State Domestic Product at factor cost (GSDP$_{fc}$)'* deflator because of the paucity of educational price deflators for the period concerned, it may be noted that both NIEPA and NCERT use such general deflators in their studies.

Though the author is no expert on this issue, he, however feels that the use of GSDP$_{fc}$ deflator is unlikely to cause considerable degrees of error. Salaries constitute over three quarters of the expenditure on education, and even non-salary expenditure such as on mid-day meals, uniforms and others are generally on products of labour intensive techniques; therefore direct and indirect labour charges constitute a large portion of total expenditure on education. Incomes of various classes of workers are spent on various goods in the economy; hence a general price deflator seems to be a reasonable substitute to educational price deflators.

1.2 Nature of Expenditure

Directorate of Education, Department of Social Welfare, Department of Urban Development & Public Works, Municipal Corporation of Delhi (MCD), and New Delhi Municipal Council (NDMC), all spend on education in Delhi. Though it may be desirable to analyze expenditure on schools (I-XII) in terms of expenditure on elementary (I-VIII) and secondary (IX-XII) education to understand the allocation of resources between different layers of education, it is however difficult to do so with any degree of accuracy. The *'Detailed Demand for Grants of the Government of NCT of Delhi'* does have separate heads of expenditure on *'elementary education'* and *'secondary education'* by the Directorate of Education, but this accounting bifurcation is not reflective of the actual division. The Directorate of Education manages state government schools, which have both elementary and secondary classes. Recurring expenditure on these schools are classified as *'Government Secondary Schools' {A.2(2)(6)}*, under   *'Secondary Education'*, however, this head also includes expenditure incurred by these schools on elementary classes.

One may argue that this expenditure can be bifurcated using elementary and secondary enrolment as weights; however, this is not possible due to three reasons. Firstly, for years before 2002-03 the Directorate of Education does not have class-wise enrolment data of state government schools. Secondly and more importantly, bifurcation of expenditure by using enrolment as weights would entail assuming per student expenditure to be the same for both elementary and secondary classes, which would be incorrect, as the latter tends to be greater than the former. Also ratio between per student expenditure in elementary and secondary schools, from existing studies on educational expenditure, cannot be used as weights as the benefits of some expenditure, such as setting up of a drinking water outlet or an auditorium, are equally shared by all students. Thirdly, this particular problem persists not only with the head-*'Government Secondary Schools'*, but with a number of other heads also. According to senior officials in the Directorate of Education, due to operational reasons they would prefer to present their expenditure as a whole rather than '*elementary*' and '*secondary*', however the Planning Department insists on ear -marking certain portion of funds for elementary education every year. This problem is not unique to the Directorate of Education but also for the NDMC. Therefore, due to practical difficulties, the paper analyses the costs of schools education (I-XII) as a whole.

1.3 Per Student Expenditure

METHODOLOGY

Expenditure on:

elementary and secondary education by Directorate of Education[1] = x
elementary (entirely primary) education by MCD[2] = y
elementary and secondary education by NDMC[3] = z

Expenditure on:

elementary education by the Department of Social Welfare = s_1
secondary education by the Department of Social Welfare = s_2
elementary education by PWD[4] = p_1
secondary education by PWD = p_2

α_1 = elementary enrolment in state government schools as a percentage of total elementary enrolment in state government, MCD and NDMC schools

α_2 = secondary enrolment in state government schools as a percentage of total secondary enrolment in state government, MCD and NDMC schools

β = elementary (entirely primary) enrolment in MCD schools as a percentage of total elementary enrolment in state government, MCD and NDMC schools

γ_1 = elementary enrolment in NDMC schools as a percentage of total elementary enrolment in state government, MCD and NDMC schools

γ_2 = secondary enrolment in NDMC schools as a percentage of total secondary enrolment in State Government, MCD and NDMC schools

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Expenditure on state government schools = $x + \alpha_1 s_1 + \alpha_2 s_2 + p_1 + p_2$
Revenue Expenditure on MCD schools = $y + \beta s_1$
Expenditure on NDMC schools = $z + \gamma_1 s_1 + \gamma_2 s_2$

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[1] x includes *scholarships* and *mid-day meals*; and excludes *grants-in-aid to local bodies* (details in Appendix I)
[2] y excludes *grants-in-aid to private schools* (details in Appendix I)
[3] A portion of the expenditure by NDMC on *'Head quarters of the Department of Education of NDMC'* and certain other heads of expenditure, which are not listed under elementary or secondary education, are included in z (details in Appendix I)
[4] Both p_1 and p_2 exclude *grants-in-aid to local bodies*

Per student expenditure on schools managed entirely by

State government = $(x + \alpha_1 s_1 + \alpha_2 s_2 + p_1 + p_2)$ / enrolment in state government schools

MCD = $(y + \beta s_1 + a*)$ / enrolment in MCD schools

NDMC = $(z + \gamma_1 s_1 + \gamma_2 s_2)$ / enrolment in NDMC schools

Data on Capital Expenditure by the MCD on education is not available. On the average, from 1998-99 to 2003-04, capital expenditure is about 9.5% of the revenue expenditure on state government schools. We assume the same ratio to be true for MCD schools for all years from 1998-99 to 2003-04, and adjust (a) the expenditure of the MCD accordingly.

Table I: Per student *Actual* expenditure on state government schools at current prices

Year	Directorate of Education (Rupees)	By ALL Departments (Rupees)
1998-99	8560	9200
1999-00	8650	9270
2000-01	8300	8910
2001-02	8110	9400
2002-03	8010	8670
2003-04	7780	8700

Table II: Per student *Budget Estimates* on state government schools at current prices

Year	Directorate of Education (Rupees)	By ALL Departments (Rupees)
1998-99	6680	7220
1999-00	10600	11720
2000-01	10580	11390
2001-02	9410	10320
2002-03	8400	9140
2003-04	8150	8810

Table III: Per Student *Actual* revenue expenditure on MCD schools at current prices

Year	Directorate of Education (Rupees)	By ALL Departments (Rupees)
1998-99	3650	3650
1999-00	4410	4410
2000-01	3930	3940
2001-02	3690	3700
2002-03	4080	4100
2003-04	4310	4330

Table IV: Per student *Actual* (adjusted) expenditure on MCD schools at current prices

Year	MCD Revenue (Rupees)	MCD Total (Rupees)	By ALL Departments (Rupees)
1998-99	3650	3990	4000
1999-00	4410	4830	4830
2000-01	3930	4310	4320
2001-02	3690	4040	4050
2002-03	4080	4470	4490
2003-04	4310	4710	4740

Table V: Per student *Actual* expenditure on NDMC schools at current prices

Year	NDMC (Rupees)	By ALL Departments (Rupees)
2000-01	8490	8500
2001-02	8430	8440
2002-03	10070	10090
2003-04	11410	11430

Table VI: Per student *Budget Estimates* on NDMC Schools at current prices

Year	NDMC (Rupees)	By ALL Departments (Rupees)
2000-01	10120	10140
2001-02	10160	10170
2002-03	11820	11840
2003-04	12400	12430

Graph 1.1

Graph I: Per Student Expenditure in 1993-94 prices
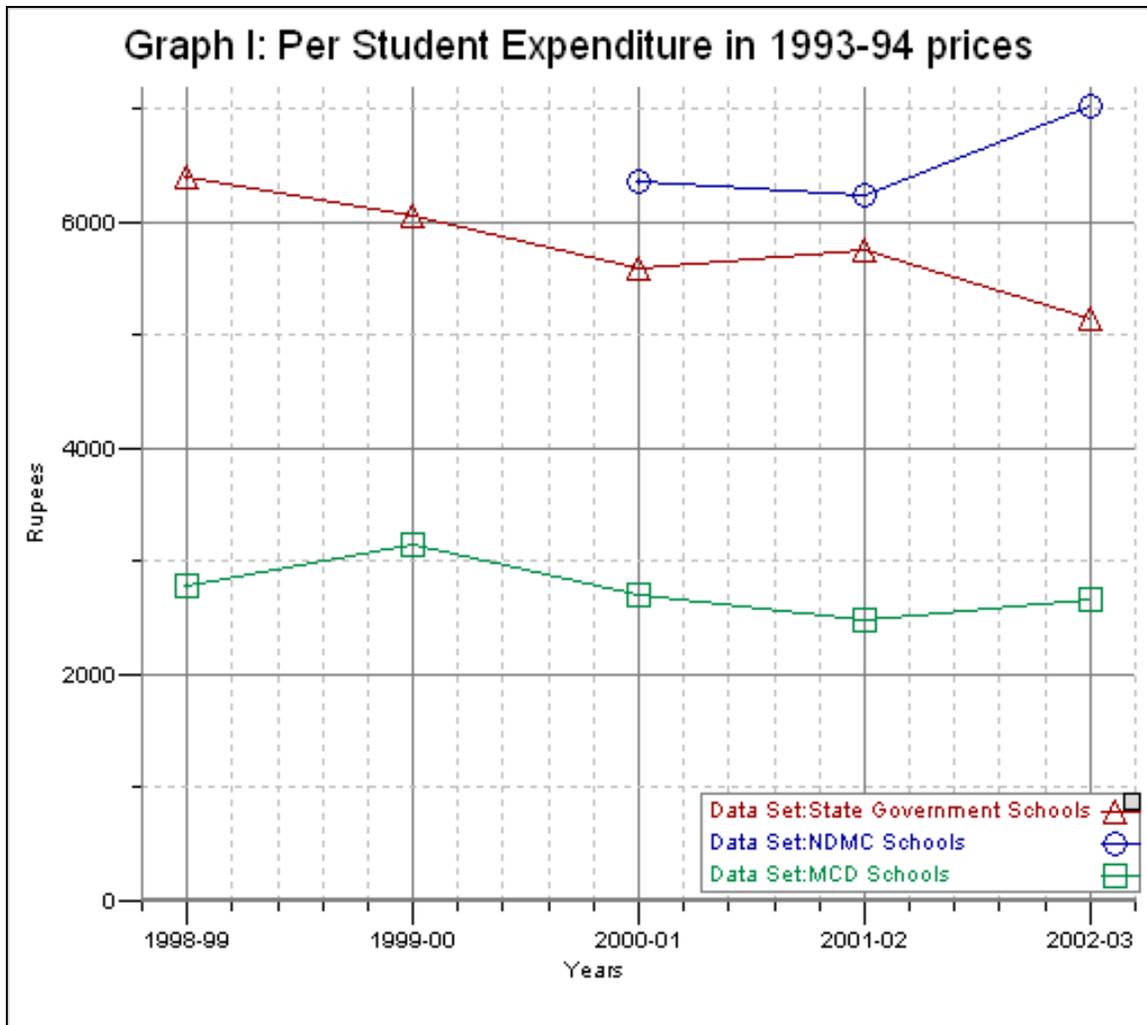
1.4 Per Female and Male Student Expenditure

<u>METHODOLOGY</u>

n_t = total enrolment
n_f = female enrolment
n_m = male enrolment

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y_t = total expenditure on education
y_f = expenditure on schemes exclusively for females
y_m = expenditure on schemes exclusively for males
y_c = expenditure common to both males and females = $y_t - y_f - y_m$

Assuming that the common expenditure is equally shared by males and females

F = total expenditure on females = $y_f + (y_c)(n_f/n_t)$
M = total expenditure on males = $y_m + (y_c)(n_m/n_t)$

Per female student expenditure = F / n_f

Per male student expenditure = M / n_m

Table[5] VII: Per student *Actual* expenditure in 2003-04 at current prices

Gender	Directorate of Education	All Dept.
Female	7900	8820
Male	7730	8640

Table[6] VIII: Per student *Budget Estimates* in 2003-04 at current prices

Gender	Directorate of Education	All Dept.
Female	8280	8930
Male	8090	8750

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[5] Enrolment data of state government schools divided into male and female categories is available only 2003-04 onwards, hence per student expenditure on gender basis is calculated only for that year.
[6] Department of Social Welfare and Department of Urban Development & PWD do not operate any schemes exclusively for males or females in elementary and secondary classes. Therefore, the difference between overall per student expenditure by the Directorate of Education and by All Departments is the same as the difference between per female/male student expenditure by the Directorate of Education and by All Departments.

1.5 Per Scheduled Caste and Non-Scheduled Caste Student Expenditure

METHODOLOGY

y_t = total expenditure on education
y_{sc} = expenditure on schemes exclusively for SC's
y_{non} = expenditure on schemes exclusively for non SC's
y_c = expenditure common to both SC's and non SC's = $y_t - y_{sc} - y_{non}$

n_t = total enrolment
n_{sc} = SC enrolment
n_{non} = non SC enrolment

Assuming that the common expenditure is equally shared by SC's and non SC's

S = total expenditure on SC's = $y_{sc} + (y_c)(n_{sc}/n_t)$
N = total expenditure on non SC's = $y_{non} + (y_c)(n_{non}/n_t)$

Per SC student expenditure = S / n_f

Per non SC student expenditure = N / n_m

Table IX: Actual expenditure by all departments in 2003-04

Category	Per student expenditure
Scheduled Castes	10338.12
Non Scheduled Castes	8364.41

Literacy Rate

LM_T = all males of a given population at a point of time T.
LF_T = all females of a given population at a point of time T.
LSC_T = all SC's of a given population at a point of time T.
LG_T = all non - SC's of a given population at a point of time T.

Expenditure on

per male member of a given population at a point of time t = YM_t
per female member of a given population at a point of time t = YF_t
per SC's member of a given population at a point of time t = YSC_t
per non - SC's member of a given population at a point of time t = YG_t

The literacy rate of a given population at a given point of time will be some function of the expenditure on education of that particular population at an earlier point of time[7], and a number of social factors. Given a particular level of efficiency, greater per student outlay will correspond to better quality of education; hence more students will be attracted to attend schools. However, some time will pass before these newly enrolled students become literate. The function may be a reflection of the existing social, political and religious beliefs, for example an expenditure of Rs 1000 on males in 1980 may result in male literacy rate of 70% in 1990, however the same amount spent on females in 1980 may result in a literacy rate of only 50% in 1990 because of several social factors[8] which inhibit female literacy from being as responsive as male literacy to levels of expenditure. These functions themselves may change over a long period of time.

There are two differences between the levels of expenditure and literacy rates of various groups within a population[9]:
(i)   degree of responsiveness
(ii)   extent of time lag
- $T > t1, t2, t3, t4$
- $t1 < = > t2 < = > t3 < = > t4$

$LM_T = f(YM_{t1}, \alpha, \beta, \ldots)$

$LF_T = g(YF_{t2}, \alpha, \beta, \ldots)$

$LSC_T = \psi(YSC_{t3}, \alpha, \beta, \ldots)$

$LG_T = \Phi(YG_{t4}, \alpha, \beta, \ldots)$

We make three assumptions:
1. $\alpha, \beta, \ldots$ are all factors other than per student expenditure that affect literacy rates and are constant over time.
2. The functions f, g, ψ, Φ are constant over time.
3. f, g, ψ, Φ are monotonically increasing functions[10].

We know that for the year 2003-04:

$LM_T - LF_T = LG_T - LSC_T$
$\Rightarrow f(YM_{t1}) - g(YF_{t2}) = \Phi(YG_{t4}) - \psi(YSC_{t3})$
$\Rightarrow f(YM_t) - g(YF_t) = \Phi(YG_t) - \psi(YSC_t)$ {We assume that $t1 \approx t2 \approx t3 \approx t4$}

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[7] There is a time lag because after expenditure changes, parents and students get to know of the incentives to enrol, and then a number of years of schooling is necessary to become literate.
[8] These social factors may include the fact that older girls are required to stay home to take care of their siblings, early marriage of girls, social customs that hinder female mobility after puberty, and so on.
[9] Refer to hypothetical example in Appendix
[10] "When x and y refer specifically to numbers, the property of one to one mapping is seen to unique to the class of functions known as monotonic functions. Given the function f (x), if successively larger values of the independent variable x always lead to successively larger values of f(x), that is, if
$x_1 > x_2 => f(x_1) > f(x_2)$
then the function f is said to be an increasing *(or monotonically increasing)* function" (Chiang 1984, 171-172).

We do not know t, however if we assume that the relative expenditure on various classes in time period t is the same as in 2003-04, then a stark picture emerges. In 1991 the difference between literacy rates of males and females was 15.02% points and between the literacy rates of Non-SCs and SCs was 17.69%. We assume that the two differences are approximately the same relative to each other even in 2003-04 (Literacy)[11]. Mathematically it is possible to take functions f, g, Φ, and ψ such that the above expression is true, however it is highly unlikely for the functions to be such in reality. In other words, given that the difference between literacy rates of females & males and non-SC's & SC's is approximately the same; it is highly unlikely that the corresponding differences between the optimal level expenditure (at 2003-04 prices) on females & males is Rs 173 whereas between SC & non-SC is over 11 times that figure at Rs 1974[12]. The existing division of expenditure[13]amongst various social groups is not optimal because *SC's are a vote bank whereas females are not*. The demands of SC's are reflected through elections and weigh heavily in political decisions, whereas the plight of females is not considered with nearly as much rigor.

All social groups maybe divided into four categories depending upon their socio-economic status and political status. Both those belonging to *Quadrant B* and *Quadrant C* need extra resources so as to alleviate them from socio-economic backwardness. Women fall into *Quadrant D*, though they are socio-economically backward because they are not a vote bank they are unable to draw sufficient amount of resources for their progress. However, government expenditure will always tend to be biased against those in *Quadrant C* because they cannot influence elections by financial support or by voting as a group. The tendency for government allocation of resources to be biased against those who are most backward and powerless *(Quadrant C)* may be referred to as the '*Paradox of Inequality*'. One would notice that 'beggars', 'street children', 'migrants' are usually the most in need, however government barely provides them with any assistance because they are not a vote bank. Interestingly education vouchers can address the problem to a certain degree. If education is financed through voucher then all agents would know the exact amount of expenditure on females. Many women NGO's might put pressure on the government to increase the expenditure because they have far lower literacy rates than males. A pre-requisite for exerting pressure on government to increase expenditure on women is knowledge of the existing level of expenditure, education vouchers will reveal this information. The case of women is special because they exist within the *social fabric*, in other words, though they themselves are in Quadrant C, everyday they live and interact with those in other quadrants. If all agents know that insufficient resources are allocated to females then those in other Quadrants may rise in *sympathy* because they interact with women in their day to day life.

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[11] SC data of 2001 census has not yet been released by RGI office.

[12] Say that the optimal difference between female & male expenditure is Rs x and SC & Non-SC expenditure is Rs y, then:

    (i)   x < = > y
    (ii)   x < = > Rs 173
    (iii)   y < = > Rs 1974

However it is highly unlikely that: y = 11x

[13] Assuming that the development of all social classes (SCs, non-SCs, males, females) is equally important. The socially optimal level of expenditure is such that after n number of years all will have the same literacy rates.

Hayek (1945) argues that central planning is often inefficient because information initially dispersed amongst many people is not wholly available to the government to make the correct decisions. However, even if we assume that the government posses all relevant information, the allocation of resources amongst different classes of the society will still not be socially optimal as it is based on their strength as a vote banks, and not on considerations of needs. The author refer to such division of funds as socially not optimal because he assumes that the development of all social classes and groups is equally important, and those who lag behind other in various areas of socio-economic life must be helped more, so as to reduce inequalities.

Diagram 1

Quadrant B	Quadrant A
Socially and Economically Backward	Socially and Economically Forward
VOTE BANK	VOTE BANK
Example: Scheduled Castes	
Quadrant C	Quadrant D
Socially and Economically Backward	Socially and Economically Forward
NOT VOTE BANK	NOT VOTE BANK
Example: Females	

ELECTED BODY

Votes

DEPARTMENT OF E

ELECTED BODY

Vote
Bank

Votes

DEPARTMENT OF EDUCATION

1.6 Inefficiency of Government Schools

There are a number of reasons, available in the existing studies on educational expenditure, which justify government expenditure on education. Firstly, social returns are greater than private returns to education, and therefore left to the free markets, education would always be under produced as compared to the socially optimal level. Secondly, education is necessary for individuals to escape the vicious cycle of poverty. Thirdly, education provides everyone with equal opportunities[14].

Diagram 2

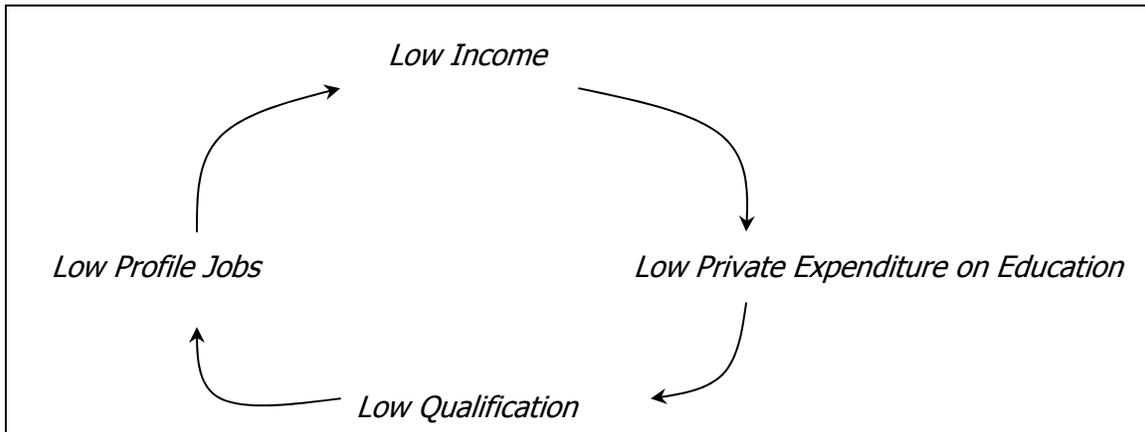The author thinks that the existence of *Democratic Externalities* is yet another reason for subsidization of education. In a democracy there are three agents A, B, and C; where only C is literate. We assume that all illiterate agents make incorrect and all literate agents make correct choices. In a democratic decision making process not only does the vote of each agent have the potential to affect their own welfare but also the welfare of all other agents. If all the agents were to vote on a particular problem then A and B make the incorrect choice and C makes the correct choice. In the democracy the incorrect choice is made for all (with 2/3 majority) and even C suffers because A and B are illiterate. Thus C might be better off sacrificing some of his own income to pay for education A and B, so that the correct decision is made. Though this example is rather extreme, the logic and the conclusions of the analysis would hold true as long as we assume that on the average, ceteris paribus, a population with a greater proportion of literates would make more correct choices as compared to a lesser proportion of literates. The role of information is vital for the success of any democracy i.e. the voting populations must be well informed about the various options available to them so as to

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[14] On my way back home by a rickshaw, late in the night— a few days back, I had a trivial quarrel the apparently drunk rickshaw puller, as he insisted on stopping about five hundred meters before my place. He was pressed to take me further, but his inner discontent burst open. He said that *he would have studied more than me and become an officer had his father not died soon after he passed his matriculation, leaving him deprived of the benefits that people like me take for granted; at least he would not have been pulling a rickshaw carrying those who are merely more fortunate than him.* The lack of equal opportunities often becomes a cause of life long dissatisfaction and seems to plague many. Such accumulated dissatisfaction may be detrimental to the peaceful coexistence of a society.

make a well informed choice. There are various modes through which information dispersion occurs, the most important ones being the print and television media. The illiterate are not able to benefit of print media, further because they tend to be poor they can't avail of the benefit of television. Hence there is restricted flow of information to the illiterate as compared to the literate and hence they are less likely to make optimal choices as compared to their counterparts. Therefore there is considerable support to the argument that education, at least elementary and secondary, should be financed by the state.

When we compare the performance of different population of students, such as government and private school students, it is appropriate to assume that the average performance of the two groups is some function of the per student expenditure on the students. In other words, ceteris paribus, as more and more resources are allocated for the purpose of education of a significantly large student population, the better would be their performance.

G = per student government expenditure in government schools
P_g = per student private expenditure in government schools
F = per student fees in private schools
P_p = per student private expenditure in private schools
PG = performance of students in government schools
PP = performance of students in private schools

$$PG = h (G + P_g)$$
$$PP = h' (F + P_p)$$

We assume that all expenditures are equally efficient, in other words $h = h'$

$PG < PP$[15]
$\Rightarrow \quad h (G + P_g) < h' (F + P_p)$
$\Rightarrow \quad h (G + P_g) < h (F + P_p)$
$\Rightarrow \quad G + P_g \quad < \quad F + P_p$ {assuming h is a monotonically increasing function}

> Something remarkable is happening in India, likely to be repeated in developing countries across the world. In the slums and villages, an extraordinary burgeoning of private schools serving poor families in occurring…the majority of parents reported that 'if the cost of sending a child to a government and private school were the same, they would rather send their child to a private school. More than half the parents indicated that their income is paid on a daily basis … around 33 percent receive a family income that is below minimum wage.

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[15] According to study by Social Jurist 80% of students who passed class V from MCD schools did not know how to read and write their own names. Aggarwal (1998) studied the performance of students in various kinds of schools in Delhi and found that class IV attainments in maths and Hindi, were highest in private unaided schools and underachievement was highest in MCD schools. *According to a report by the Tribune "PIL opposes deputing teacher for Poll Duty" (24 February, 2003)* "out of about 200 teaching days in schools, government schools generally have only about 100 teaching days. As a result, the pass percentage in government schools was 26 compared to 86 in public schools".

Most pertinently here, Kingdon's study (1996) in urban Lucknow, Uttar Pradesh, showed that, when controlled for a range of variables, including student cognitive ability, parental background and number of books at home, students in private unaided schools scored up to 30 percent higher on standardized tests in mathematics than in other school types. Most significantly, when the cost per achievement point was computed, private unaided schools could achieve the same results for less than half the cost of government schools (James Tooley).

Noronha (1996) reports that there has been a mushrooming of private schools in poorer areas of Delhi due to poor quality of education being imparted in government schools. This phenomenon has been observed in Sangaham Vihar (one of the poorest areas in Delhi) in a study by Mahjan and Goyal (2005). Meaning that $RG < RP$ even when $G + P_g > F + P_p$, hence given that h is a monotonically increasing function our assumption that both government and private expenditure are equally efficient $h = h'$ is likely to be incorrect; in other words private schools are more efficient than government schools. The argument is further strengthened by the fact that per student government expenditure is calculated using enrolments as the denominator, however "sometimes it is also argued that the number of pupils schools should be taken as the units and not the total number of students on roll. The great divergence between enrolment and attendance in developing countries, particularly at lower level of education, lends support to the argument" (Tilak 1989, 235). If this approach is adopted then per student expenditure in government schools will rise, and significantly so at lower levels of education.

It is certainly true that in many Government Schools like the one "in Sangham Vihar there has been no electricity and water since it has been established. Instead of play ground there is a huge rock in the middle of the school. The atmosphere is suffocating and everything is laced with dust" (Mahajan and Goyal 2005, 17). However, often incorrect inferences are drawn from these correct observations. In a debate in the Economics Times on *"An Education setup to boost knowledge economy"* Dileep Ranjekar ,CEO of Azim Premji Foundation, claims that "we have not provided infrastructure, classrooms, toilets, drinking water facilities to vast majority of schools. If all this means Rs 68,000 crore per year (as suggested by the compulsory education bill) – so be it. It has to be viewed as a question of life and death" (Economic Times, 2 August 2005). In the same debate R Govinda, senior fellow NIEPA, states that "for our education system to grow, public investment must grow". It is important to realize that there is already significant amount of government expenditure on education, the need is to utilize the money in a more efficient manner both with regards to total expenditure and its division amongst different layers and types of education. An argument to increase expenditure will be meaningful only if the existing amounts are spent efficiently and yet prove to be inadequate.

1.7 Education Vouchers

Provision of education vouchers instead of running free government schools, allows private players to produce the service of education efficiently.

Graph 1.2: Microeconomic Analysis of Education Vouchers[16]

Expenditure
On All other goods

A

p

C

e_3

m

III

e_1

e_2

II

I

O   x   B   y   z   D

Expenditure on Education

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[16] Similar analysis in the case of introduction of food stamps is given in page 29-31; Varian, Hal R. 1987. *Intermediate Microeconomics*. New York: W.W.Norton and co.

We assume that education is a normal good.

Situation I: the government does not spend any amount on education. The consumer spends x on education, m on all other goods and is at e_1 on indifference curve I.

Situation II: the Government runs free schools and spends *xz (oz – ox)* on education. The agent consumes *oz* of education and *om* of all other goods and is on the indifference curve II at e_2.

Situation III: The Government provides the agent with an education voucher worth *xz* instead of running free schools. The budget line of agent shifts from AB to ACD (blue). The agent is now at e_3 on indifference curve III, spends *oy* on education and *op* on all other goods.

Inferences:

(i)   The agent is 'better of' with education vouchers than receiving free education in government schools, as she is on a higher indifference curve in Situation III than Situation II.

(ii)   The expenditure on education decreases from *oz* to *oy* when education vouchers are provided. The quantity and quality (Q) of education will be some function of the expenditure on education.
   a. Situation II: $Q_2 = h$ (*oz*)
   b. Situation III: $Q_3 = h'$(*oy*)
   Education voucher are a more efficient method of financing education than operating free government schools, therefore though *oy < oz*, the efficiency gains (h' is greater that h) are likely to be such that $Q_2 > Q_1$.

(iii)   Private opportunity costs: Tilak (1989) argues "the cost of a very valuable resource that is otherwise ignored is the cost of time. Opportunity cost of students reflects this scarce resource... A substantial part of the problems of non-attendance and the dropouts in school education could be attributed to ignoring the aspects of private costs including the opportunity costs in resource planning". Regardless of what the government spends on education by running free schools many students are unable to attend because their families cannot afford to pay the opportunity cost involved. The introduction of education vouchers increases the *expenditure on all other goods* by *mp*, which acts as an income subsidy, and hence increases the agent's capacity to pay for the opportunity cost involved. However it maybe necessary to supplement education vouchers with 'education cash subsidy' to help parents cover for the opportunity costs.

There are a number of issues with regards to the education vouchers that need to be addressed. Firstly, what should be the voucher amount and what factors should

determine it? A number of factors should determine the optimal voucher amount, including:

(i) The existing rate of literacy and the time period within which the universal literacy is aimed to be achieved (the lower the former and shorter the later, the higher should be the voucher amount)[17].

(ii) The difference between female & male and SC & non-SC literacy rates, and the time period within which these are need to be narrowed down (the greater former and shorter the later, the greater should the voucher amount for groups with lower literacy rates).

(iii) The excess of social return over private return to education in elementary and secondary stage (the greater the excess of social return over private return the greater should be the voucher amount)

Secondly, who should receive the vouchers?

(i) Vouchers only for those below a pre-determined income level: paradoxically the success of education voucher scheme will depend crucially on the government agency that will certify incomes.

(ii) Vouchers for all students:
   o a portion of the subsidy will accrue to the richer groups
   o it is likely to be too heavy on the exchequer

Both the second and third issues can be resolved using a *'school-fee wise voucher scheme'*. Say that the government is currently spending Rs 750 per student per month and it can only provide an equivalent voucher amount. The government will reimburse the schools a portion of their fees as per Table X (a)

Table X (a)

Category	Voucher Amount	School's Fee (Rupees)
A	95% of school fees	0 – 790
B	30 % of school fees	790 – 2000
C	10 % of school fees	2000 – 3000

---

[17] L = literacy rate; E = per student expenditure on education; t = time
   L = f (E, t)
   $\partial L / \partial t = \partial f (E, t) / \partial t$
Once the above function is estimated for males & females, SCs & Non-SCs and other groups, then optimal amounts of expenditure can be determined according to goals to be achieved within a given time period. The existing per student expenditure needs to be used with care while arriving at a voucher amount because as discussed earlier they maybe far from optimal amounts.

Category	Maximum Voucher Amount (Rupees)
A	750 (790 x 0.95)
B	600 (2000 x 0.30)
C	300 (3000 x 0.10)

We make three assumptions:

(i)   All students are free to go to the school of their choice
(ii)   Schools that charge higher fees provide better quality education
(iii)   Richer parents send their children to schools with higher fees

If the above three assumptions are true, then richer families would naturally be able to avail lesser proportion of the subsidy. The fee categories and percentage subsidy can be adjusted according to the income distribution of the population to channel maximum amount of the subsidy on education towards the poor.

Fourthly, what happens to the students studying in a private school if it shuts down due to non profitability? Problems of this nature and of much greater degree are often encountered in the financial sector. What happens to all the depositors of a bank if it closes down due to non profitability? In the financial sector the RBI temporarily takes over any bank that collapses and soon amalgamates it with a stronger bank. In the education sector there is need for a quasi-government organization of the nature of the RBI that can take over schools which may collapse and then auction them off to other parties.

Fifthly, schools would always prefer to accept cash as compared to vouchers because they would have to incur a cost in providing appropriate documents to justify to the government that the students from whom they have collected the vouchers are studying in their schools. Moreover time would be required to get the voucher enchased as the government would have to verify the submitted information[18], and therefore loss of interest that could have been earned. A two pronged approach may be adopted:
(i)   Laws penalizing schools on denying vouchers as a mode of payment.
(ii)   A commission on every voucher over and above the voucher amount may be paid to the schools so as to compensate them for the processing costs.

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[18] Verification is necessary because a system of 'bogus' students may arise. A parent, who is earning Rs 2000 per month and has a child who receives an education voucher of Rs 1000, may strike a deal with a school whereby the school takes the voucher and encashs it from the government to pay the parent Rs 500 and itself keep the rest, of course the child is not sent to the school. These scenarios can arise especially in the case of very poor parents and female children. Therefore it is necessary to verify whether a particular voucher student is studying in the school or not.

Taxonomy of Costs of Education (Tilak 1989, 236)

```
                              Cost of Education
                  /                                      \
      Institutional Costs                            Private Costs
              |                                            |
      _____|_____        _____|_____
     |                            |           |                     |
  Visible Costs          Opportunity Costs  Visible Costs
     |                                          |
  ___|_____                        _____|_____
 |              |                        |                         |
Recurring   Non Recurring            Tuition Costs        Non-Tuition Costs
  Costs        Costs
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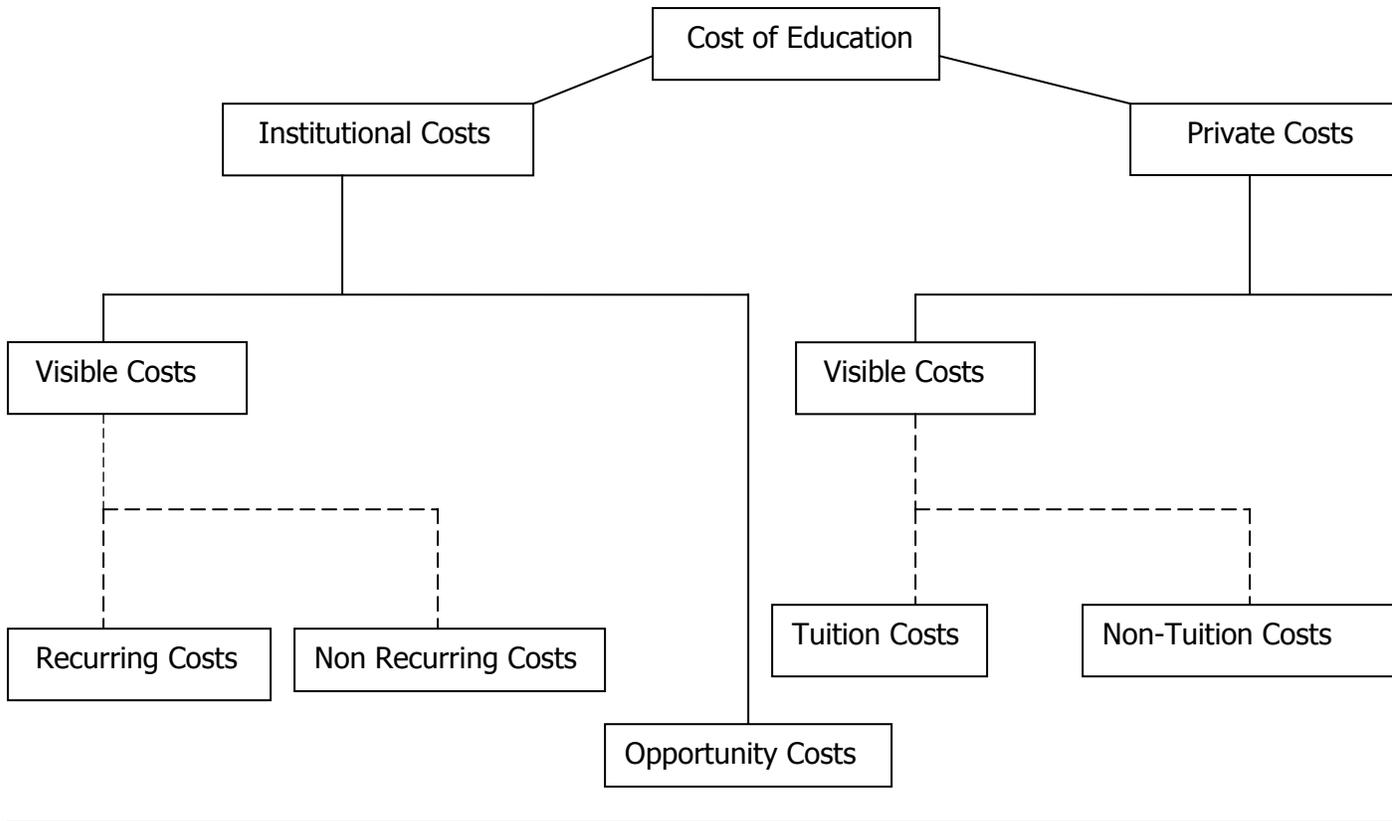
SECTION 2

Nature, Composition and Trends
in Government Expenditure on Education

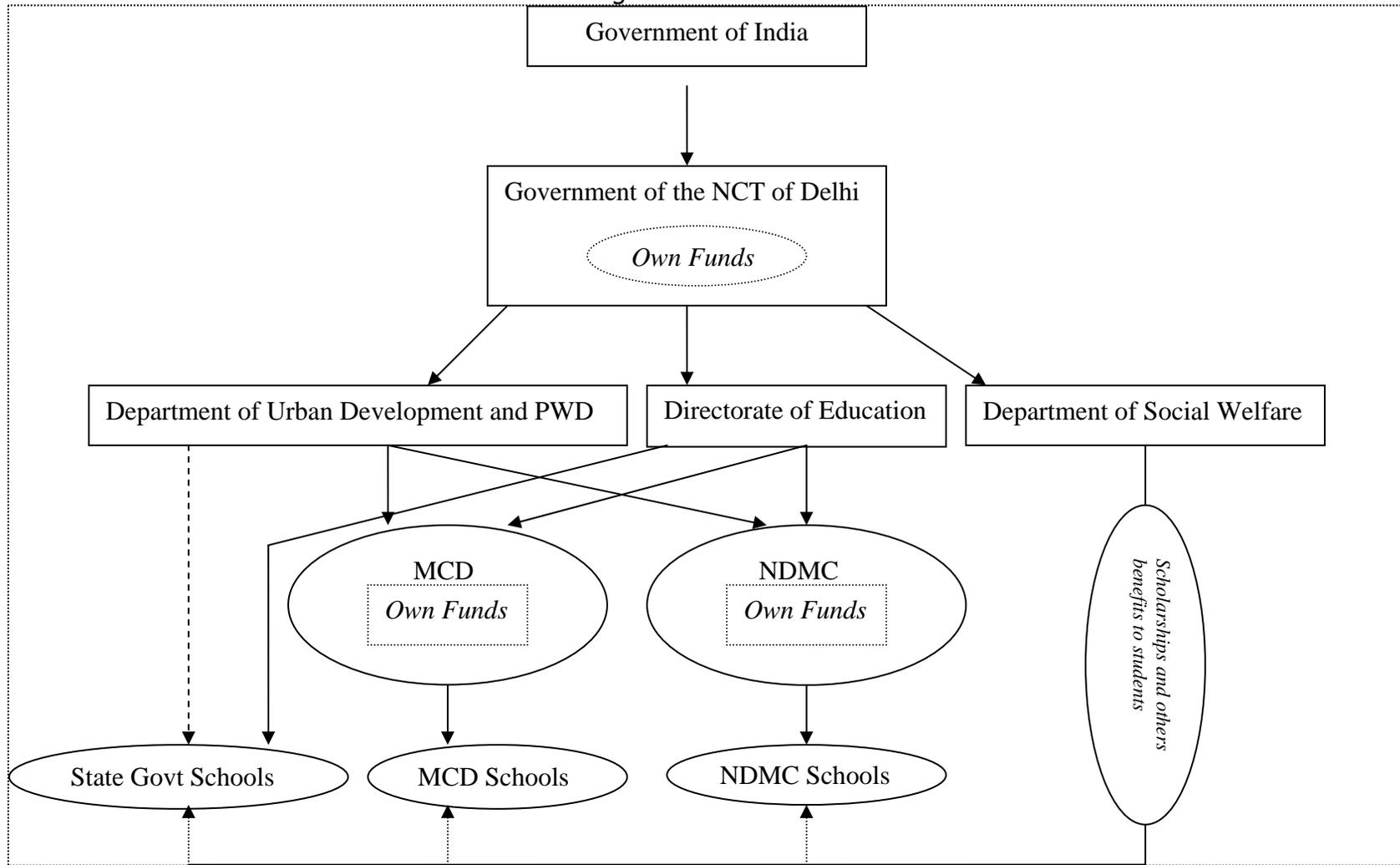## 2.1 Expenditure on Elementary and Secondary Education:

2.1.1 Flow of Funds

The three government department that funds education in Delhi are Directorate of Education, Department of Social Welfare, and PWD. The two local bodies, MCD and the NDMC, are also engaged in the production of education. The flow chart illustrates the flow of funds amongst various organisations. The Department of Social Welfare does not provide grants to the schools however they run a number of schemes, like scholarships, which the students can directly avail.

Per student expenditure in 2003-04 (at current prices) in state government, MCD and NDMC schools were Rs 8700, Rs 4740, Rs 11430 respectively. During the same year approximately 10%, 100% and 67% of the students in state government, MCD and NDMC schools respectively, were studying in elementary classes. The per student expenditure required to provided education of a given quality tends to be lesser in elementary classes as compared to secondary classes[19], hence if state government, MCD and NDMC schools were to provide the same quality education (assuming that all have the same efficiency level) the per students expenditure on state government schools should be the greatest followed by the NDMC and MCD in that order. Furthermore, NDMC schools caters to the richer sections of Delhi, whereas state government schools cater to most of Delhi including very poor areas, hence from a policy perspective per student expenditure in state government schools should be higher to compensate for lower private expenditure on education on students in them as compared to the NDMC schools. On the contrary, per student expenditure in NDMC schools are Rs 2730 and Rs 6690 more than in state government and MCD schools respectively, it is very unlikely that all are providing the same quality education. The most likely reason for the existence of these Inter Departmental imbalances is the fact that NDMC caters to a more influential section of the society in Delhi who have greater power to influence government decisions, and hence are able to ensure greater spending on the education of their children. Therefore amongst those who go to government schools in Delhi, more is spend on the rich than the poor!

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[19] Because of laboratories, more qualified teachers … etc

Diagram 3: Flow of Funds

Government of India

Government of the NCT of Delhi

Own Funds

Department of Urban Development and PWD

Directorate of Education

Department of Social Welfare

MCD

Own Funds

NDMC

Own Funds

Scholarships and others benefits to students

State Govt Schools

MCD Schools

NDMC Schools

2.1.2 Directorate of Education's Expenditure

Directorate of Education's expenditure on education (I-XII) (including Nutrition and Scholarships) increased by over five and half folds from 1993-94 to 2002-03. The period can be divided into two phases: Phase I from 1993-94 to 1999-2000 recording an exponential growth rate of 35.20% p.a. and Phase II from 1999-2000 to 2002-03 with stable levels of expenditure at growth rate of negative (-) 0.50% p.a. As a result of this contrasting period the expenditure curve (red) is *'sigmoid shaped'*.

Graph 2.1: Directorate of Education's expenditure on elementary
and secondary education including nutrition and scholarship (1993-94 prices)
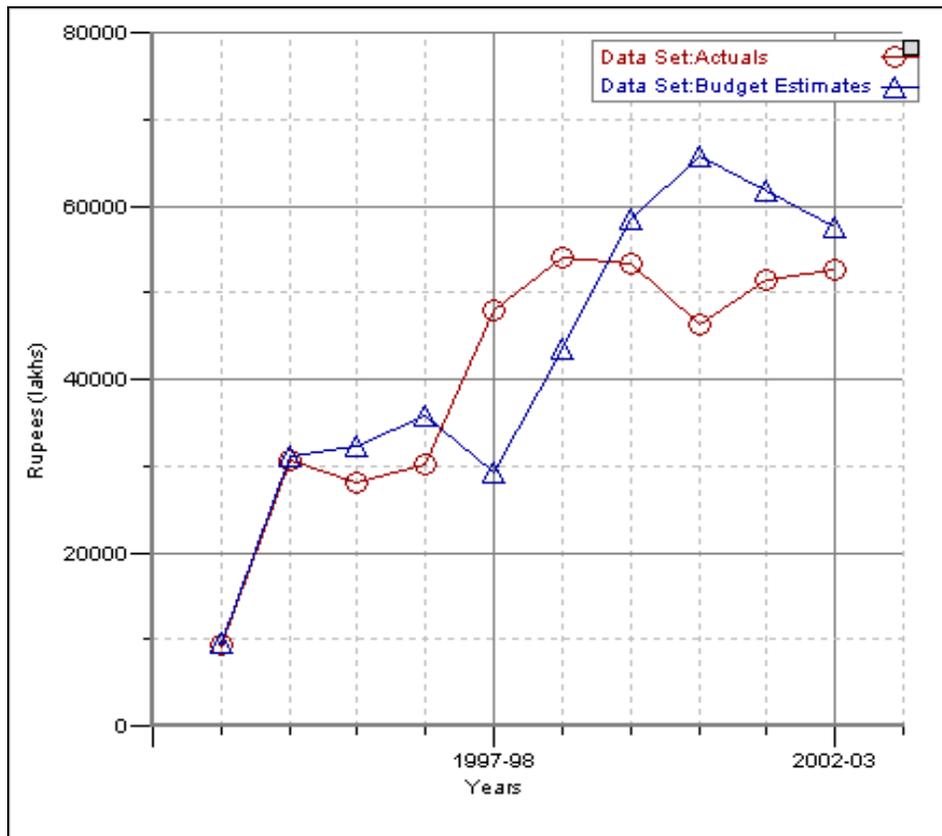
Graph 2.2: Directorate of Education's Expenditure on Scholarships (1993-94 prices)
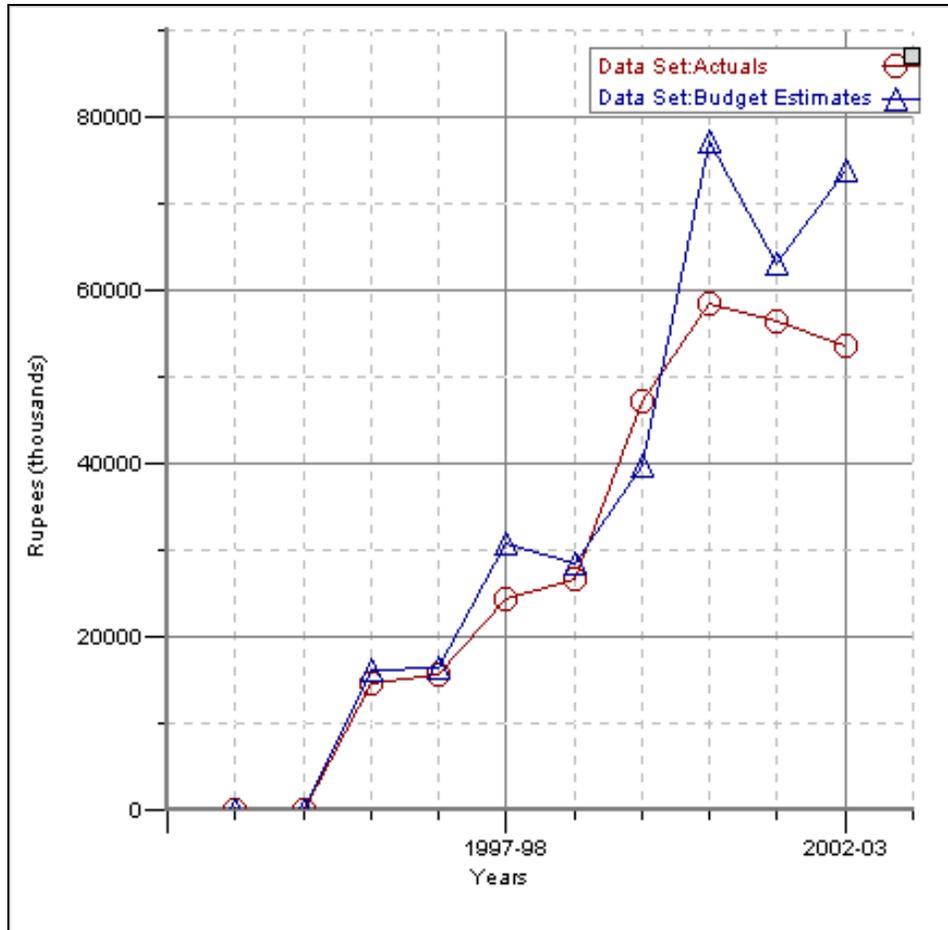
2.2 Scholarships: Stipend to Girl Students

The Directorate of Education provides scholarships under a number of schemes (mentioned in Appendix II), the largest scheme is *'Stipend to Girls Students'* stared in 1997-98. Since then it has grown by 4.2 folds (33.3% p.a.) to account for over 80% of total scholarship expenditure by 2002-03. "Objective of this scheme is to promote education among girl students belonging to rural areas and JJ Colonies and retain them till their education is completed" (Plan Schemes of Education, 2004). A significant feature of the scheme is that the entire amount of this stipend is paid in the form of cash, upon receiving which the students and their parents are required to sign as a proof of acceptance. Therefore the money reaches the claimants on time with least amount operational and distributional difficulties.

Female enrolment as a percentage of total enrolment has decreased by 2.92, 1.11, and 1.56 percentage points from 1998-99 to 2003-04 in primary, middle and secondary classes respectively, because the greatest decrease is in primary classes the trend would continue for a few years to come[20]. Most likely a similar or even more adverse trend exists for girl students from JJ Colonies as they are the one of the most disadvantaged groups[21].

Opportunity costs of a male or female child of a given age is likely to be similar, but because of social biases against females, families are likely to be willing to bear a much smaller portion of it in the case of girls, resulting in lower female enrolments. *'Stipend to girl students'* has the potential to address this problem as the cash can be used to cover for the opportunity cost. A stipend of Rs 200, Rs 400, and Rs 600 per annum are paid to girl students in primary, middle, and secondary class respectively. A girl child of age sixteen (who is to join class XI) can earn Rs 2400-6000 per annum working as a household labourer in Delhi. Most likely the stipend covers less than 10% of the opportunity cost. In light of the declining trend in female enrolment, it is necessary to increase the stipend by many folds so that it covers over 50% of the opportunity cost.

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[20] A portion of the decline in the female enrolment maybe due to the decline in female-male ratio in Delhi

[21] No data is available with the Directorate of Education on the enrolment of students from JJ colonies for years before 2003-04.

Table XI: Stipend to girl students

Eligibility conditions	Paper Required for Head of School (HOS)	Amount of Benefit
a. Girl should be a resident of rural areas and JJ colonies/clusters. b. Girl should have passed out her annual examination.	Head Of School shall see the proof of residence HOS shall see the result of previous class and ensure that only pass out students are paid stipend.	Rs 200/- p.a. shall be paid to pass out students of primary classes. Rs 400/- p.a. shall be paid to pass out students of middle classes Rs 600/- p.a. shall be paid to pass out students of secondary classes.

The benefit shall not be paid to those girls who have passed out of their classes after compartment.
Source: Booklet

Table XII: Female enrolment as a percentage of total enrolment (I-XII)

Year	Primary	Middle	Secondary
1998-99	49.36	48.40	48.27
1999-2000	49.22	48.52	47.83
2000-01	49.10	48.67	48.14
2001-02	47.88	48.69	47.11
2002-03	47.21	46.71	47.07
2003-04	46.44	47.29	46.71

Source: calculated from directorate of education data on enrolment

Graph 2.3: Composition of Scholarship (1993-94 prices)

Legend:
- Stipend to girl students
- Scholarship to educationally backward minorities
- Open Merit scholarships to SC/ST Students (SCP)
- Merit scholarships to SC/ST Students (SCP)
- Other scholarships
- Post matric scholarship to SC/ST
- General Scholarship

Y-axis: Rupees (thousands)
X-axis: Years
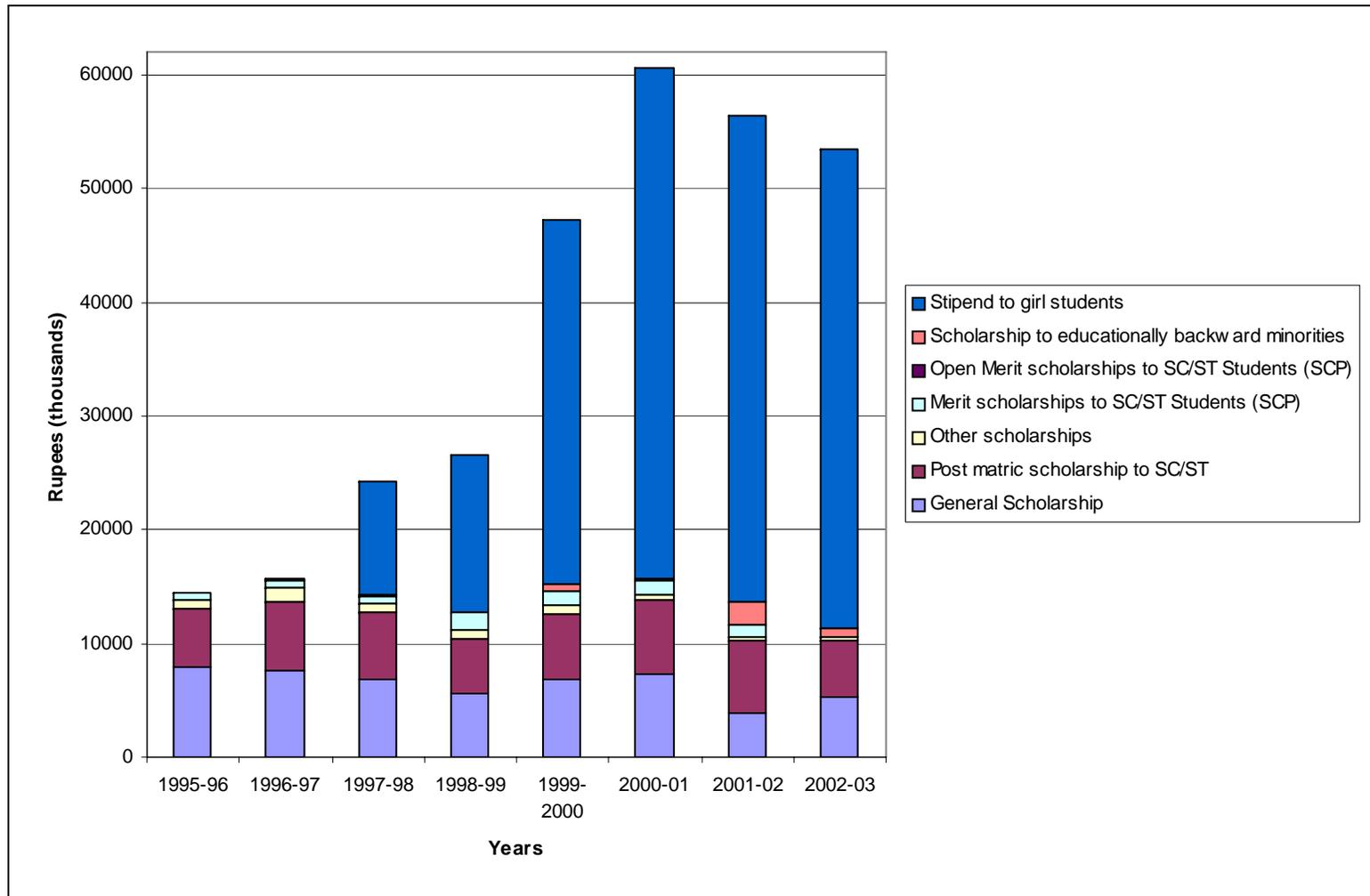
Graph 2.4: Composition of Scholarship (1993-94 prices)

Legend:
- Stipend to girl students
- Scholarship to educationally backward minorities
- Open Merit scholarships to SC/ST Students (SCP)
- Merit scholarships to SC/ST Students (SCP)
- Other scholarships
- Post matric scholarship to SC/ST
- General Scholarship

X-axis (Years): 1995-96, 1996-97, 1997-98, 1998-99, 1999-2000, 2000-01, 2001-02, 2002-03

Y-axis (Percentage): 0%, 20%, 40%, 60%, 80%, 100%
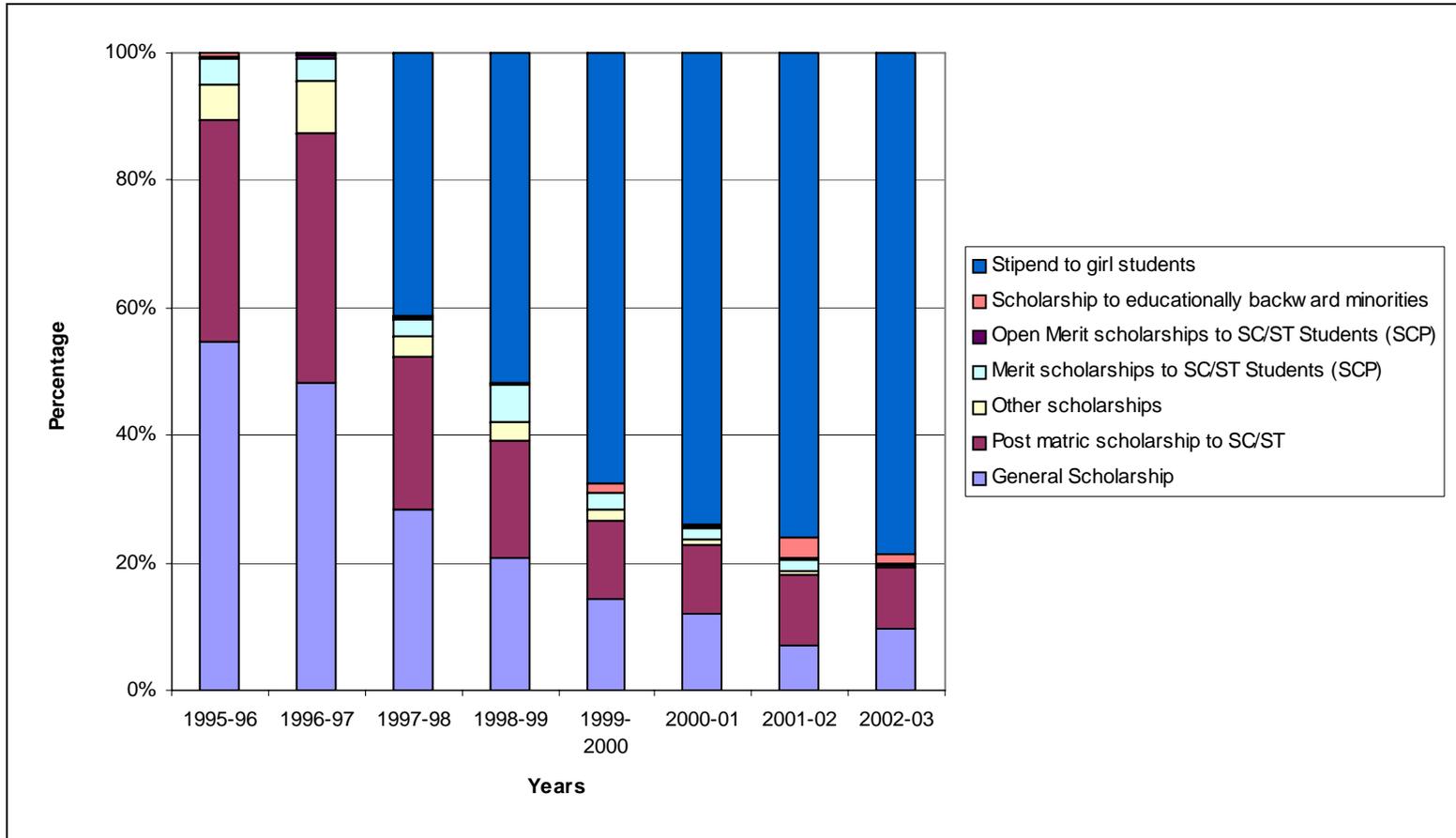
2.3 Nutrition

Directorate of Education's expenditure under this scheme is meant for the provision of mid-day meals for students of primary classes. In 2003-04 over 97% of this expenditure was in the form of grants-in-aid to local bodies, especially to the MCD as it accounts for over 88% of the primary class enrolment in state government, MCD and NDMC schools. The expenditure increased exponentially by over 134 folds from 1993-94 to 2002-03, at an average annual rate of 72.4%. The period can be divided into two phases: Phase I (1993-94 to 1998-99) and Phase II (1998-1999 to 2002-03). The average annual growth rate in Phase I was 14.8%, however in Phase II this figure increased to 186.4%. The expenditure increased by 4.6 folds from 1998-99 to 1999-2000, largely because this year marked the introduction of grants-in-aid to local bodies for mid-day meals.

Growth rates in enrolment remained relatively stable below 2% till 2001-02, however in 2002-03 the enrolment rate abruptly increased to 7.5%. In the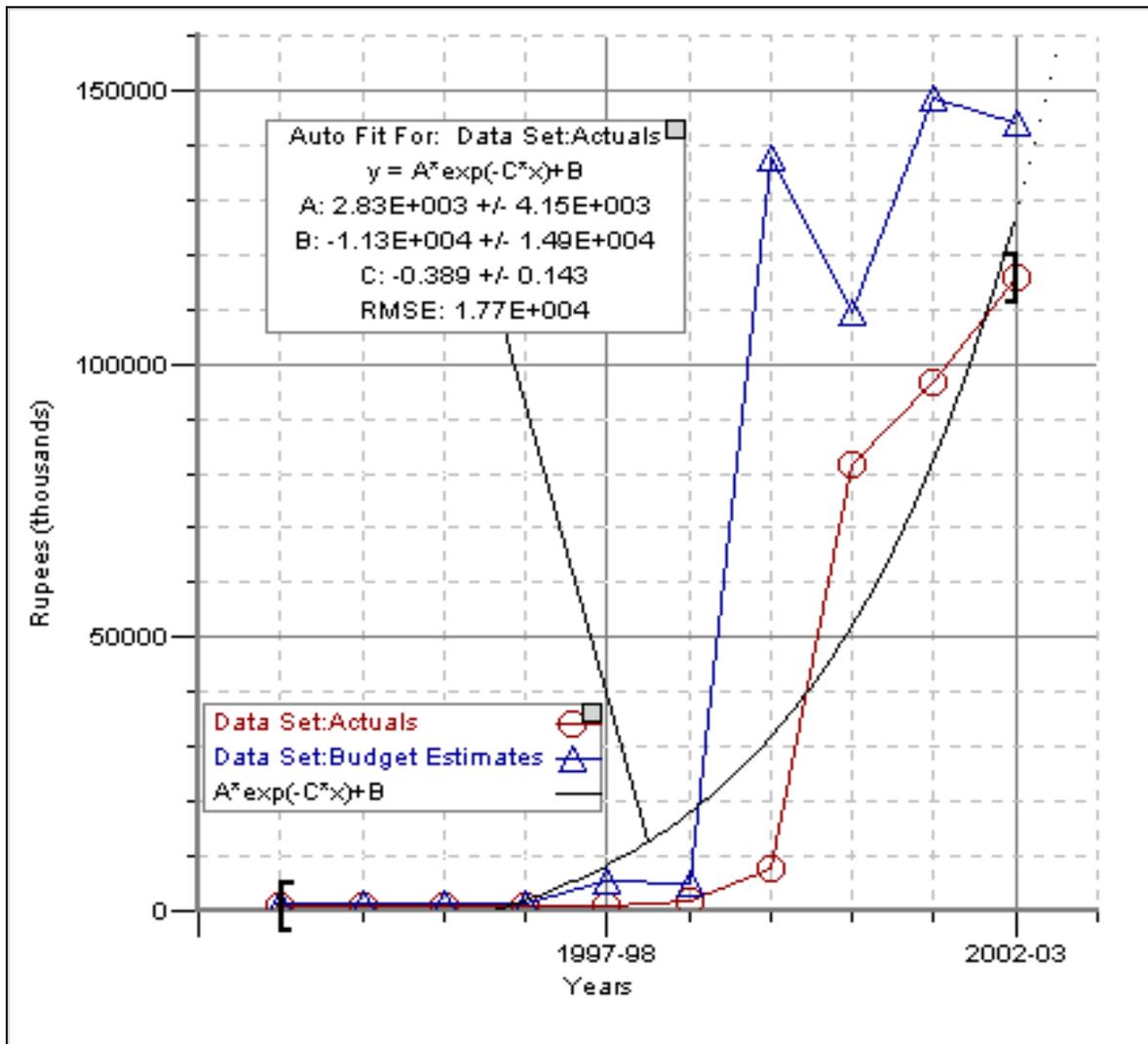 period the MCD did not introduce any new schemes, which maybe comparable in size to the mid-day meals scheme, hence most likely the increases in enrolments are in response to the massive increases in expenditure on the scheme. There are two points to note: firstly, enrolments show an abrupt increase two years after expenditure, therefore expenditure has a *laggard effect* on enrolment; possibly because it takes time for information about mid-day meals to spread to parents whose children are not yet enrolled. Secondly, there is a reduction in enrolment from 2002-03 to 2003-04, it is possible that many parents enrolled their wards enticed by whatever they heard of the mid-day meals, later some of them withdrew as they did not receive as much benefits as they expected. However, further data analysis is necessary to arrive at concrete conclusions.

Table XIII: Grants to MCD (including SCP) for Mid-day meals (Rs thousands)

Year	Grants	Grants (1993-94 prices)	Real Growth Rates (%)	Enrolment	Growth Rate in Enrolment (%)
1998-99	0	0	-	847623	-
1999-2000	6494	4240.1	Infinity	862792	1.80
2000-01	127374	79935.3	1785.22	871124	0.97
2001-02	155320	95004.2	18.85	883929	1.47
2002-03	192992	114372	20.39	950272	7.51
2003-04	187136	-	-	932320	-1.89

Graph 2.5: Directorate of Education's Expenditure on nutrition (1993-94 prices)

Auto Fit For: Data Set:Actuals
$y = A*exp(-C*x)+B$
A: 2.83E+003 +/- 4.15E+003
B: -1.13E+004 +/- 1.49E+004
C: -0.389 +/- 0.143
RMSE: 1.77E+004

Data Set:Actuals
Data Set:Budget Estimates
$A*exp(-C*x)+B$

Rupees (thousands)

150000

100000

50000

0

1997-98

2002-03

Years

2.4 Plan and Non-Plan Revenue and Capital

Diagram 4

```
                    ┌──────────────┐
                    │ Expenditure  │
                    └──────────────┘
              ┌────────────┴────────────┐
         ┌────────┐                 ┌──────────┐
         │  Plan  │                 │ Non Plan │
         └────────┘                 └──────────┘
        ┌────┴────┐                ┌─────┴─────┐
┌─────────────┐ ┌──────────────┐ ┌──────────────┐ ┌──────────┐
│ Revenue     │ │ Capital      │ │ Revenue      │ │ Capital  │
│             │ │              │ │              │ │          │
│ Ex: Mid-day │ │ Ex: construc-│ │ Ex: Salaries │ │ Ex:      │
│ meals       │ │ tion of      │ │ in Govern-   │ │          │
│             │ │ schools      │ │ ment         │ │          │
│             │ │ buildings.   │ │ Secondary    │ │          │
│             │ │              │ │ Schools      │ │          │
└─────────────┘ └──────────────┘ └──────────────┘ └──────────┘
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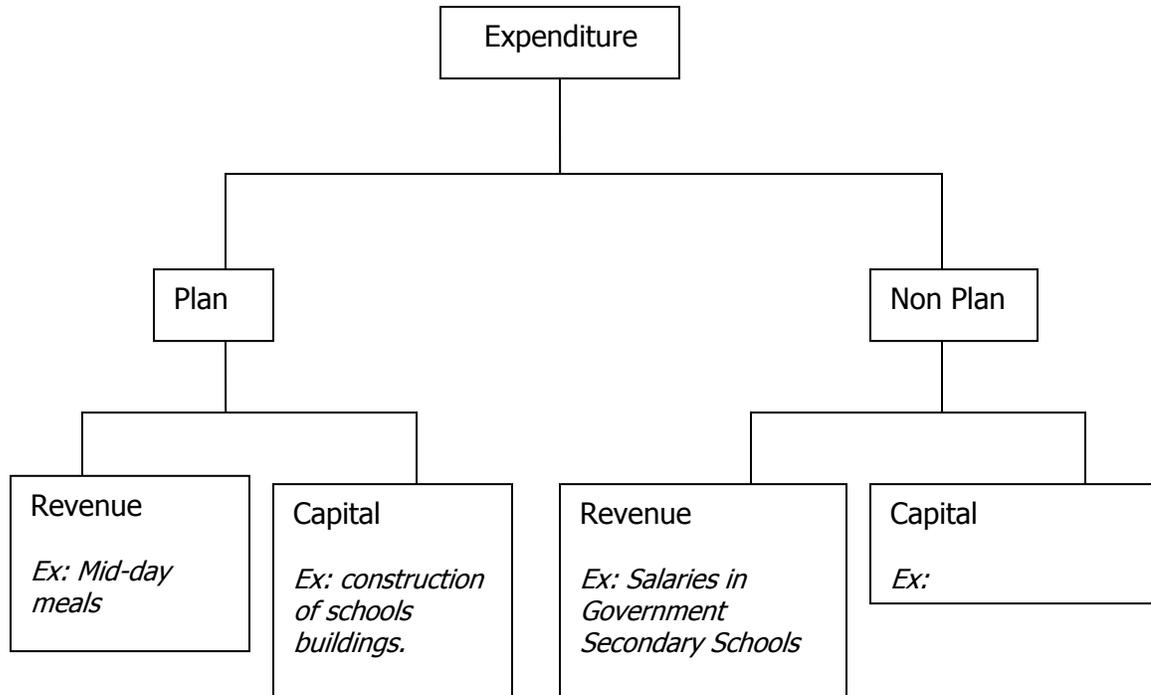
'Detailed Demand for Grants of the NCT of Delhi' classifies expenditure into Plan and Non Plan components. Plan is that portion which is financed by the Five Year and Annual Plans of the Government of India and Government of NCT of Delhi, whereas the Non Plan portion is entirely financed from state governments own sources of revenue and is not a part of its Annual Plan. A comparison of the Plan and Non Plan components of expenditure may be reflective of two things. Firstly and most importantly, during "a particular Plan period, only that expenditure which provides for an increase in the level of development over that attained in the previous period is classified as Plan expenditure" (Bashir 2000, 8). Therefore it is an indication of level of developmental expenditure meant for the expansion of educational facilities, whether it is capital expenditure like building of new schools, or revenue expenditure like mid-day meals meant to increase enrolments in schools by providing young school going children with some nutritional support. Secondly, "at the end of a plan period, the recurrent expenditure is transferred to Non Plan category. Thus, salaries of new teachers appointed in the 8th Five Year Plan are shown as Plan expenditure on the revenue account and would be transferred to Non Plan head at the end of the Plan period" (Bashir 2000, 8). Therefore, if there were a recruitment drive as a policy initiative, it would be reflected as an increase in Plan salaries.

Revenue expenditures are recurrent in nature, such as *'Teachers' Salaries'*, whereas capital expenditures entail creation of tangible (and or financial) assets, such as the building of schools.

The most important point to note is that Plan and Non Plan division is on the basis of *sources of funds* whereas the Capital and Revenue division is on the basis of *uses of fund*. Interestingly *'grants in aid to MCD for construction of School Building for removal of tented accommodation'* which is clearly capital expenditure is recorded as revenue expenditure!

Amongst the three Departments of Government of NCT of Delhi, the Directorate of Education spends least portion of its expenditure as Plan[22]; in fact for nine out of ten years it is less than or equal to 10%. Plan expenditure declined from 12.8% in 1995-96 to 2.5% in 1998-99, however by 2003-04 it had increased to 15%. It seems that from 1995-96 to 1998-99 there were new few policy initiatives, however from 1999-2000 onwards there has been an effort to increase the spread of education, led by schemes such as the mid-day meals.
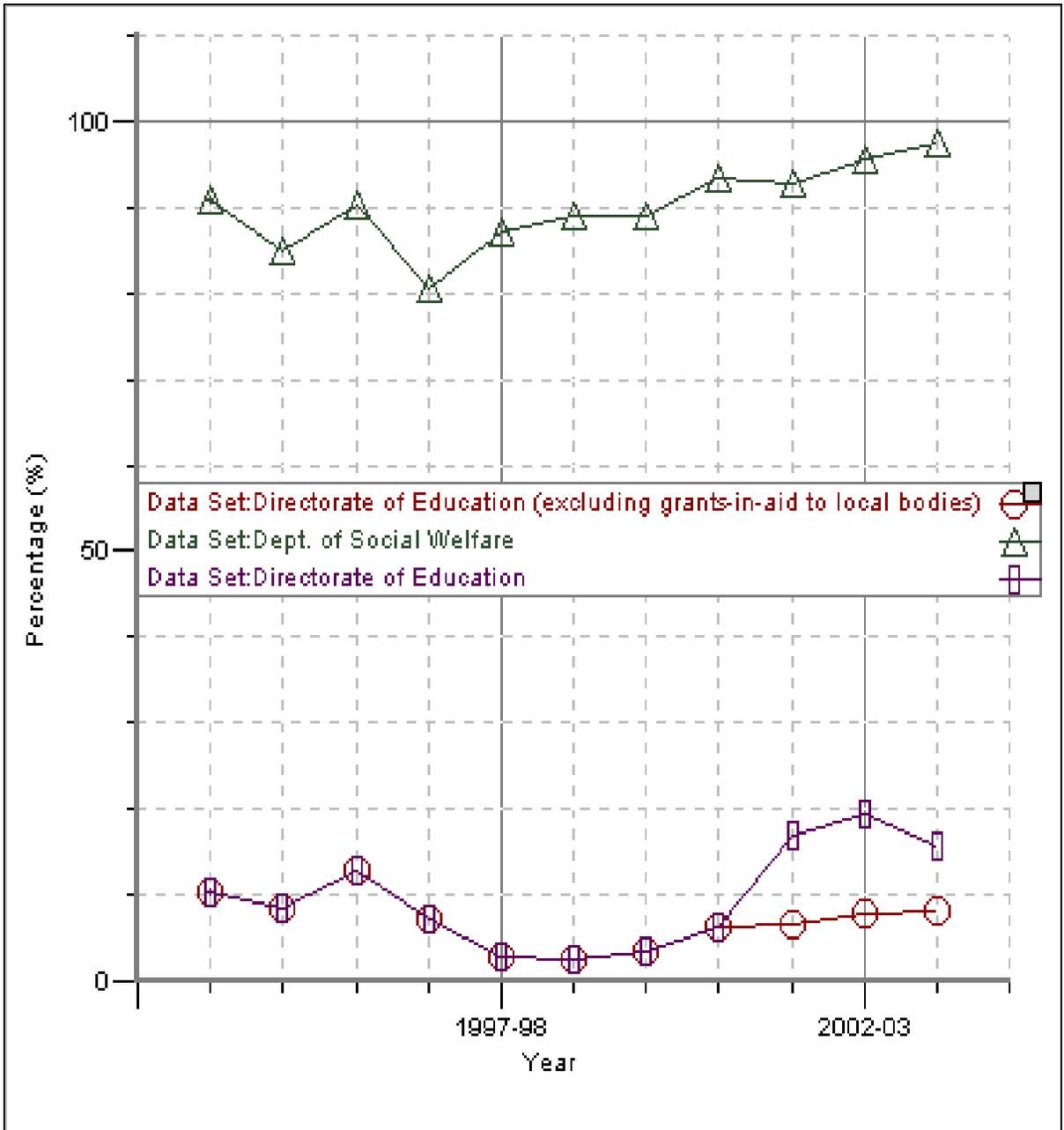
There are considerable fluctuations in the growth rates of Plan and Non Plan expenditures by the Directorate of Education. The Plan growth rates vary from 168% to negative 48% and Non Plan growth rates from 238% to negative 15%. The growth rates of Plan and Non Plan expenditures seem to bear no relationship as for five out of nine years (1994-95 to 2002-03) they have opposite signs.

Over 80% of the expenditure by the Department of Social Welfare is Plan, largely because most of its schemes are either *Special Component Plan* (meant exclusively for scheduled castes) or *Centrally Sponsored Schemes*[23] (drawn up by the Government of India and implemented by the States). There are considerable fluctuations in the growth rates of Plan and Non Plan expenditures, since 1997-98 onwards the former has grown at a rate faster than the later, as a result of which the Plan component increased from 80% in 1996-97 to 97% in 2003-04. It seems that since 1996-97 onwards there have been new initiatives to help socially disadvantaged groups.

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[22] The *grants-in-aid to local bodies* by Directorate of Education were accounted for as Non Plan expenditure till 2000-01, however next year onwards they have been accounted as Plan expenditure. Therefore while examining the trends in Plan expenditure it is necessary to exclude these *grants-in-aid*, as Plan expenditure reflects new developmental efforts whereas a simple accounting transfer from Non Plan to Plan certainly does not reflect the same.

[23] The Government of India defines Centrally Sponsored Schemes as schemes 'which are fully or partially funded by the Centre and implemented by the States or State agencies except those which fall in the Centre's sphere of responsibility i.e. in the Union List.'

Graph 2.6: Plan expenditure as a percentage of total expenditure

Data Set:Directorate of Education (excluding grants-in-aid to local bodies)
Data Set:Dept. of Social Welfare
Data Set:Directorate of Education

Graph 2.7: Real Growth Rate of Plan
and Non Plan Expenditure of the Directorate of Education
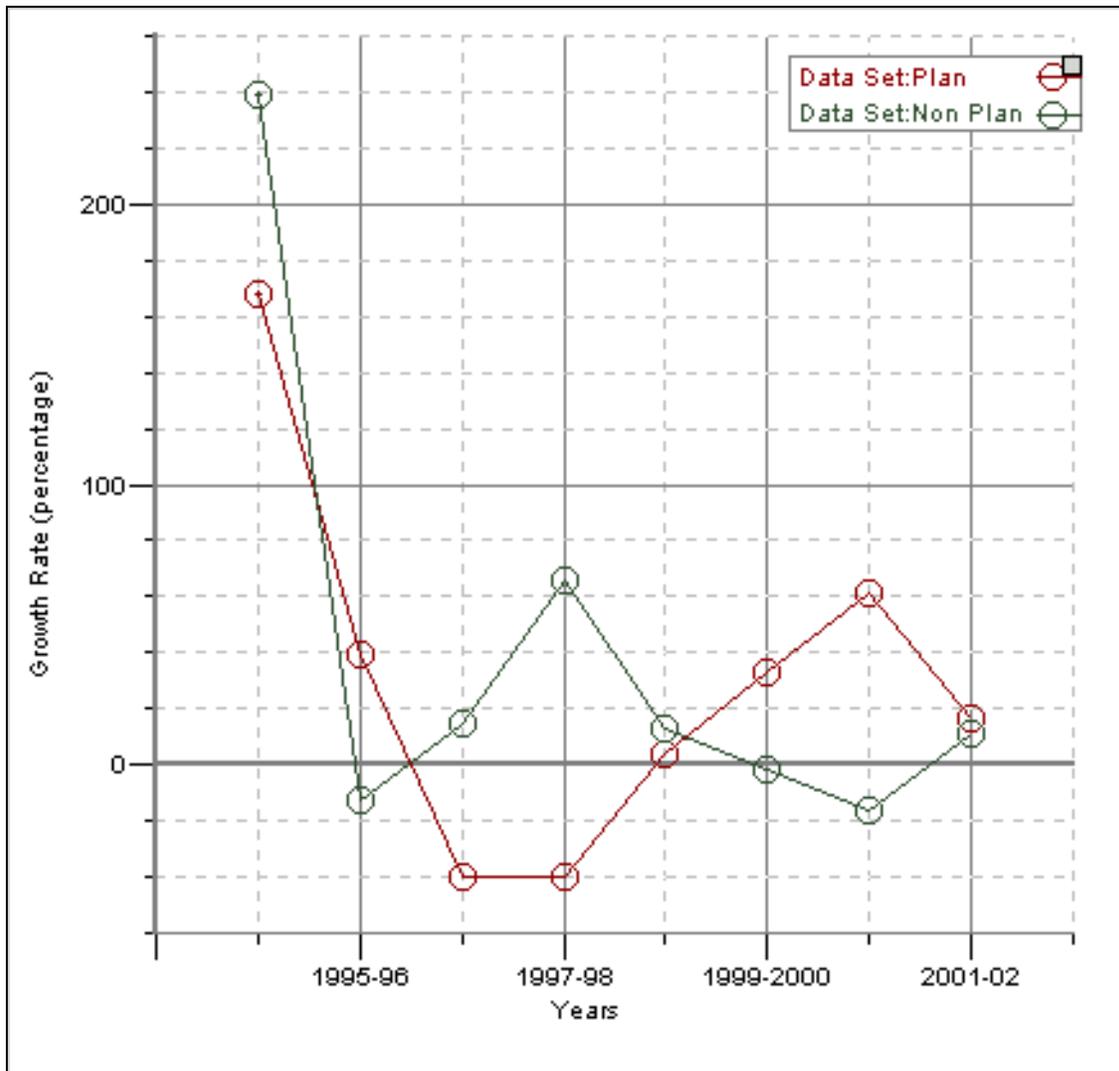
Graph 2.8: Real growth rate of Plan
and Non Plan Expenditure of the Department of Social Welfare
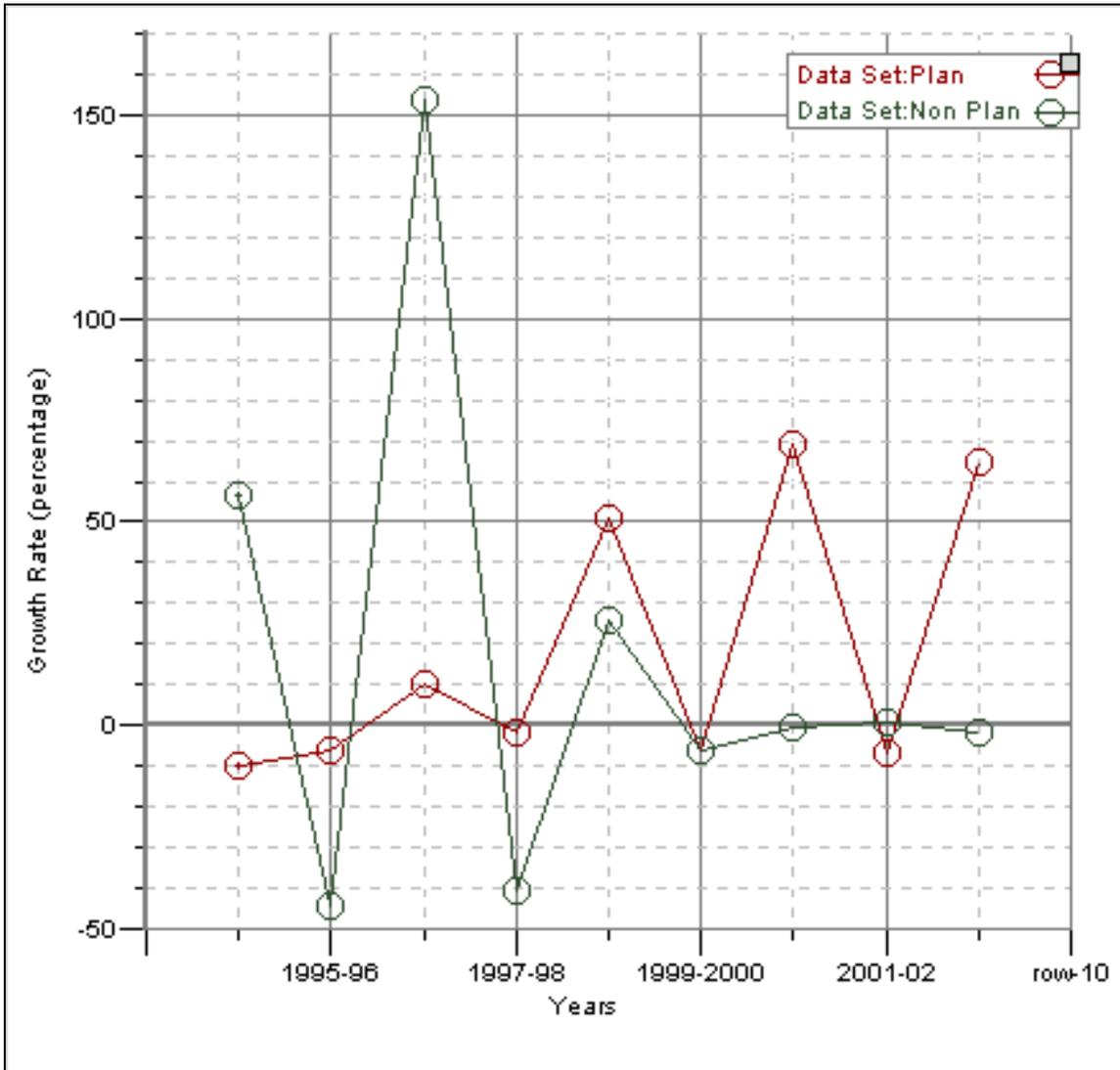
2.5 Department of Urban Development & PWD

Department of Urban Development & PWD's incurs both revenue (*grants-in-aid to local bodies*[24]) and capital (building middle schools and secondary schools) expenditure. The Directorate of Education incurs no capital expenditure as the PWD builds all state government schools. MCD schools are built by their own engineering department and not by the PWD.

It may be argued that fixed costs are not incurred on a continuous basis but the returns from it are continuous in nature. For example, if a school is completely built in Year I, all the cost would be accounted for in the same year however the building would yield its services for many years to come. Thus the cost of the building should ideally be divided into its entire life time. It is for this reason that Tilak (1989) claims that with "regards to fixed costs it is quite difficult to calculate unit costs per year. Generally in many a study it is either ignored or rate of depreciation is calculated. Sometimes rent is imputed on fixed assets" (Tilak 1989, 239). However in reality the curve of Actual (nominal) expenditure on construction of schools is not significantly more 'stepped' than total expenditure. The reason is that schools are not constructed within a particular year but over a number of years, and typically every year the construction of some schools will end where as that of other schools will begin. Once the construction of a school begins, whatever portion is completed is recorded as expenditure in the current year, and rest will continue to be recorded as a part of capital expenditure of successive years till it is completed. Because the author was unable to impute rent, the expenditure on construction of schools for particular years is account for entirely in that year, however it is unlikely to cause significant errors.

Senior Officials at the Directorate of Education comment that the ideal and economically viable number of students in a particular school is 800-1000, however many schools are over crowded especially in North and North East Delhi with 2000-2500 students. Since 1998-99 overcrowding is continuously increased in state government schools, as the average annual rate of growth of expenditure on construction schools (3.2%) is less than the rate of growth of enrolments (4.5%). It is paradoxical, that one hand the government introduces schemes like the mid-day meals to increase enrolments, whereas on the other hand its schools are getting over crowded and hence less desirable to attend.

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[24] The grants-in-aid to local bodies by the Department of Urban Development and PWD are entirely Plan till 1999-2000, a certain portion is Plan and rest Non Plan in 2000-01, and 2001-02 onwards all of it is Non Plan.

Graph 2.9: Fixed Costs[25]

Total Fixed Costs

Years
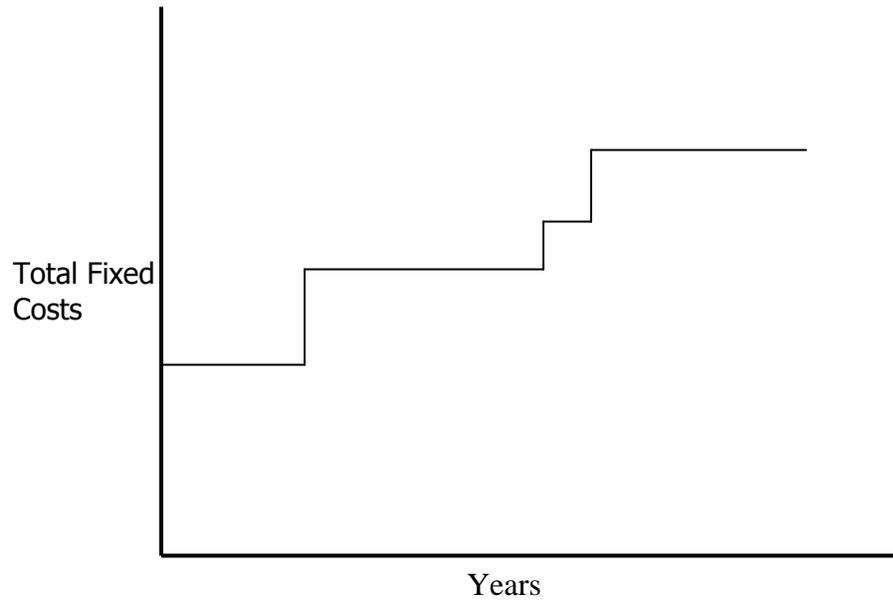
Graph 2.10: nominal expenditure by PWD in building schools
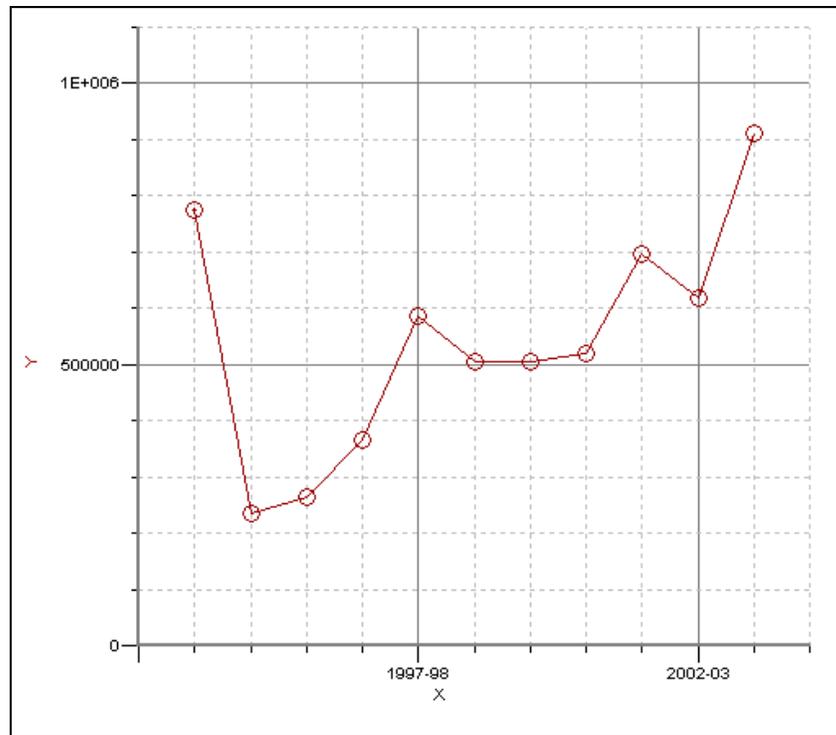
2.6 Composition of Directorate of Education's Expenditure

The Directorate of Education's expenditures are in broadly three forms: '*elementary and secondary education*', '*nutrition*' and '*scholarships*'. The expenditure on '*elementary and secondary education*' for all years constituted more than 95% of the total expenditure. Scholarships were about 0.5% of total expenditure from 1995-96 to 1998-99, however from 2000-01 onwards its share has increased to over 1%. Nutrition was less than 0.1% till 1998-99, but with the advent of the mid-day meals scheme, it increased to over 2% by 2002-03. Since 1998-99 the government has pursued policies to increase the enrolment in government schools through schemes like '*mid-day meals*' and '*stipend to girl students*', hence the focus has been on the quantity of education.

There are four main component of Directorate of Educations expenditure on primary and secondary education:

(I) *Grants-in-aid to local bodies for primary education*

In 2003-04 MCD schools had over 88% of students in primary (I-V) classes studying in state government, NMDC and MCD schools. The Directorate of Education and PWD provide '*grants-in-aid to local bodies*' (largely the MCD) for providing primary (I-V) education, additionally the MCD uses its own sources of revenue to fund its schools. In some senses primary education is Delhi is reasonably decentralised where 'standard setting and monitoring' is done by the state government and schools are managed by the MCD. The MCD is funded by various departments of the state government and every year it has to justify these expenditures to the departments. The MCD also has elections at various levels. However the quality of education provided by the MCD is so poor that "a study conducted by Social Jurist found that more than 80% of the children who pass class V from MCD schools do not know how to read or write their own names" (Delhi Citizens Handbook 2003).

Lant Pritchett and Varad Pande in their paper *"Making Primary Education Work for India's Rural Poor – A proposal for Effective Decentralization"* rightly argue that the quality of education is a big problem especially for the poor and the main reason is the lack of accountability. They propose 'effective decentralization' whereby '*standard setting and monitoring*' will be done by state governments, and '*Asset Creation and Operation*' by low-level Panchayat Raj Institutions (PRI's). And because PRI's are closer to the customers, there will be greater degree of accountability (through elections) leading to improvement in the quality of education.

There are a number of reasons why the solutions proposed by Lant Pritchett and Varad Pande are unlikely to be effective. Firstly, it is incorrect to think than consumer interests will be represented in political processes like elections. The MCD and PRI's are no different from any other political body in India where the election results are more a reflection of the desires of 'interest groups' rather than 'consumer preferences"[26].

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[26] Rama Bijapurkar states that the "biggest market in India is not toilet soaps, bicycles or wheat. It is the election market, comprising of several brand of parties, an enormous consumer base, and periodic purchase opportunities… In a normal market, brands and consumers' are usually talking about the same issue; if they are not, then some brand steps into the disconnect, corrects the situation, and 'gains from it'. However, in the Election India market, there is a total disconnect between brand talk
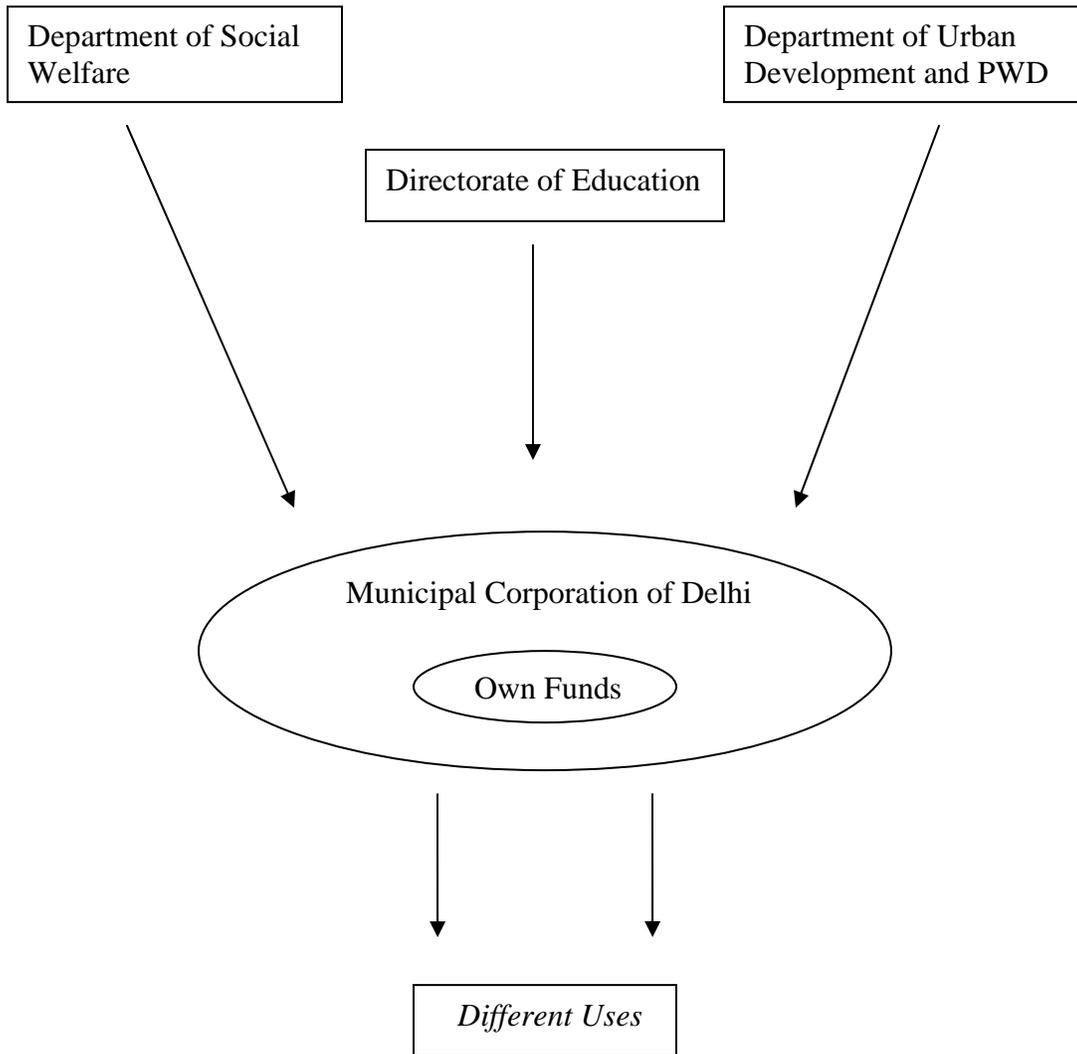
Secondly, the notion that one government body will be able to set standards and monitor another is incorrect; there are no incentives to do so. Every year the MCD sends a Request for Grants to the Directorate of Education demanding crore of Rupees. Year to year the document remains largely unchanged, except for the numbers. The document for the year 2003-04 consists of approximately 2500 words where it mentions how many new posts it wants to create, welfare schemes it wants to run, and the money required for the purpose (Request for grants from Directorate of Education 2003, 571-581). However in the entire document there is no mention of attendance rates, drop out rates, over crowding in schools, quality of education being imparted, etc[27]. In other words, input (money) is not compared to output (student performance). Basically, both the MCD and Directorate realize that the latter has to fund the former every year, and because its public funds (as opposed to private) accountability simply does not exists. Thirdly, the federal structure of funding is problematic. The funds flow from more than one organization into the MCD and it has its own sources of funds too. As a result, it becomes extremely difficult for any of the funding organizations (not connected amongst themselves) to appropriately monitor the use of these funds[28]. Due to all these reasons accountability is lacking and any further decentralization is unlikely to significantly improve the system.

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and consumers talk…Consumers are saying I want *bijli*, *sadak*, *paani*, law and order, education, health…Brands are fighting on totally different battle fronts of glorious past achievements, of the good, bad and ugly of brand ambassador personalities, of religious history, etc" (Economic Times, 15 August 2005).

[27] In state government schools Rs 300 is provided as uniform subsidy rather than uniforms because it assures delivery on time, reduces organizational problems, and corruption. However, the MCD does not seem to learn from the Directorate of Education as it continuous to give "one set of summer dress and one jersey." (document of MCD)

[28] A senior official in the Directorate of Education comically commented that the flow of funds and expenditures of MCD are so dubious that to build a road it would take money from PWD, Directorate of Education (because the road is in front of a school) and Department of Social Welfare (because its in a slum area); one road is build with three times as much money!

Diagram 5

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┌─────────────────────┐                           ┌─────────────────────┐
│ Department of Social │                           │ Department of Urban │
│ Welfare             │                           │ Development and PWD │
└─────────────────────┘                           └─────────────────────┘
           \              ┌──────────────────────┐              /
            \             │ Directorate of       │             /
             \            │ Education            │            /
              \           └──────────────────────┘           /
               \                     │                      /
                ↓                     ↓                     ↓

                    ╭─────────────────────────────────╮
                   │    Municipal Corporation of Delhi  │
                   │         ╭─────────────╮            │
                   │         │  Own Funds  │            │
                   │         ╰─────────────╯            │
                    ╰─────────────────────────────────╯
                              │           │
                              ↓           ↓
                        ┌──────────────────────┐
                        │    *Different Uses*   │
                        └──────────────────────┘
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(II) Government Secondary Schools

These are the recurring expenditure incurred by government secondary schools and have remained constant at 22-25% of total expenditure.

(III) Assistance to non-govt. secondary schools

95% of teachers salaries is provided to provided to government-aided schools, and in return the schools have to charge fees same as in government schools. Its has remained constant at 12-14% of total expenditure.

(IV) Additional schooling facilities in the age group 11-14 & 14-17

The main objective of this scheme is to provide additional schooling facilities "by opening new schools, upgrading and bifurcating existing schools" (Plan Schemes of Education 2004, 3). There are particular guidelines laid down by the Directorate as to when schools are to be opened, upgraded and bifurcated. This scheme basically aims at expanding quantitative provision of education in Delhi. It is the largest component (constituting over 40% of total expenditure) and is entirely revenue expenditure. For all years (except 1993-94) salaries constitute over 97% of the expenditure under this scheme, because it involves hiring new teachers and other staff so as to provide additional schooling facilities whether it is in existing schools or new schools. Expenditure under this scheme increased at a rate faster than total expenditure, as a result its ratio to total expenditure increased from 37% in 1993-94 to 50% in 2002-03.

Graph 2.11: Composition of the Directorate of Education's expenditure (1993-94 prices)
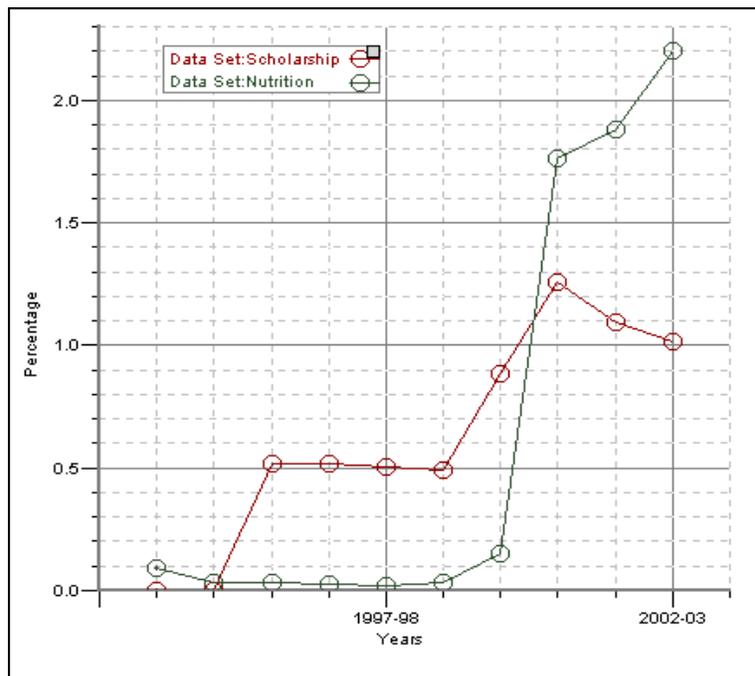
Graph 2.12: Composition of Directorate of Education's
expenditure on elementary and secondary education
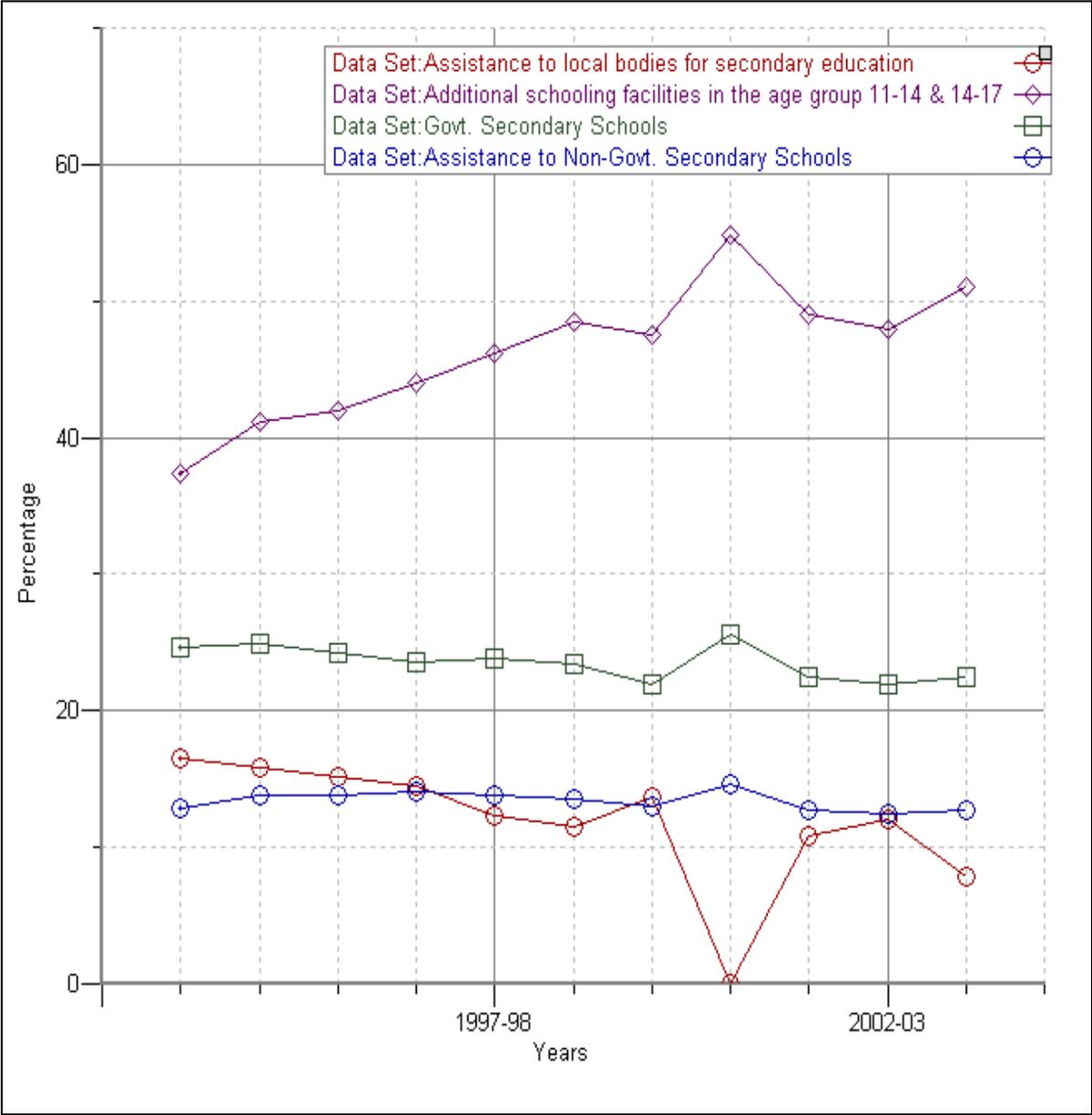
There are five minor components:

- Inspection
- Teacher Training
- Assistance to local bodies for secondary education
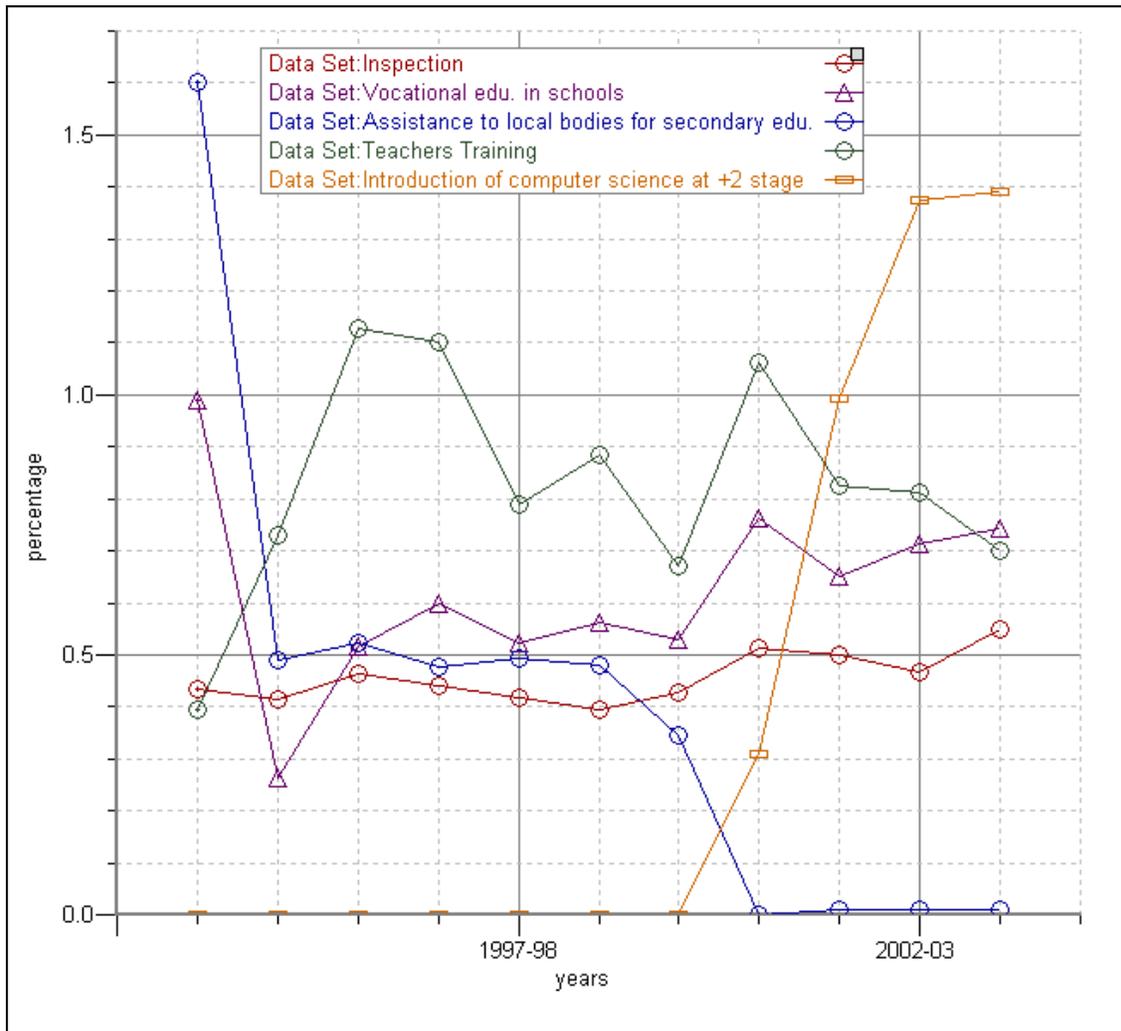- Vocational Education in schools
- Introduction of computer science at +2 stage

Graph 2.13: Minor components in Directorate of
Education's expenditure on elementary and secondary education

2.6.1 Inspection

From 1993-94 to 2002-03, expenditure on inspection increased by 5.9 folds, at an average annual rate of 21.9%. It constituted approximately 0.4% of total expenditure from 1993-94 to 1999-2000, since then it increased to 0.5% from 2000-01 to 2003-04. The Plan expenditures have varied significantly, after a steady increase from 1994-95 to 1996-97, it declined to low levels from 1997-98 to 1999-2000, and then increased considerably by 21 folds from 1999-2000 to 2001-02. There are two points to note: firstly, the increase in Plan expenditure from 2000-2001 onwards shows that there is a policy initiative to increase the level of inspection. Secondly, it is the increase in Plan Salaries that has lead to the growth in Plan expenditures, as Plan salaries as a percentage of Plan expenditure grew from 0.72% in 1998-99 to 50-89% from 1999-2000 to 2002-03. Therefore, clearly the policy initiative has been largely in the form of hiring more inspectors, because only the salaries paid to those newly hired staff are included in Plan Salaries. It is interesting to note that as 'Inspector-Raj' is declined in other sectors of the economy, in the education sector this phenomenon has increased considerably in the past few years!

Graph 2.14: Plan and Non Plan expenditure on Inspection (1993-94 prices)
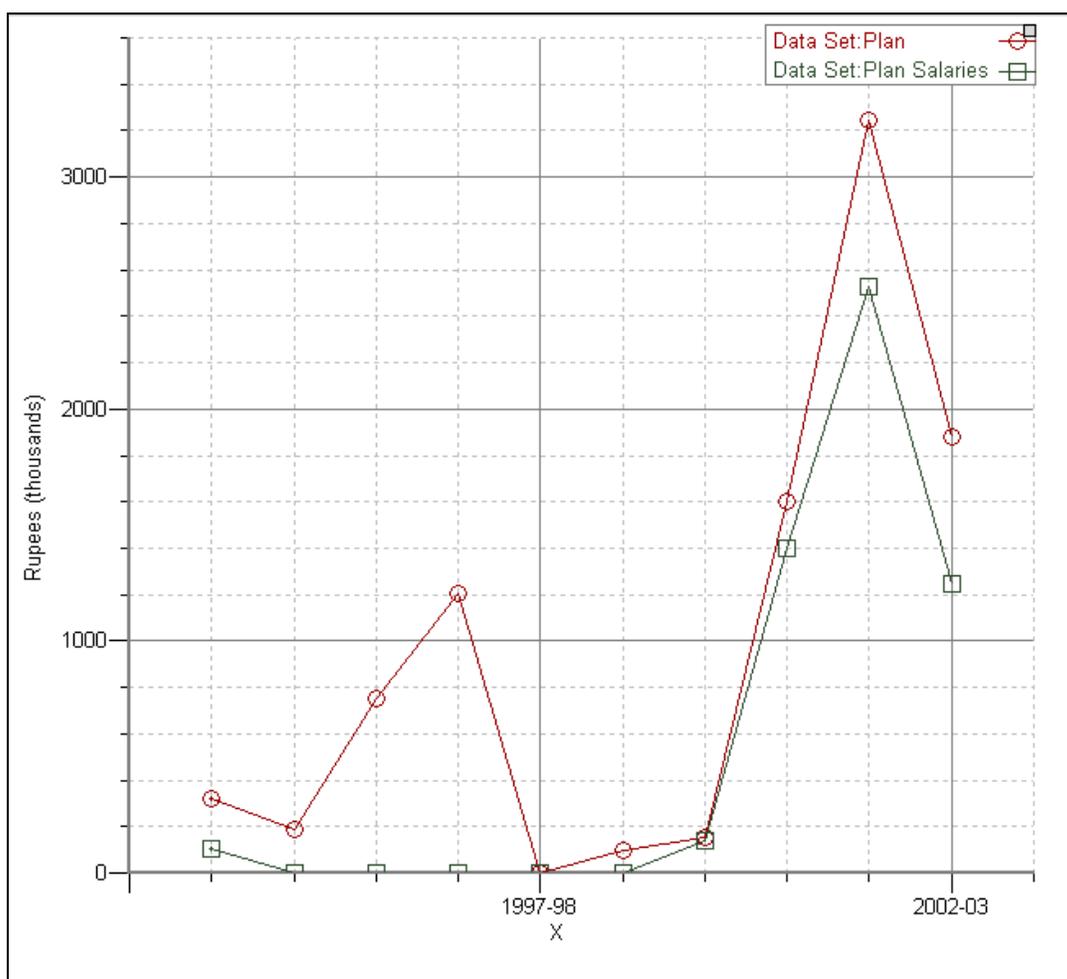
2.6.2 Teachers' Training

The quality of education imparted in schools, amongst other factors, heavily depends on the quality of teaching. "Teaching is a complicated and highly technical job. In order to make teaching effective and meaningful every teacher should not only know the subject matter but also the art and science of teaching…" (Dash 2000, 133). Moreover in a metropolitan of the nature of Delhi, students are from various socio-economic, cultural and religious backgrounds, and hence teachers should ideally be sensitive to the diverse nature and needs of the students. Teachers' training, amongst other broad and general objectives, also helps teachers understand and utilize latest techniques of imparting education; and hence is an essential investment in human capital that will return benefits for a number of years.

We make two assumptions:

An increase in the expenditure on teachers training improves the quality of teaching[29].
An improvement in the quality of teaching improves the quality of education imparted.

The trends in expenditure on teachers training may be divided into two phases: Phase I (1993-94 to 1998-99) and Phase II (1998-99 to 2002-03). During Phase I expenditure increased by 13 folds in 6 years, at an average annual rate of 67%. However, in Phase II there are fluctuations and little growth in expenditure as expenditure in 2002-03 is 13% less than in 1997-98. For 6 out of 8 years from 1996-97 to 2002-03 the percentage of expenditure on teacher training was less than in the previous year. If our two assumptions are true, ceteris paribus, there is little improvement or even a decline in the quality of education since 1997-98, especially considering the fact that as enrolments and number of teachers increased there should have been a continues increase in the expenditure so as to maintain the quality.

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[29] We are assuming that a y% (y>0) increase in expenditure on teachers training leads to an x% (x > 0) increase in the quality of teaching. We make no assumptions about efficiency; x < = > y.

Graph 2.15: Expenditure on Teacher Training (1993-94 prices)
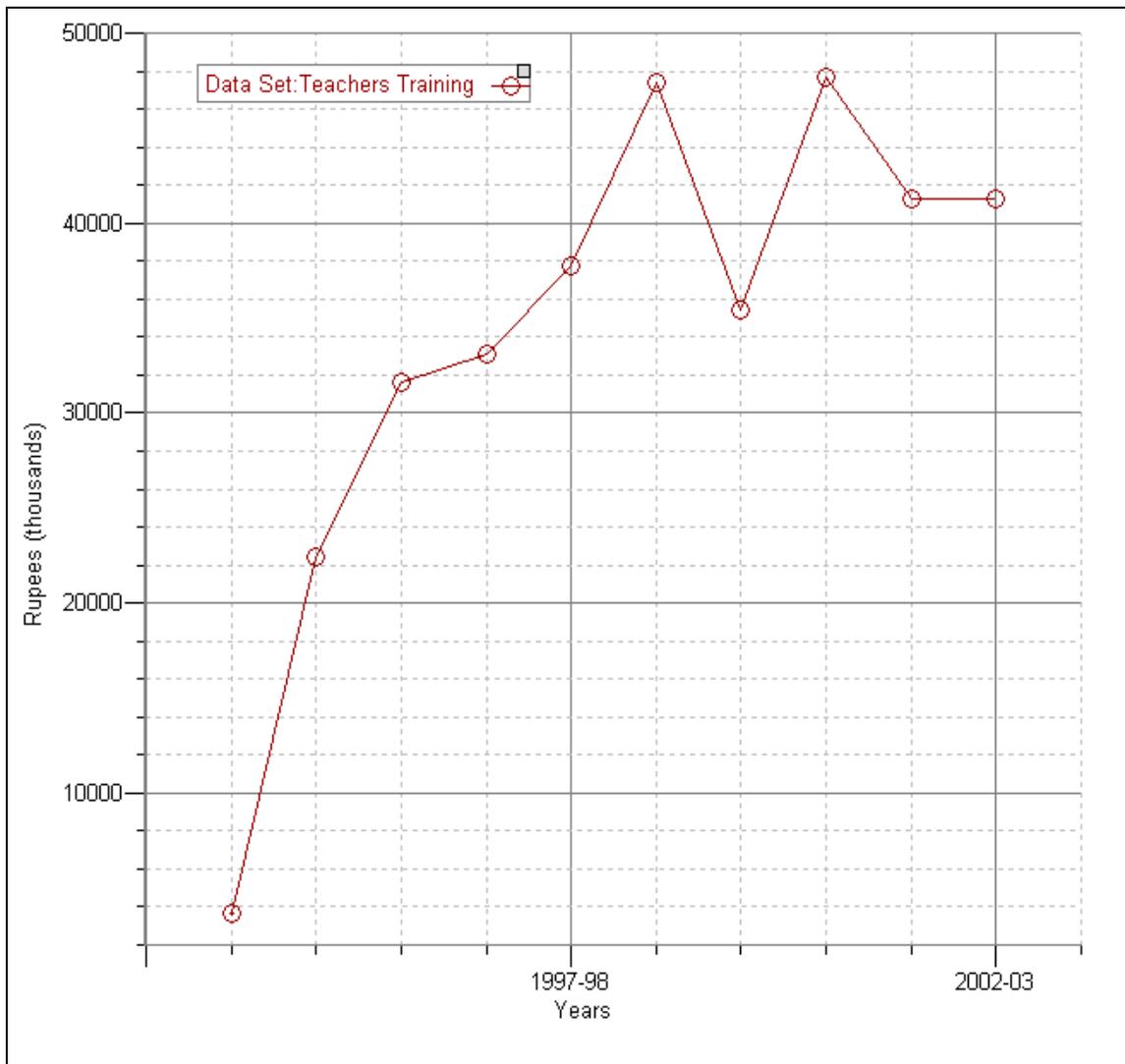
2.6.3 Assistance to local bodies for secondary education

The trends in '*grants-in-aid to NDMC for secondary education*' may be divided into two phases: Phase I (1993-94 to 1999-2000) and Phase II (2001-02 to 2002-03). There is a significant decline in the aid in Phase II as on the average it is only 2.4% of that in Phase I. All the aid was Non Plan till 1999-2000, however no aid was provided in 2000-01, and from the next year onwards all the aid is Plan. According to officials in the NDMC, the drastic decline in grants-in-aid is because of the decrease in the enrolment in NDMC schools. In just one year (2001-02 to 2002-03) enrolment declined by a massive 15.1% because of clearance of JJ colonies and other unauthorized settlements from NDMC lands; as these residents were 'cleared off' their children dropped out of the schools.

Graph 2.16: Grants-in-aid to NDMC for secondary education (1993-94 prices)
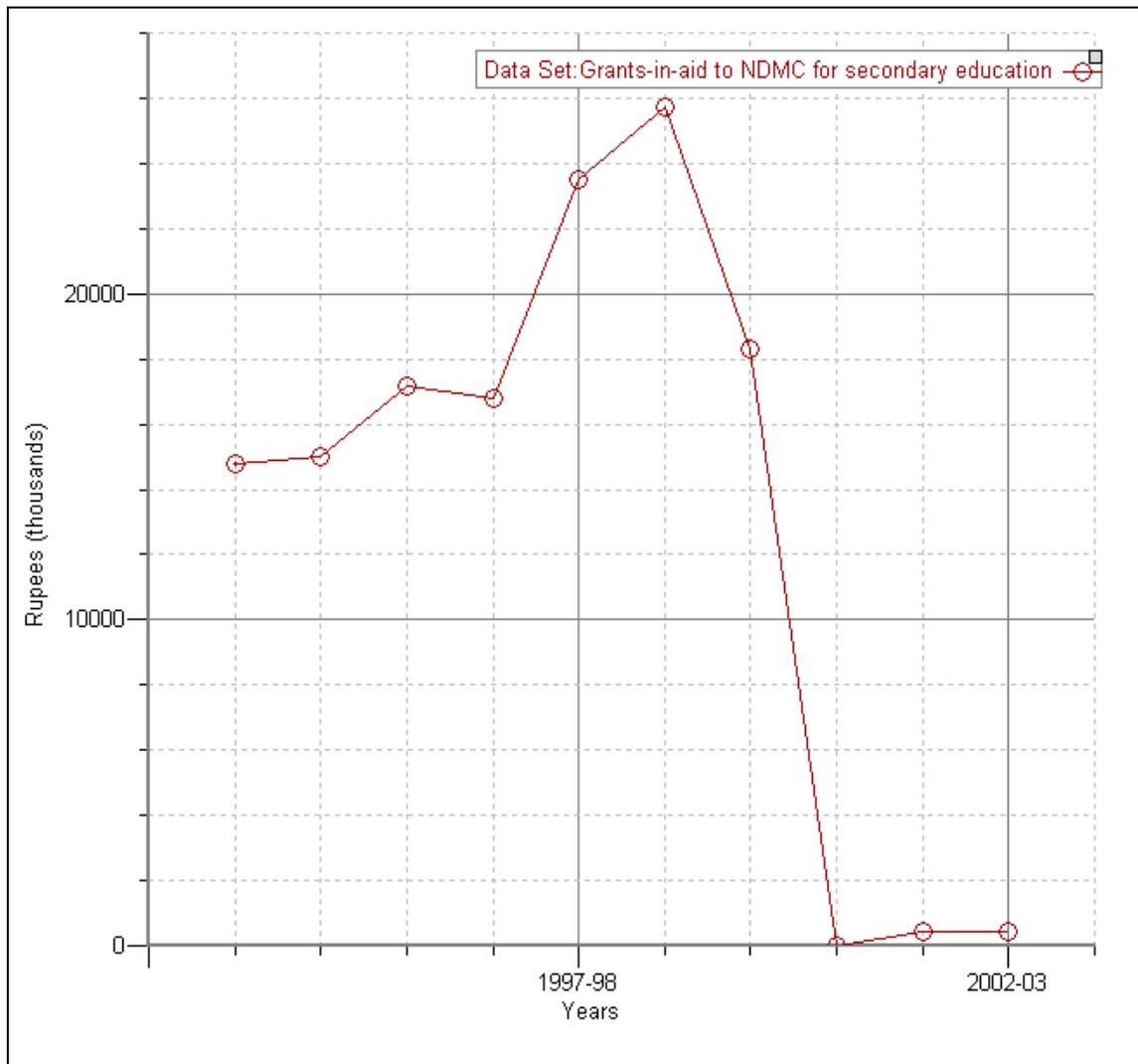
2.6.4 Vocational Education

The vocational education programme was started in 1977-78 (Annual Plan of Delhi 2004-05, XV), and expenditure under the scheme (1993-94 to 2002-03) increased by about 4.0 folds at an average annual rate of 16.5%; as proportion of total expenditure it grew from 0.3% in 1993-94 to 0.7% in 2003-04.

There are a number of problems with regards to the government's approach towards vocational education. Firstly, there is a tendency "to view vocational and general education as substitutes for each other rather than see them as essentially complementary and hardly substitutable" (Foster 1965, 615) because employers tend to look for both to certain degrees. Vocational education is meant for those "pursuing higher education without any particular interest", it is viewed as a *default* option and not as a genuine career option.

Secondly, by imparting vocational education the government aims "to reduce mismatch between demand and supply of skilled man power". As the process of liberalization, privatization and globalization continue the demand for labour would largely and increasingly be from the private sector. The supply of skilled labour is a variety of sources, including government schools, private schools, universities, existing pool of unemployed, migrants and so on. Any attempt to reduce the mismatch between demand and supply of skilled labour would require estimating the total demand for skilled labour in the economy every year and then subtracting the supply of the same from all sources other than government schools, so as to calculate the unsatisfied demand for skilled labour. The government will then have to produce skilled labour equivalent to this unsatisfied demand. Though the process may seem rather naïve, the government is likely to make large miscalculations. The government aims to diversify 30% of the students at +2 stage towards vocational education, however there is no scientific justification of the number. Moreover, while addressing the issue of mismatch between demand and supply of skilled labour it is erroneous to regard vocational education as a homogenous category. Electronic technology, automobile technology, life insurance, auditing and accounting, horticulture, dairying… are all vocational education course of the government. The demand and supply of skilled of each of these particular skills have to be matched. Dhruv Raina, Associate Professor at Jawaharlal Nehru University, argues that these issues are of even greater importance with the advent and growth of the knowledge economy "where knowledge itself becomes a factor of production and plays a central role in driving economic and social development… the number of vocational courses available on the shelf is disproportionate to the jobs available in the market. Besides, the workforce graduating from these courses is most efficient within a very narrow band of technological operations. But given the narrow set of skills imparted, this workforce is very rapidly rendered structurally unemployed. This phenomenon was observed in western societies within a couple of decades of micro-electronic revolution, wherein highly qualified technological professionals found themselves and their skills obsolescent by the time they reached their mid-30's" (Economic Times, 2 August 2005). It is unlikely that the government would be able to reduce the mismatch between demand and supply of skilled labour (if there is any), it is more likely to aggravate it, and in either case there would be waste of scarce resources in the process.

Thirdly, the government claims that steps "will be taken to see that the substantial majority of the products of vocational courses are absorbed by wage/self employment" (Annual Plan of Delhi 2004-05, XV). Though there is no mention of any specific steps,

"there seems to be a virtual avoidance of the fact that the production of a large number *(30%)* of specifically trained individuals does not, at the same time, create employment opportunities for them" (Foster 1965, 620). With a contracting government sector there seems to be little possibility of any "steps" to assure that the products vocational courses are absorbed by wage employment. There is thus a tendency to talk of employment irrespective of the "actual structure of job opportunities in the economy" (Foster 1965, 620).

Fourthly, one of the objectives of the schemes is "to reduce the rush for higher general education" (Annual Plan of Delhi 2004-05, XV). There seems to be an excess demand for higher general education, hence the aim should to expand the supply rather than artificially depress the demand for higher general education. The excess demand for higher general education is likely to be in consent with the structure of the growing economy and the demand for labour originating from it. "Reducing the rush" would only create further mismatches between the demand and supply of skilled labour.

It is indeed necessary to impart vocational education in the schools. However, the perceived mismatch between demand and supply of skilled labour of various kinds is not because of insufficient production of vocational education by the government but due to the fact that the government is engaged in the production of the service of education, and it is a monopoly in providing the syllabus. If there is excess demand for labour of a particular kind, then market forces would be such that wages paid to that labour would increase and parents would want their children to study the skills required. As a result the supply of labour would rise and there would no longer be excess demand. However because education is produced by the government and parents have no choice over syllabus, the market forces are not reflected in the kinds of education being imparted. Education vouchers along with freedom to schools to follow their own syllabus is likely to solve the problem, as parents will be able to respond to market incentives.

Graph 2.17: Expenditure on vocational education (1993-94 prices)
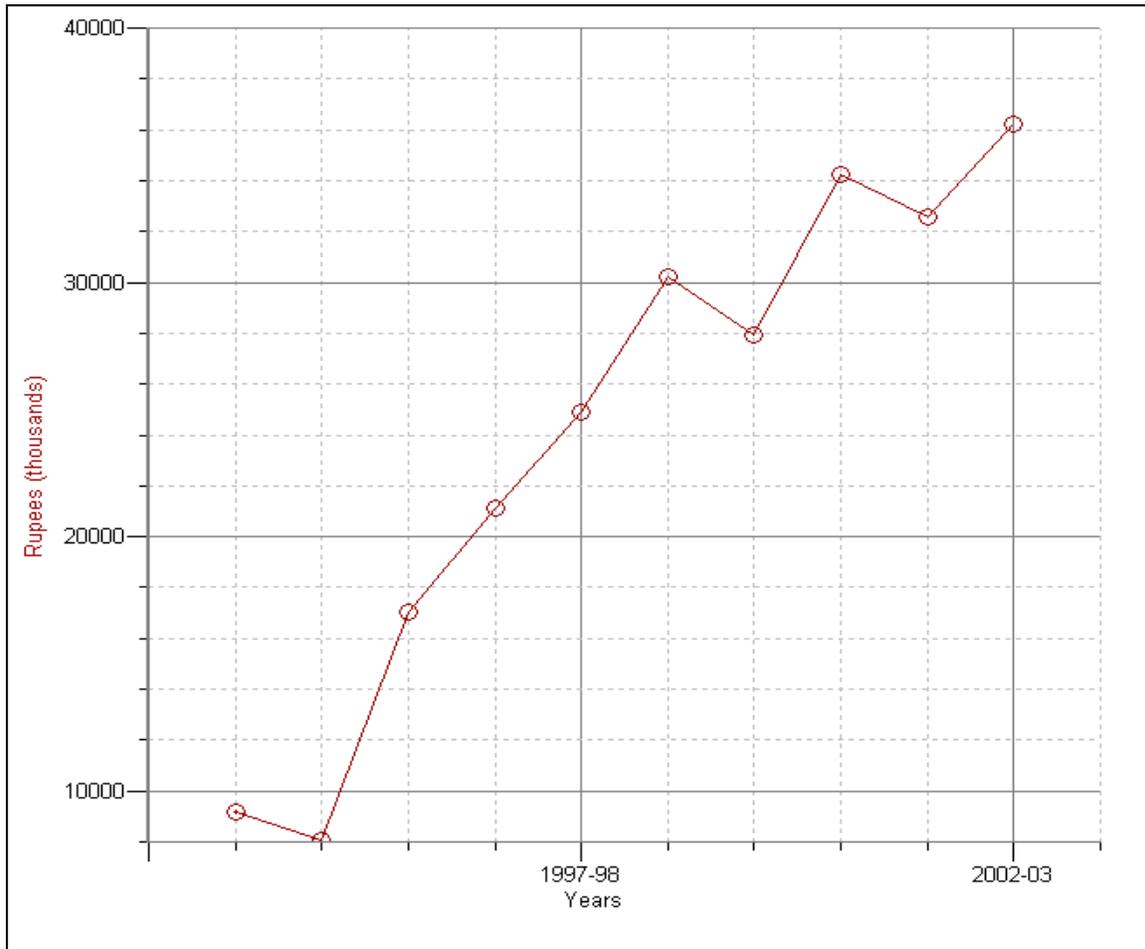
2.6.5 Introduction of Computer Science at Secondary Stage

Time-series of expenditure on '*Introduction of Computer Science at Secondary Stage'* are at current prices because the $GSDP_{fc}$ deflator is inappropriate as the prices of computers have not moved in tandem with general price level. The scheme was started in 2000-01 and by 2002-03 expenditure increased by 5.4 folds at an average annual rate of 70%. The real growth rate is most likely higher because computer prices have declined over the years. The IT "industry is expected to be the great employment generation industry in the new millennium…(and) the need for I.T. literacy will be crucial in all sections, since computers have become a crucial office management tool. In order to take advantage of the growing market, it is essential that the students at school level are equipped to handle the realities of the industry" (Annual Plan of Delhi 2004-05, XV). Though the I.T. boom began in the early nineties and the need for computer education along with it, there was no expenditure on computer education in government schools till 1999-2000. The government's response to the "growing market" has been at least about 5-10 years late. The scheme is only 4 years old and computer facilities are yet extended to all government schools. Moreover the scheme aims to provide computer education only from senior secondary level onwards.

Graph 2.18: Expenditure on Introduction of
Computer Science at Secondary Stage (1993-94 prices)
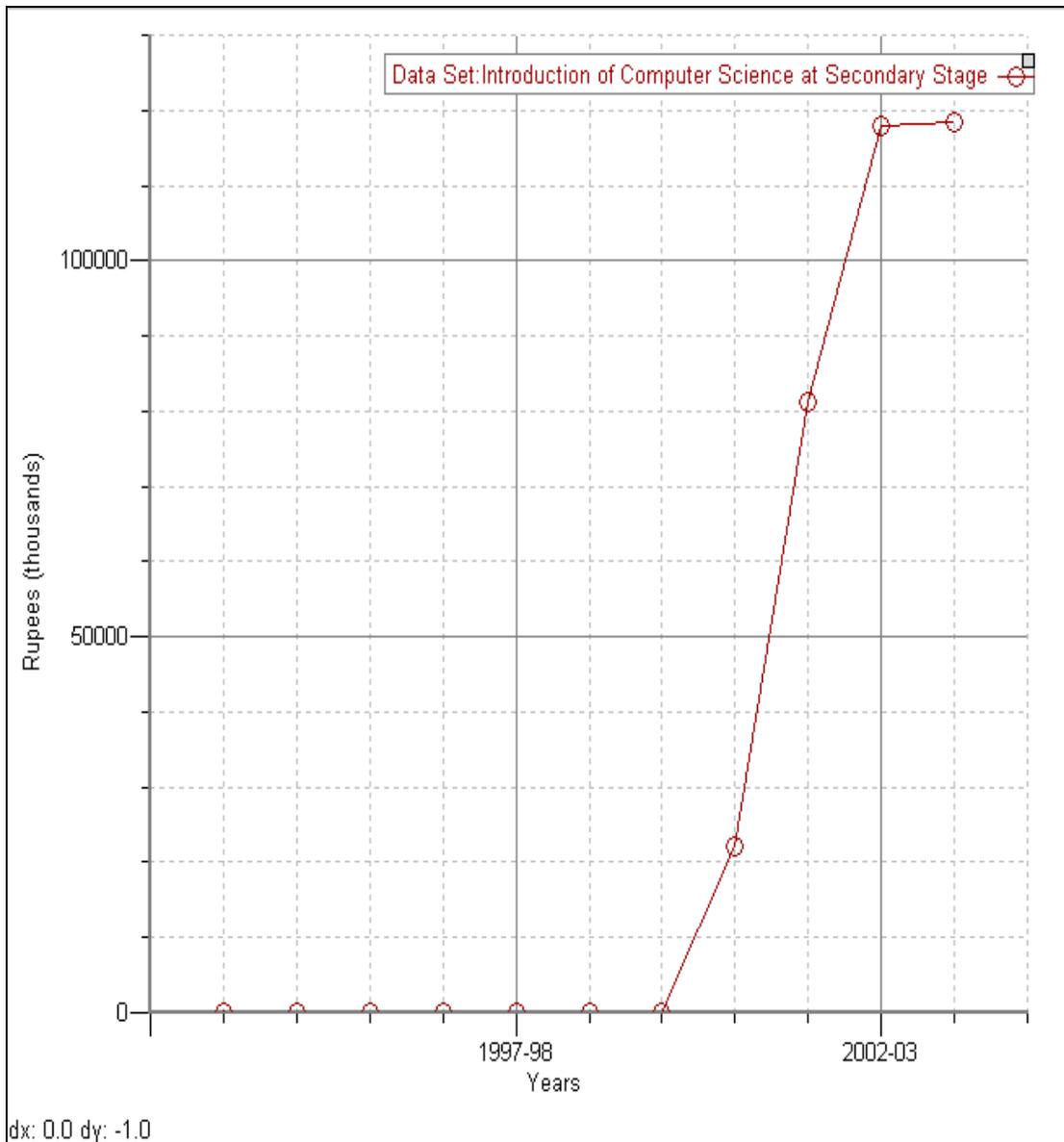
2.7 Non-Formal Education (NFE)

In spite of the Constitutional Directive to provide free and compulsory education to all children in the age group 6-14 "Delhi has about 400,000 child workers and about 100,000 street children… (who) are not able to enter or if admitted fail to sustain interest in formal schools" (Chakrabarty 2002). This is due to a variety of socio-economic reasons including child labour invariably due to the poor economic status of the parents and "is more true in case of girls, the disabled and children belonging to SC, ST, rural and urban slum communities" (Dash 2000, 17). NFE is a viable alternative (to formal education) to impart education to these disadvantaged children. The essential and differentiating character of NFE, vis-à-vis formal education, is its flexibility in timings, methods and place of instruction, and a need-based curriculum with issues relating to "rights and responsibilities, health, hygiene, nutrition, cleanliness …" (Chakrabarty 2002, 67). Social workers rather than full time teachers are recruited for NFE.

In light of the existing distress in Delhi the Directorate of Education began Budgeting considerable amounts for NFE since 1994-95, though Rs 381000 - 535000 (1993-94 prices) were Budgeted for the purpose from 1994-95 to 1997-98, not a single Rupee was actually spent! There was some increase in Actual expenditure in the two subsequent years; however even in 1999-2000 Actuals were only 2.4% (highest) of the Budget Estimate. Regardless of the past performance the Budget Estimate was increased by about 6 folds in 2000-01, however not a single rupee was actually spent! There was no amount Budgeted or Actually spent under this particular head since 2002-03. Essentially the scheme has been a failure, at least from the financial angle, and thus was dropped from 2002-03 onwards. Delhi certainly needs NFE to cater to over 500,000 children however the existing machinery failed to deliver the scheme as ratio of Actuals to Budget Estimates remained negligible.

Table XIV: Expenditure on NFE (1993-94 prices)

Year	Actuals	Budget Estimates	Actuals as % of Budget Estimates
1993-94	0	18	0
1994-95	0	535.5919	0
1995-96	0	424.6133	0
1996-97	0	403.3387	0
1997-98	0	381.9491	0
1998-99	1.390858	1043.144	0.133333
1999-2000	23.50531	979.3878	2.4
2000-01	43.30192	5648.076	0.766667
2001-02	0	3364.172	0
2002-03	0	0	0

2.8 Text Books

"The objective of this scheme is to provide prescribed course books to students of class 9th to 12th who are unable to meet expenditure on books due to dearth of resources… students coming from weaker sections of the society leave their studies before completion mainly due to the reason that their parents cannot afford to purchase books" (Annual Plan of Delhi 2004-05, XV)[30]. These books are issued to students for one academic session and returned to the book bank at the end of it. After three years the Principals are empowered to write off these used text books. There are no build in incentives, such as fines on damaging the books, so that the students take care of the books.

Expenditure on 'Text Books' increased by over 11 folds from 1994-95 to 2000-01, though there is some decline thereafter. The greatest increase was from 1999-2000 to 2000-01 during which the expenditure tripled in just one year, clearly due to a policy thrust. The approved outlay for the year 2004-05 is Rs 100 lac with *Physical Target* of 90,000 students, thus per student per month approved outlay is about Rs 10, but because these books are utilized for three years the figure reduces to about Rs 3. It is unlikely that lack of text books that cost less than Rs 10 per month is a major inhibiting factor. It is however necessary to provide these text books and other supplementary books on an instalment basis, as parents may not be able to finance all required materials at once in the beginning of the academic year.

Graph 2.19: Expenditure on text books (1993-94 prices)

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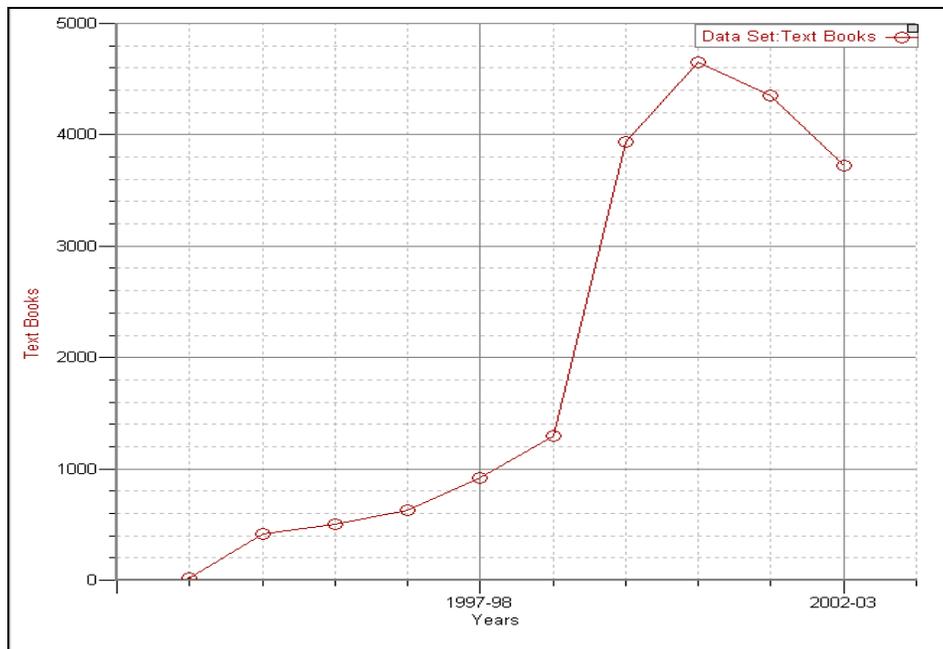
[30] Books would be provided to:
  (a) Boy students whose parental income is up to Rs 4000 per month
  (b) Girl students whose parental income is up to Rs 5000 per month

2.9 Salaries

From 1993-95 to 2003-04 salaries [31] as percentage of total expenditure remained relatively constant at an average of 77.5%. Therefore the labour intensity of the provision of the service of education is remained unchanged. Plan salaries, paid to new recruits, constitutes 5-11% of total salaries from 1993-93 to 1996-97, however the figure declined to less than 1% from 1997-98 to 2003-04.

Table XV: Salaries of the directorate of education current prices

Year	Salaries	Total exc. Grants of local bodies	Salaries as a percentage
1993-94	516284	757037	68.19799
1994-95	2163536	2822027	76.66603
1995-96	2494261	3272554	76.21757
1996-97	2854355	3706799	77.00323
1997-98	4261184	5450876	78.1743
1998-99	3878544	6797963	78.86046
1999-2000	5467634	6962748	78.52696
2000-01	5597224	7157226	78.20382
2001-02	5660245	7271435	77.8422
2002-03	5796129	7546065	76.80995
2003-04	6061539	7848193	77.23484

Graph 2.20: Plan salaries as a percentage of total salaries

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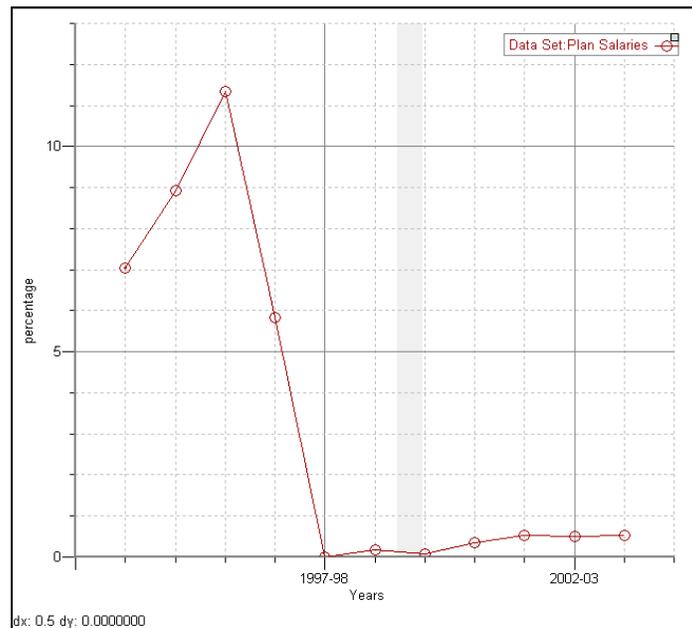
[31] To study the proportion of expenditure on Salaries and Over Time Allowance (OTA), the grants-in-aid to local bodies must be subtracted from the total expenditure because the method of utilization of these aids in terms of salaries and non salary expenditure is not available

Graph 2.21: Salaries as a percentage of total expenditure
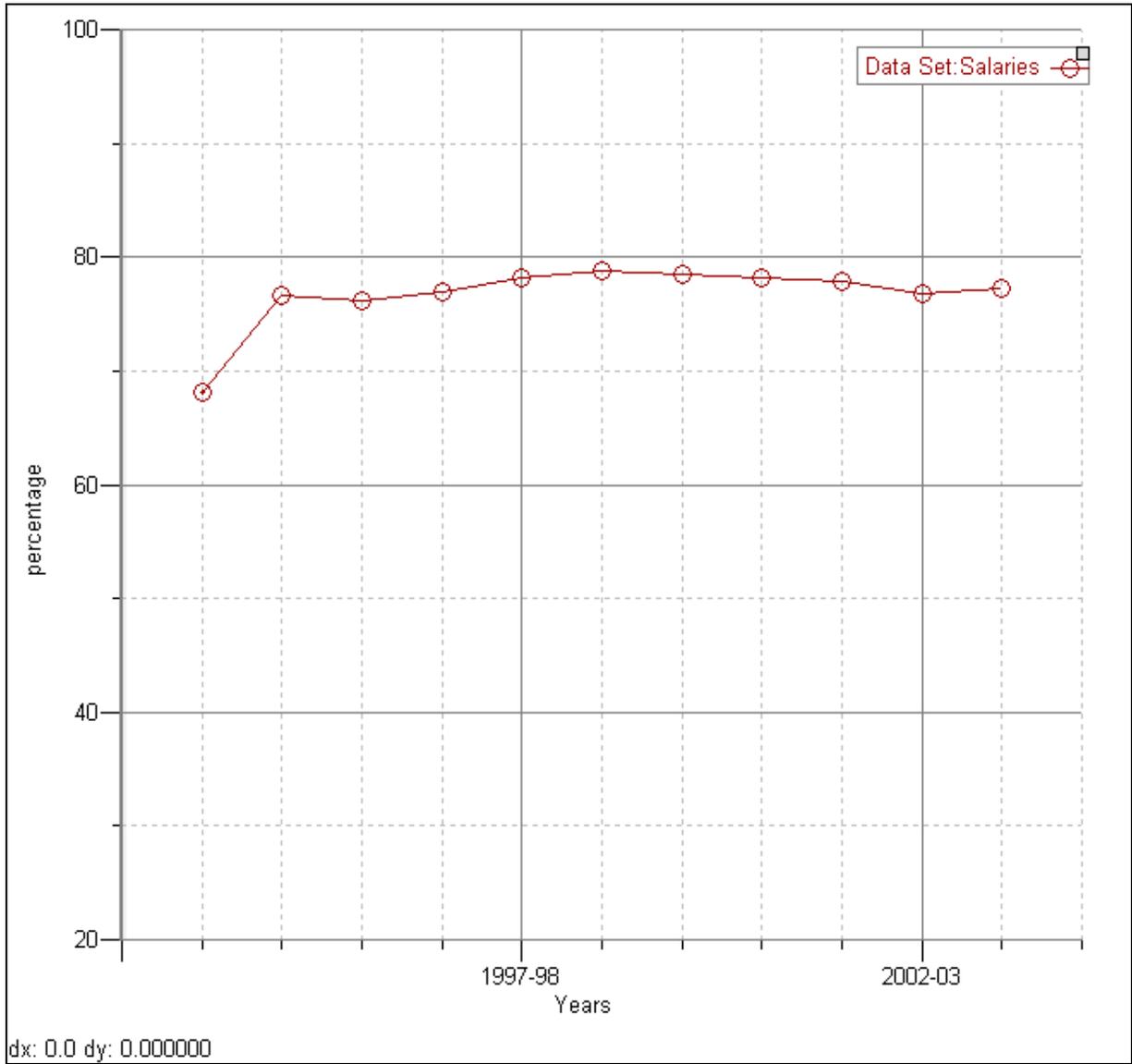
2.10 Special Component Plan (SCP)

SCP was introduced in the Sixth Five-Year Plan period and is the portion of expenditure meant exclusively for the benefit of Scheduled Castes (SC). This is in conformity with the comment of National Commission for Scheduled Castes and Scheduled Tribes that the "most important cause for non-development of SC/ST's is non-allocation of resources for their development", however the Commission remarks that though extra funds were provided to supplement the existing developmental effort "in practice these special programmes merely substitute the benefits available to SC's under normal developmental schemes", resulting in much lower investment than envisaged. (Nambissan and Sedwal 2002, 76). Interestingly, similar problems are encountered by the World Bank when it provides loans under certain conditionality. Often "every dollar received for a particular purpose simply frees a dollar for the government to spend in some other way. Donors may believe that they are affecting budgetary composition by earmarking but in general they are not" (Gilbert, Powell and Vines 2000, 62). World Bank has observed that governments with 'good' policies tend to use these extra dollars wisely, contrary to what government with 'bad' policies do. Similarly state governments with 'good' policies would tend to use SCP for improving the situation of SC's, however state governments with 'bad' policies need not necessarily do so.

In 1997-98 SC's constituted 19.05% of Delhi's population. In 1991 the literacy rate amongst the SC population of Delhi was only ¾ (57.6%) of the literacy rate amongst the general population (Economic Survey of Delhi 1998-99). Directorate of Education, Department of Social Welfare, and PWD spend a portion of their funds as SCP to reduce this adverse and undesirable disparity. Though SCP is meant exclusively for Scheduled Castes, the converse is not true. There are certain schemes such as '*Post matric scholarship to SC/ST*' {A.2(4)(3)(2)} meant exclusively for SC's but are not SCP. SCP expenditure by Directorate of Education and PWD are Plan but the Department of Social Welfare has both Plan and Non Plan SCP expenditure. To appropriately analyze expenditure meant exclusively for SCs, the schemes which are not SCP yet meant for SC's must be added to SCP. Expenditure meant exclusively for SCs as a percentage of total expenditure is decline from an average of 6.5% (1993-94 to 1996-97) to 4.27% (1997-98 to 2002-03).

In all categories of expenditure, except scholarships and nutrition, the Actuals to Budget Estimates ratio is less for expenditure on SCs as compared to total expenditure. Directorate of Education's Actual to Budget Estimate ratio is 101.8% for total expenditure on primary and secondary education however the figure is less than half at 44.7% for SC expenditure; and for all years the latter is less than the former. For the Department of Social Welfare since 1996-97 the ratio is less for SC expenditure as compared to total expenditure, though the difference is less stark. The greatest difference is for expenditure by the Department of Urban Development and PWD, the figure for total is 96.5% whereas for SCs is 11.5% (1994-95 to 2003-04).

Does the state machinery discriminate against SCs as a result of which Budgeted amounts do not reach them? Mostly likely not, because in the case of *scholarships* and *nutrition* the ratio for SC and total expenditure are approximately the same. The case of nutrition is different from other schemes both because it has a particular aim of mid-day meals and is funded by the Union Government of India. Though, the author is not in a position to make conclusive comments, the most likely reason is that the State faces severe difficulty in identifying SC population and justifying thereby that money utilized

for particular projects have gone exclusively to them. There are two proofs of this phenomenon. Firstly, the Government of Utter Pradesh in its Plan Document of 1982-83 states the "… list of such sectors whose outlays cannot be quantified separately for different classes of beneficiaries was prepared. Among such sectors or sub-sectors are …Education…". Secondly, there has been a "…continuous reduction in the Special Central Assistance allocation for the last three years by the Planning Commission *(due to the non-availing of funds by certain states including Delhi)*"… the Supreme Court has directed that without getting the utilization certificates, further grants shall not be released to states and UT's" (SCA Allocation).

However, why is there no difference in case of scholarships? The *scholarship* scheme is fundamentally different from the other schemes because once the government announces a scholarship, lays down the rules and regulation, and disperses the information (through the internet and booklets sent to heads of schools), the onus of utilizing the Budget Estimates by claiming scholarships lies in the hands of the public. By proving their eligibility SCs can avail of the money. In contrast in case of other schemes the onus of timely expenditure is in the hands of the government and the concerned population plays a much less important role. The government haunted by identifications problems and lesser desire (compared to the potential beneficiaries) to utilize the money in unable to disperse it.

Table XVI: SCA Allocation

Year	SCA allocation by the Planning Commission (Rs crore)	Index (%)
2000-01	423.00	100.00
2001-02	407.70	96.38
2002-03	371.62	87.85

Source: Press Information Bureau, Government of India.

Government

	General Category
	SC/ST Category

Government
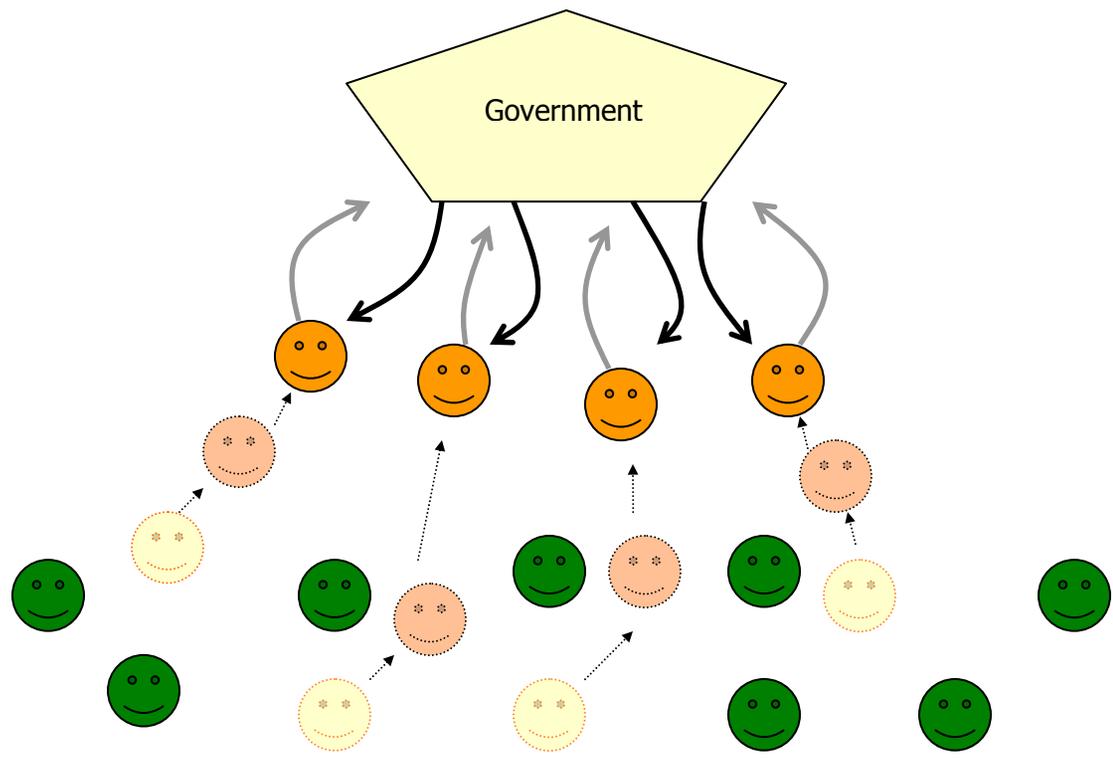
General Category

SC/ST Category

Demand of scholarship

Supply of scholarship

Graph 2.22: Expenditure on SCs as a percentage of total expenditure
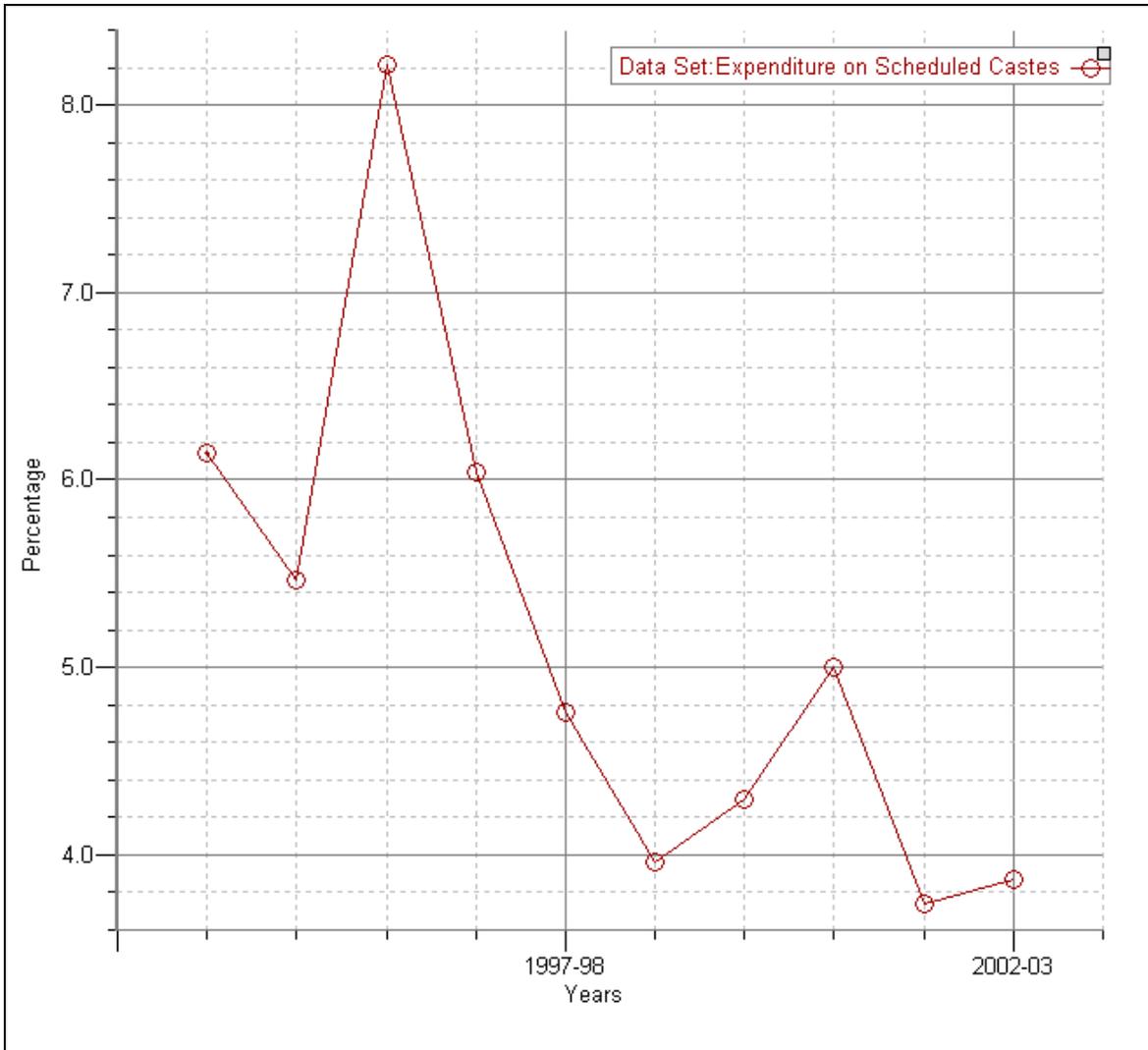
Graph 2.23: Actuals as a percentage of Budget Estimates of
Directorate of Education's expenditure on elementary and secondary education
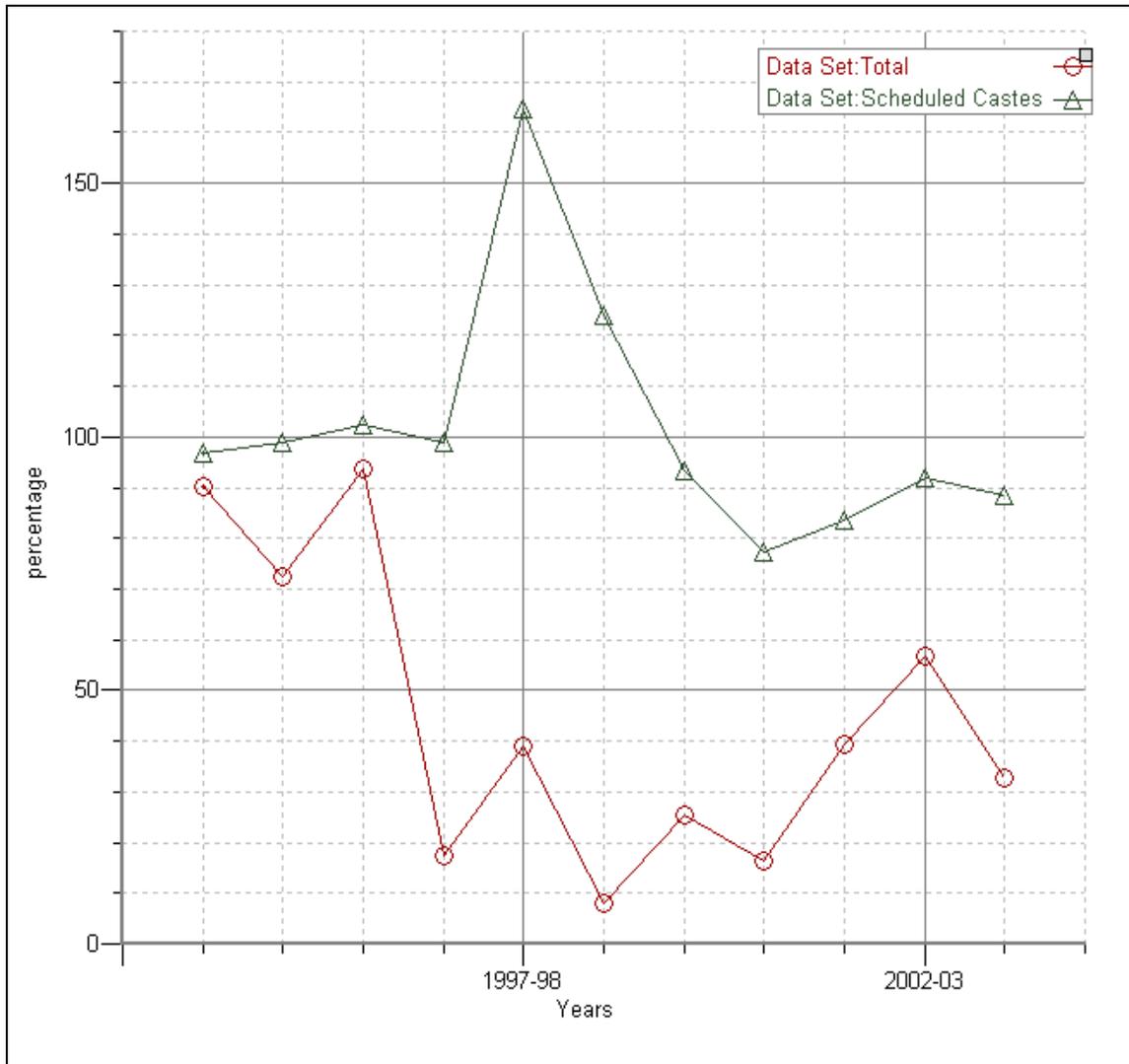
Graph 2.24: Actuals as a percentage of
Budget Estimates of Directorate of Education's expenditure on scholarships
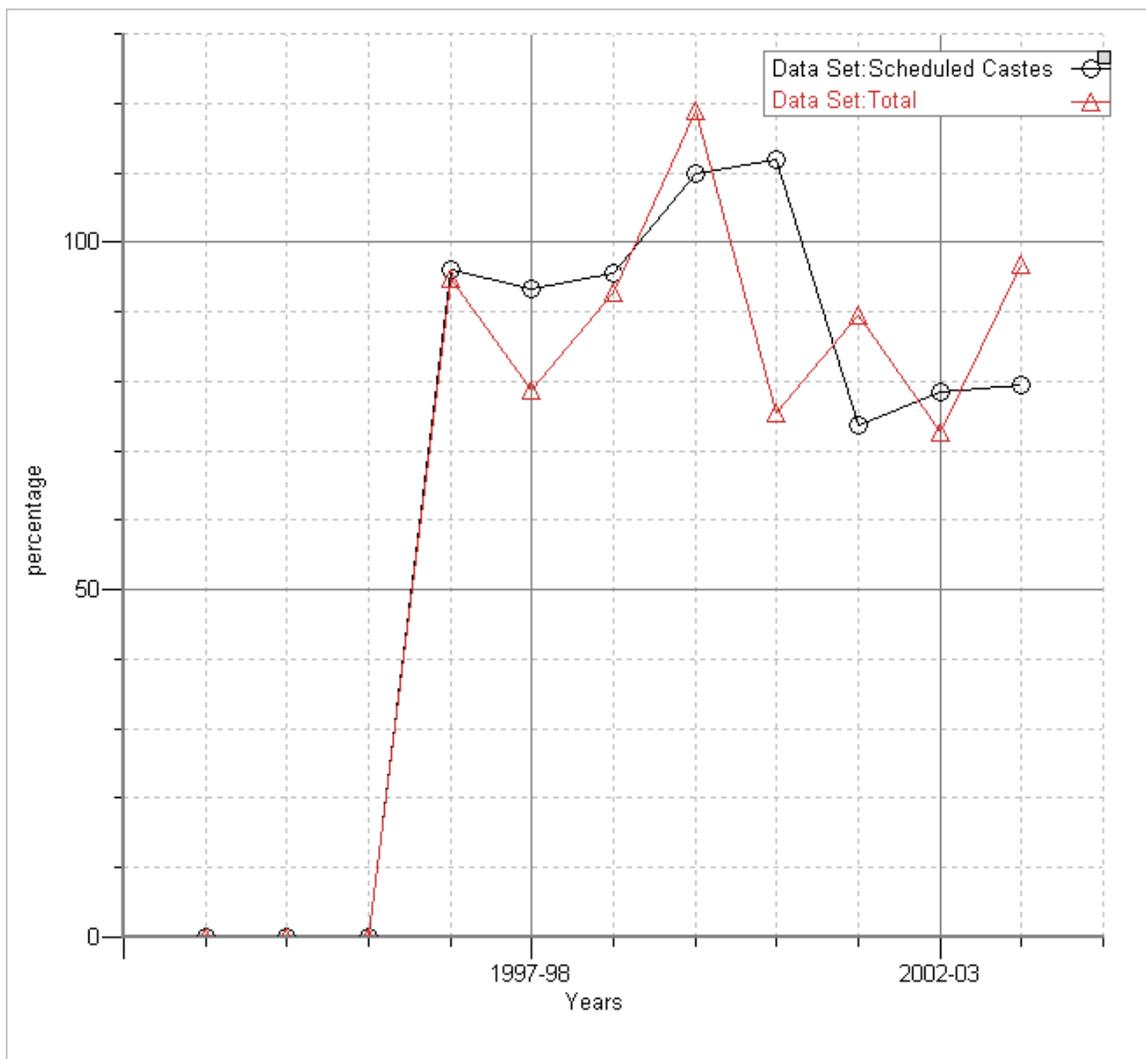
Graph 2.25: Actuals as a percentage of
Budget Estimates of Directorate of Education's expenditure on nutrition
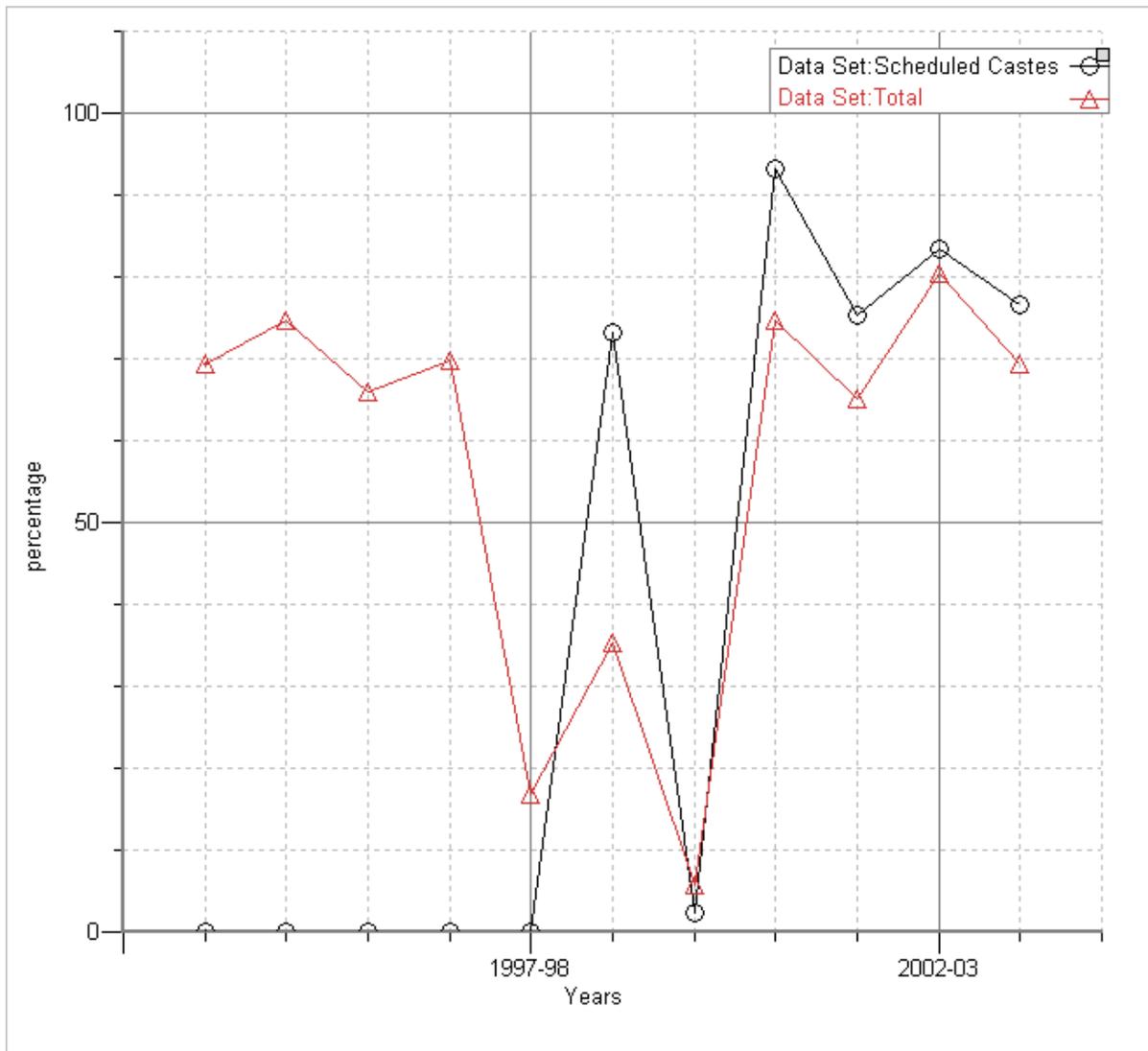
Graph 2.26: Actuals as a percentage of
Budget Estimates of Department of Social expenditure
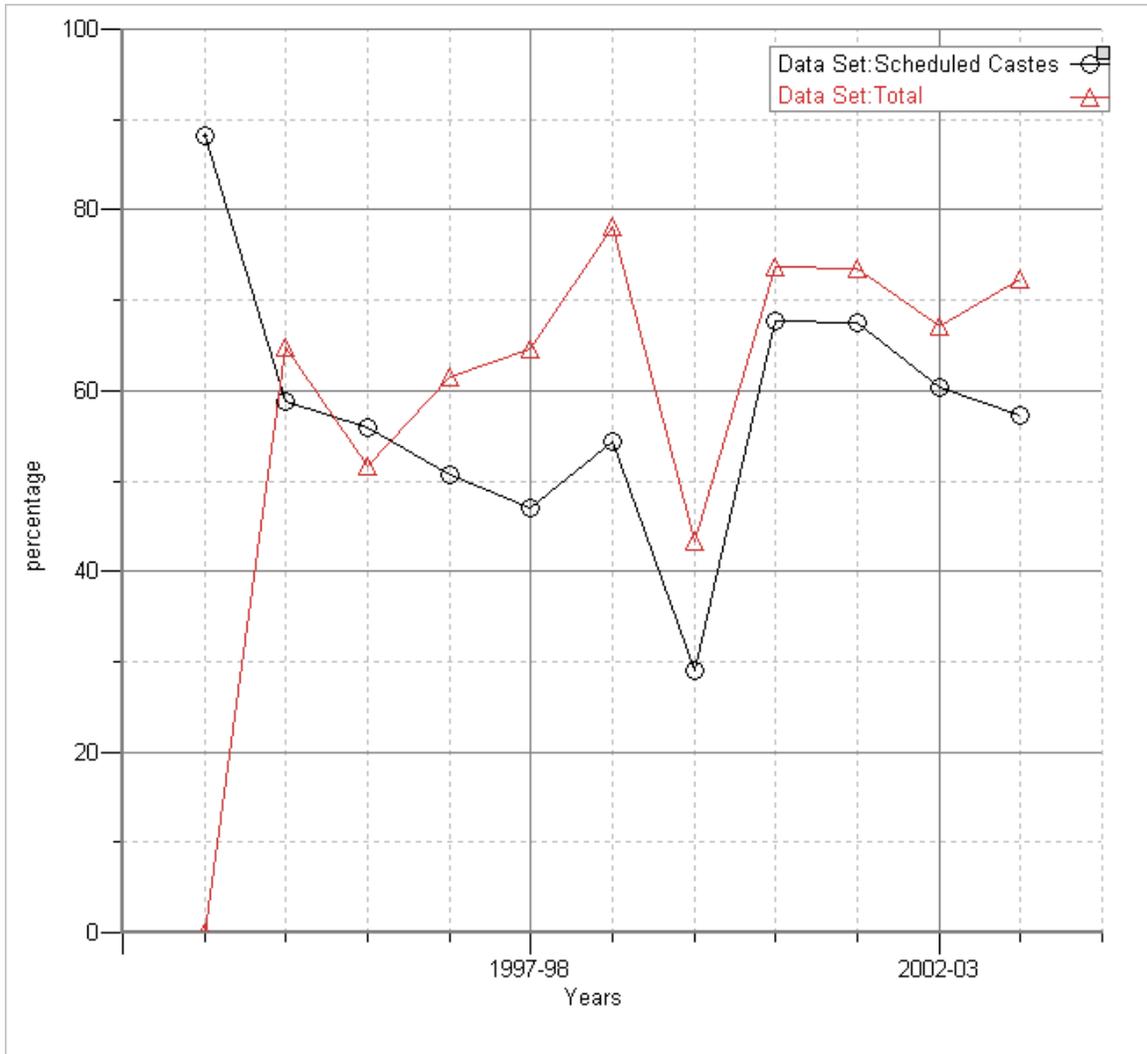
Graph 2.27: Actuals as a percentage of Budget Estimates of PWD's expenditure
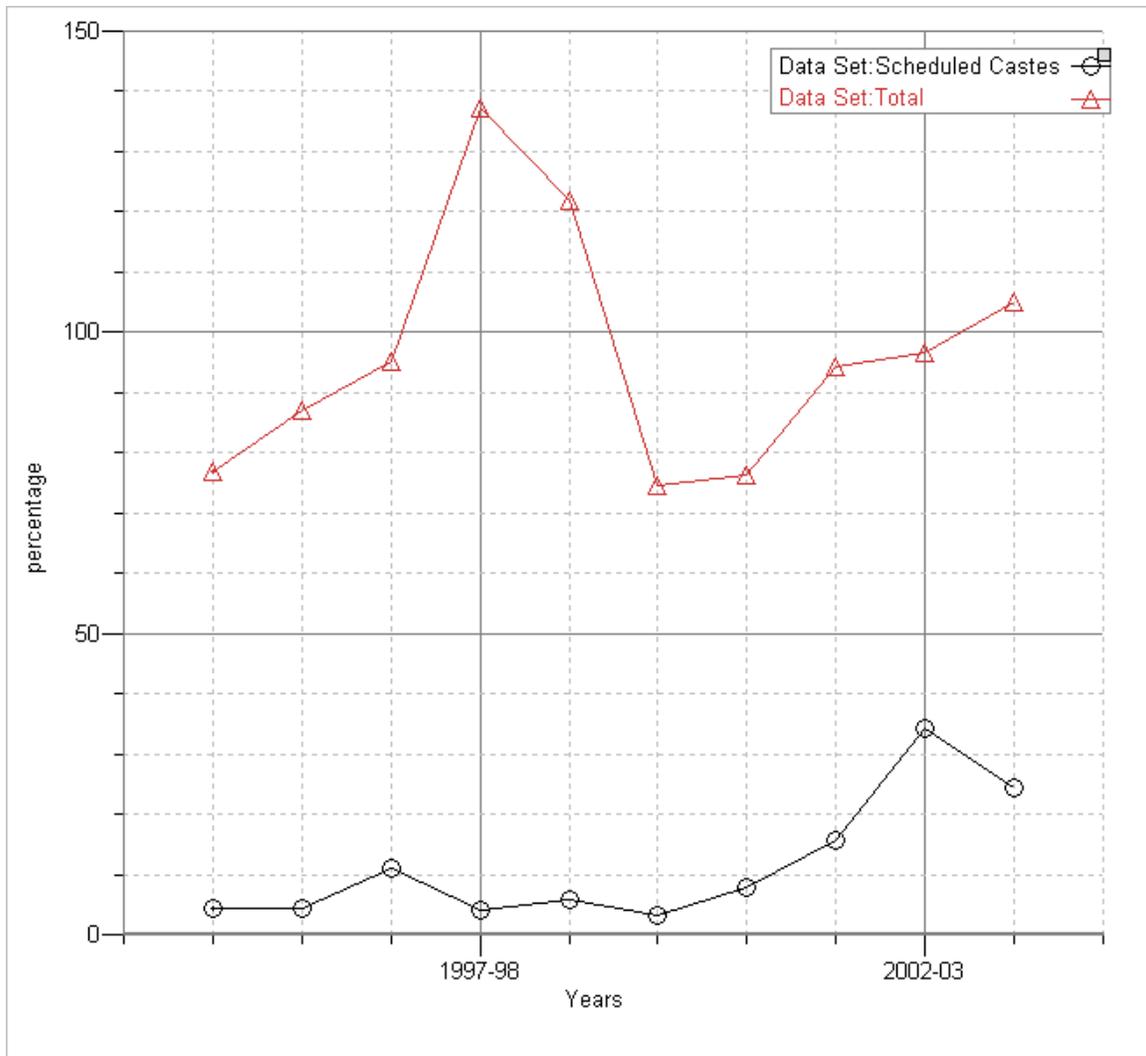
CONCLUSIONS

Government expenditure on education in Delhi is certainly reasonable. However the allocation of funds are politicized, flow of funds are dubious, and utilization of funds inefficient, leading to poor quality of education in government schools. The government's focus has been on increasing enrolment using schemes like *mid-day meals*, but there is little being done for improving the quality of education in schools as percentage expenditure on *teachers training* has declined. There seems to be no scientific basis for levels of expenditure on various schemes such as *vocational education*. The least powerful and most needy amongst the poor suffer the most. Females lag far behind males in literacy rates however only about Rs 100 more is spend on the former. Non-Formal education, run for street children and child labourer, has been dropped because the state machinery has failed to deliver it even after budgeting large sums. Interesting education is probably the only sector of the economy where *Inspector Raj* has increased over the past five years.

The is an urgent need to reform the system, possibly by adopting 'education vouchers and cash subsidy', and any discussion on levels of expenditure is fruitless before efficiency is increased significantly.

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Detailed Demand for Grants of the Government of NCT of Delhi 1993-94 to 2005-06.

Appendix I

Table 1: GSDP$_{fc}$ Deflators

Year	GSDP at factor cost at current prices	GSDP at factor cost at 1993-94 prices	Deflator
1993-94	2099179	2099179	1
1994-95	2584650	2350285	1.09972
1995-96	2839006	2410959	1.17754
1996-97	3380337	2726841	1.23965
1997-98	4123480	3149920	1.30908
1998-99	4748416	3302188	1.43796
1999-2000	5291356	3454859	1.53157
2000-01	6251751	3923373	1.59346
2001-02	6686613	4089990	1.63488
2002-03	7447448	4413543	1.68741

Expenditure incurred under the following schemes have been excluded from x:
- (i) Grants-in-aid to local bodies for primary education (A.1(1)(3))
- (ii) Assistance to Madarassas for teaching English/Math, Gen Science….(A.(1)(4)(1))
- (iii) Integrated Education for Disabled Children (A.1(1)(5)(5))
- (iv) Financial Assistance for the Modernisation of Madrassas (A.1(1)(5)(9))
- (v) Assistance to local bodies for secondary education (A.1(2)(8))
- (vi) Grants to local bodies for mid day meals

Following heads of expenditure are included in z:

D.1.1 Head Quarters:

Elementary = {(expenditure on elementary education excluding head quarters/total expenditure on education excluding head quarters) x 100} x expenditure on head quarters

Secondary = {(expenditure on secondary education excluding head quarters/total expenditure on education excluding head quarters) x 100} x expenditure on head quarters

D.1.2 Senior Secondary Schools: *entirely secondary*
D.1.2.A Secondary Schools: *entirely secondary*
D.1.3 Middle Schools: *entirely elementary*
D.1.4 Primary Schools: *entirely elementary*
D.1.10 Mid day meals: *entirely elementary*

For the following Five heads are clubbed together as 'Others' and the following formula is used:

D.1.20 Introduction of yoga in NDMC Schools:
D.1.21 Cash Awards to teachers on Best Performance
D.1.22 Supply of Canvas Shoes
D.1.23 Stipend to SC/ST Families for motivation of Studies
D.1.24 Expansion of Elementary Education (6-11) and (11-14)

Elementary = (elementary enrollment as a percentage of total enrollment (I-XII) x expenditure)
Secondary = (secondary enrollment as a percentage of total enrollment (I-XII) x expenditure)

D.1.25 (10+2) Pattern of Education: *entirely secondary*
D.1.26 Educational Vocational Guidance : *entirely secondary*

Expenditure of Social Welfare Department included in s_1 and s_2

1. C.1(1)(3)(5)-free supply of books and stationary to scheduled caste students in schools(SCP)
2. C.1(1)(3)(14)-Merit scholarship toSC/ST/OBCand Minority Students-ClassVItoVII
3. C.1(1)(3)(15)-Open Scholarship to SC/ST/OBCand Minority students-class-V
4. C.1(1)(3)(16)-Reimbursment of Tution fee in Public School
5. C.1(1)(3)(17)-Post Matric Scholarship Scheme

First: since 83% of the students in NDMC, MCD and state government schools are in elementary classes, we assume that the same holds true for SC students and divide it based on this ratio.
Second and Third are entirely elementary
Fourth and Fifth are entirely secondary

Table: Total enrolment in All recognized schools in Delhi

Year	Elementary (I – VIII)	Secondary (IX – XII)	Total (I – XII)	Elementary as % of Total	Secondary as % of Total
1998-99	2035567	519738	2555305	79.6604	20.3396
1999-00	2091465	530165	2621630	79.7773	20.2227
2000-01	2175187	523761	2698948	80.5939	19.4061
2001-02	2190187	579368	2769555	79.0808	20.9192
2002-03	2260416	582241	2842657	79.5177	20.4823
2003-04	2274050	627322	2901372	78.3784	21.6216

mean = 79.5014%

standard deviation = 0.6749
standard deviation as a percentage of mean = (0.6749/79.5014)*100
= 0.8489%

Therefore, elementary enrollment as a % of total enrollment is relatively stable.

Table 2: Enrollment in state government schools

Year	Elementary	Secondary	Total (I – XII)	Elementary as % of Total	Secondary as % of Total
2003-04	684294	331118	1015412	67.3908	32.6092
2004-05	661564	335266	996830	66.3669	33.6332

For the years 2003-04 and 2004-05:

Elementary = (67.3908 + 66.3669) / 2 = 66.8789 %
Secondary = (32.6092 + 33.6332) /2 = 33.1212 %

Since the bifurcation of State Government School enrollment into elementary and secondary is not available at the directorate of education for any year prior to 2003-04, we assume that percentage of elementary students in total enrollment is 66.8789 % for all concerned years. And using this assumption we generate column 3 and 4 of the following table.

Table 3: Non-nursery enrollment in state government schools

Year	Nursery	Total (I – XII)	Non- Nursery (I-XII) as % of Total
2004-05	1870	998692	99.8128

Since the number of students in nursery classes in State Govt. Schools is not available for all years, we assume that for all concerned years it is the same as for the year 2004-05.

Table 4: state government schools enrollment

Year	Total (K-XII)	Total (I – XII)	Elementary	Secondary
1998-99	800340	798842	534257	264585
1999-00	815535	814008	544400	269608
2000-01	875122	873484	584177	289308
2001-02	897951	896270	599416	296855
2002-03	955648	953859	637930	315929
2003-04	1021374	1019462	681805	337657

Source: Directorate of Education, Delhi

Table 5: MCD schools enrollment

Year	Total (I – V)
1998-99	807333
1999-00	829390
2000-01	847087
2001-02	886938
2002-03	886802
2003-04	888852

Table 6: NDMC schools enrollment

Year	Enrollment (K – XII)	Enrollment (I – XII)	Non-Nursery Enrollment as % of enrollment K-XII
2003-04	30272	26757	88.3886

Since the number of students in nursery classes in NDMC schools is not available of any year except for 2003-04, therefore we assume that they are the same as for the year 2003-04 for all concerned years.

Table 7

Year	Elementary	Secondary	Total (I – XII)	Elementary as % of Total (I-XII)	Secondary as % of Total (I-XII)
2003-04	24178	2579	26757	90.3614	9.6386

Since the bifurcation of NDMC School enrollment into elementary and secondary is not available at the directorate of education for any year prior to 2003-04, we assume that percentage of elementary students in total enrollment (I-XII) is 90.3614% for all concerned years.

Table 8: Enrollment in NDMC schools

Year	Total (K-XII)	Total (I – XII)	Elementary	Secondary	Elementary as % of Total
1998-99	29132	25749	23267	2482	90.36079
1999-00	38342	33890	30623	3267	90.35999
2000-01	37902	33501	30272	3229	90.36148
2001-02	37052	32750	29593	3157	90.36031
2002-03	31456	27804	25124	2680	90.3611
2003-04	30272	26757	24178	2579	90.3614

* italics are calculated using available data

Table 9: Elementary enrollment in state government, MCD and NDMC schools

Year	State Govt.	MCD (I-V)	NDMC	Total
1998-99	*534257*	807333	*23267*	*1364857*
1999-00	*544400*	829390	*30623*	*1404413*
2000-01	*584177*	847087	*30272*	*1461536*
2001-02	*599416*	886938	*29593*	*1515947*
2002-03	*637930*	886802	*25124*	*1549856*
2003-04	*681805*	888852	*24178*	*1594835*

Table 10: Secondary enrollment in state government, MCD and NDMC schools

Year	State Govt.	MCD	NDMC	Total
1998-99	*264585*	0	*2482*	*267067*
1999-00	*269608*	0	*3267*	*272875*
2000-01	*289308*	0	*3229*	*292537*
2001-02	*296855*	0	*3157*	*300012*
2002-03	*315929*	0	*2680*	*318609*
2003-04	*337657*	0	*2579*	*340236*

Table 11: Enrollment

Year	Elementary	Secondary	Total	Elementary as % of Total
1998-99	*1364857*	*267067*	1631924	83.63484
1999-00	*1404413*	*272875*	1677288	83.73118
2000-01	*1461536*	*292537*	1754073	83.32242
2001-02	*1515947*	*300012*	1815959	83.47914
2002-03	*1549856*	*318609*	1868465	82.94809
2003-04	*1594835*	*340236*	1935071	82.41739

Table 12: Coefficients

Year	α_1	α_2	β	γ_1	γ_2
1998-99	0.391438	0.990706	0.591515	0.017047	0.009294
1999-00	0.387635	0.988027	0.59056	0.021805	0.011973
2000-01	0.399701	0.988962	0.579587	0.020712	0.011038
2001-02	0.395407	0.989477	0.585072	0.019521	0.010523
2002-03	0.411606	0.991588	0.572183	0.016211	0.008412
2003-04	0.427508	0.99242	0.557332	0.01516	0.00758

Table 13: Actuals at current prices

Year	x	y	z_1	z_2
1998-99	6838572000	2944472000	-	-
1999-00	7038257000	3658055000	-	-
2000-01	7250216000	3331117000	182672824.5	101815334
2001-02	7271435000	3271672000	170342346.1	105626430
2002-03	7636460000	3622290000	167231994.3	112808879
2003-04	7931280000	3827241000	189722986.5	115481154

Table 14: Budget Estimates at current prices

Year	X	y	z_1	z_2
1998-99	5338740000	-	-	-
1999-00	8630490000	-	-	-
2000-01	9242141000	-	219929143	119261380
2001-02	8438018000	-	211768899	121067370
2002-03	8009889000	-	210550971	117971610
2003-04	8306212000	-	196045428	135783340

- not available

Table 15: NDMC Actuals

Year	Middle + Primary	Secondary + Senior Sec.	Head Quarters	Others	Total Edu.
2000-01	174614000	97902000	15488000	1371000	401556000
2001-02	164650000	102395000	11773000	1421000	390091000
2002-03	162603000	109023000	13492000	1577000	405349000
2003-04	181515000	111031000	17427000	1280000	447700000

Using table on NDMC enrollment other can be divided.
Elementary = 0.9036 x Others
Secondary = 0.0964 x Others

Table 16: NDMC Actuals

Year	Middle + Primary+ others portion + (inc. mid day meal – grants	Secondary + Senior Sec. + others portion	Head Quarters	Total Edu.
2000-01	175888800	98034160	15488000	401556000
2001-02	165352000	102532000	11773000	390091000
2002-03	161845000	109175000	13492000	405349000
2003-04	182614600	111154400	17427000	447700000

Table 17: NDMC Actuals

Year	Elementary	Secondary	Elementary and Secondary
2000-01	182672824.5	101815334	284488159
2001-02	170342346.1	105626430	275968776
2002-03	167231994.3	112808879	280040873
2003-04	189722986.5	115481154	305204141

Table 18: NDMC Budget Estimates

Year	Middle + Primary	Secondary + Senior Sec.	Head Quarters	Others	Total Edu.
2000-01	201140000	113168000	25266000	3704000	500032000
2001-02	194457000	114916000	24155000	5150000	492989000
2002-03	195275000	112741000	20840000	3175000	478403000
2003-04	183498000	129726000	18596000	2590000	416181000

Using table on NDMC enrollment other can be divided.

Elementary = 0.9036 x Others
Secondary = 0.0964 x Others

Table 19: NDMC Budget Estimates

Year	Middle + Primary+ others portion+ mid day – grants	Secondary + Senior Sec. + others portion	Head Quarters	Total Edu.
2000-01	209350900	113525100	25266000	500032000
2001-02	201877500	115412500	24155000	492989000
2002-03	201761900	113047100	20840000	478403000
2003-04	187660300	129975700	18596000	416181000

Table 20: NDMC Budget Estimates

Year	Elementary	Secondary
2000-01	219929143	119261380
2001-02	211768899	121067370
2002-03	210550971	117971610
2003-04	196045428	135783340

Table 21: Actuals at current prices

Year	s_1	s_2	p_1	p_2
1998-99	*5585900*	*1144100*	114925000	389731000
1999-00	*5585900*	*1144100*	114925000	389731000
2000-01	*15628070*	*3200930*	115702000	404210000
2001-02	*14774000*	*3026000*	172487000	974853000
2002-03	*28598200*	*5259800*	125203000	492385000
2003-04	*39144550*	*8036450*	164230000	745872000

Table 22: Budget Estimates at current prices

Year	s_1	s_2	p_1	p_2
1998-99	9130000	1870000	155000000	265000000
1999-00	16600000	3400000	300000000	600000000
2000-01	16600000	3400000	350000000	350000000
2001-02	16600000	3400000	250000000	550000000
2002-03	37400000	6800000	240000000	450000000
2003-04	42690000	13160000	130500000	510000000

Table 23: Capital to revenue expenditure ratio in state government schools

Year	Revenue Expenditure	Capital Expenditure	Ratio
1998-99	6838572000	504656000	7.379552
1999-00	7038257000	504656000	7.170184
2000-01	7250216000	519912000	7.170986
2001-02	7271435000	1147340000	15.77873
2002-03	7636460000	617588000	8.08736
2003-04	7931280000	910102000	11.47484

Male & Female Expenditure (2003-04)

Actuals of Directorate of Education

y_t = total expenditure on education (elementary, secondary, scholarship and nutrition)
  = 7931280000
y_f = 85696000
There are four schemes under which the Directorate spends exclusively for females (Details in Appendix I).
y_m = 0
There are no schemes run by the Directorate which is meant exclusively for males.

y_c = 7931280000 – 85696000 = 7845584000

n_t = 1015412
n_f = 495809
n_m = 519603

F =85696000+ (7845584000)(495809/1015412) = 3916565792
M = 0 + (7845584000)(519603/1015412) = 4014714208

per female student expenditure = 3916565792/495809 = 7899.34
per male student expenditure = 4014714208 / 519603 = 7726.50

<u>*Budget Estimates of Directorate of Education*</u>

y_t = total expenditure on education (elementary, secondary, scholarship and nutrition)
  = 8306212000
y_f = 92000000
There are four schemes under which the Directorate spends exclusively for females (Details in Appendix I).
y_m = 0
There are no schemes run by the Directorate which is meant exclusively for males.
y_c = 8306212000 − 92000000 = 8214212000

n_t = 1015412
n_f = 495809
n_m = 519603

F =92000000+ (8214212000)(495809/1015412)
  = 4102864789

M = 0 + (8214212000)(519603/1015412)
  = 4203347211

per female student expenditure = 4102864789/495809 = 8275.09

per male student expenditure = 4203347211 / 519603 = 8089.53

All Departments Actuals

y_t = 8830869606
y_{sc} = expenditure on schemes specific for SC's which goes to Directorate of Education assuming that the ratio of SC's to non SC's is the same in State Government, NDMC and MCD schools; as SC's and non SC's enrollment data for all three are not available.
  = 337542752.8
y_{non} = 0

n_t = 1015412
n_{sc} = 171020
n_{non} = 844392

y_c = 8830869606 - 337542752.8
  = 8493326853

S = 337542752.8 + (8493326853)(171020/1015412)
  = 1768024920

N = total expenditure on non SC's
  = 0 + (8493326853)(844392/1015412)
  = 7062844686

per SC student expenditure: 1768024920/ 171020 = 10338.12
per non SC students expenditure: 7062844686/ 844392 = 8364.41

 Table 24: Actual expenditure on SCs

Year	Directorate of Education	Social Welfare	PWD
2003-04	45208000	47181000	267525000

Total enrollment in State Government Schools: 1015412
Total enrollment in State Government, NDMC and MCD schools: 1931021
% of Students in State Government Schools: 52.58%
% of social welfare spending on state government schools = 0.5258 x 47181000
                                            = 24809752.75

Spending exclusively on SC's in State Govt. Schools
= 45208000 + 24809752.75 + 267525000
= 337542752.8

Hypothetical example: differences in responsiveness of various social groups to level of expenditure

The set of graphs depict the two differences. The expenditure on both per male and per female student is Rs.1000 till Year III, however in Year IV this figure increases to Rs.2000. The male literacy rate remains constant till Year V at 50%, however in Year VI it increases to 75%. The female literacy rate remains constant at 30% till Year XIII, however IX it increase to 40%. The two differences are aptly reflected in this example. Firstly, the degree of responsiveness: due to a 100% increase in per student expenditure male literacy rate increases by 50% whereas female literacy rate increases by only 33.33%. Secondly, the extend of time lag: male literacy increase two years after increase in expenditure whereas female literacy increases five years later, possibly because parents are less concerned about female literacy and hence take more time to receive information and respond to incentives. In reality the increases in literacy in response to increases in expenditure would not be abrupt, there would a gradual increase, and the resulting graph would not be in the form of 'steps 'but curves.

Graph II (a): Per Student Expenditure

Graph II (b): Male and Female Literacy Rate
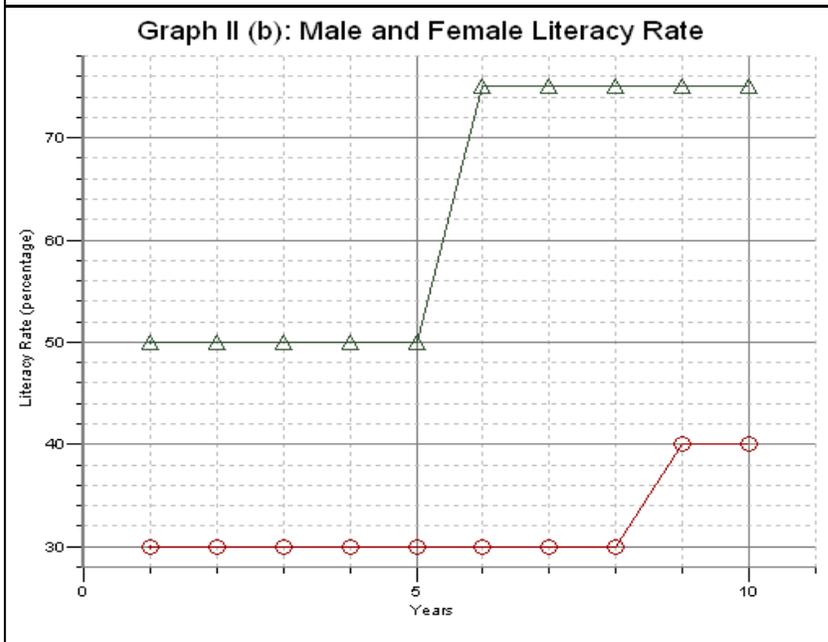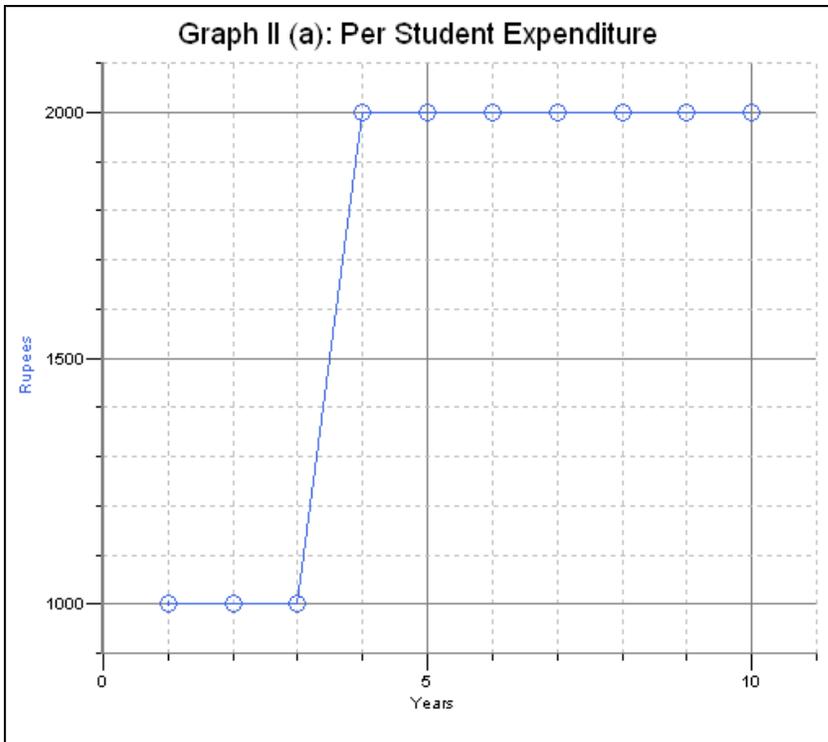
Appendix II

Table 25: Actuals, Directorate of Education (Rs thousands)

Year	Elementary	Secondary	Scholarship	Nutrition	Total
1993-94	156588	768546	0	863	925997
1994-95	551502	2820746	0	1119	3373367
1995-96	4342	3288452	17084	990	3310868
1996-97	5471	3722128	19401	1048	3748048
1997-98	811997	5436788	31773	1170	6281728
1998-99	915044	6804694	38168	2475	7760381
1999-2000	1150723	6943487	72357	12146	8178713
2000-01	77798	7079428	92990	130074	7380290
2001-02	960772	7199547	92280	158123	8410722
2002-03	1144008	7438352	90245	195507	8868112
2003-04	790484	7725934	78724	194140	8789282

Table 26: Budget Estimates, Directorate of Education (Rs thousands)

Year	Elementary	Secondary	Scholarship	Nutrition	Total
1993-94	159057	795609	0	1245	955911
1994-95	542423	2871470	0	1500	3415393
1995-96	597896	3196440	18900	1500	3814736
1996-97	678550	3733171	20450	1500	4433671
1997-98	597896	3196440	40400	7000	3841736
1998-99	903260	5320032	41100	7000	6271392
1999-2000	943600	7724590	60800	211000	8939990
2000-01	1027000	9140141	123100	174000	10464241
2001-02	1422753	8338915	103200	243000	10107868
2002-03	1472000	7862989	124400	243000	9702389
2003-04	1493700	8137612	112400	280000	10023712

Table 27: Actuals (1993-94 prices), Directorate of Education (Rs thousands)

Year	Elementary and Secondary	Scholarship	Nutrition	Total
1993-94	925134	0	863	925997
1994-95	3066466	0	1017.534	3067484
1995-96	2796328	14508.19	840.7343	2811677
1996-97	3006970	15650.35	845.3979	3023465
1997-98	4773435	24271.34	893.7609	4798601
1998-99	5368531	26543.14	1721.187	5396795
1999-2000	5284914	47243.71	7930.43	5340088
2000-01	4491617	58357.18	81629.76	4631604
2001-02	4991402	56444.68	96718.71	5144566
2002-03	5086120	53481.43	115862.3	5255464

Table 28: Budget Estimates (1993-94 prices), Directorate of Education (Rs thousands)

Year	Elementary and Secondary	Scholarship	Nutrition	Total
1993-94	954666	0	1245	955911
1994-95	3104335	0	1363.986	3105699
1995-96	3222251	16050.38	1273.84	3239575
1996-97	3558835	16496.55	1210.016	3576542
1997-98	2898486	30861.49	5347.287	2934695
1998-99	4327859	28582.14	4868.004	4361309
1999-2000	5659680	39697.85	137767.2	5837145
2000-01	6380532	77253.13	109196.1	6566981
2001-02	5970896	63124.09	148635.2	6182655
2002-03	5532147	73722.54	144007.9	5749877

Scholarship Schemes

(i)   General Scholarship *[A.2(4)(3)(1)]*
(ii)   Post matric scholarship to SC/ST *[A.2(4)(3)(2)]*
(iii) Other scholarships *[A.2(4)(3)(3)]*
(iv)   Merit scholarships to SC/ST Students (SCP) *[A.2(4)(3)(4)]*
(v)   Open Merit scholarships to SC/ST Students (SCP) *[A.2(4)(3)(5)]*
(vi)   Scholarship to educationally backward minorities *[A.2(4)(3)(6)]*
       "The objective of this scheme is to promote education among educationally backward minorities (Muslims and Neo-Buddhists only)."[32] Poor students in primary, middle, secondary, and senior secondary classes shall be paid Rs.200, Rs.300, Rs.400 and Rs.500 respectively.
(vii) Stipend to girl students *[A.2(4)(3)(7)]*:

Table 29: Actual expenditure on *Stipend to Girl Students* (Rs thousands)

Year	Actuals	Budget Estimates	Actuals 1993-94 prices	Budget Estimates 1993-94 prices
1997-98	13126	20000	10026.93	15277.96
1998-99	19747	20000	13732.64	13908.58
1999-2000	48922	40000	31942.41	26117.01
2000-01	71491	99000	44865.18	62128.84
2001-02	70038	70000	42839.97	42816.73
2002-03	71114	100000	42143.93	59262.49
2003-04	77464	90000		

Table 30: Plan and Non Plan expenditure

Year	Dtte. Of Edu.				Dept. of Social Welfare		
	PLAN	PLAN (exc.grants)	NON PLAN	TOTAL	PLAN	NON PLAN	TOTAL
1993-94	96249	96249	829748	925997	7559	771	8330
1994-95	283774	283774	3089593	3373367	7468	1327	8795
1995-96	422244	422244	2888624	3310868	7488	794	8282
1996-97	266270	266270	3481778	3748048	8709	2121	10830
1997-98	169654	169654	6112074	6281728	9051	1333	10384
1998-99	192848	192848	7567533	7760381	15015	1844	16859
1999-2000	273490	273490	7905223	8178713	15015	1844	16859
2000-01	457636	457636	6922654	7380290	26402	1912	28314
2001-02	1433443	546059	6977279	8410722	25215	1977	27192

| 2002-03 | 1720931 | 686136 | 7147181 | 8868112 | 42840 | 2011 | 44851 |
| 2003-04 | 1375227 | 708502 | 7444055 | 8819282 | 59413 | 1581 | 60994 |

Table 31: Plan expenditure as percentage of total expenditure

Year	Dtte. Of Edu.	Dtte. Of Edu (excluding grants)	Dept. of Social Welfare
1993-94	10.39409	10.39409	90.74
1994-95	8.412189	8.412189	84.91
1995-96	12.75327	12.75327	90.41
1996-97	7.104231	7.104231	80.42
1997-98	2.700754	2.700754	87.16
1998-99	2.485033	2.485033	89.06
1999-2000	3.343925	3.343925	89.06
2000-01	6.200786	6.200786	93.25
2001-02	17.04304	6.492415	92.73
2002-03	19.40583	7.737115	95.52
2003-04	15.59341	8.033556	97.41

Table 32: Plan and Non Plan expenditure at 1993-94 prices

Year	Dtte. Of Edu.		Dept. of Social Welfare		Dept. of Urban Development and PWD	
	PLAN (exc.grants)	NON PLAN (incl. Grants)	PLAN	NON PLAN	PLAN	NON PLAN
1993-94	96249	829748	7559	771	971379	0
1994-95	258042.5	2809441.148	6790.832	1206.673	566628.9	0
1995-96	358580.8	2453096.365	6359.009	674.2859	599804.5	0
1996-97	214794	2808671.459	7025.353	1710.963	767643.8	0
1997-98	129598.4	4669002.158	6914.042	1018.276	851636.5	0
1998-99	134112.1	5262683.063	10441.87	1282.371	891648.7	0
1999-2000	178568.5	5161519.331	9803.672	1203.994	837152	0
2000-01	287195.9	4344408.373	16568.94	1199.902	1481989	0
2001-02	334006.6	4810559.217	15423.2	1209.267	1397842	0
2002-03	406621.3	4848842.722	25388.05	1191.769	1147768	0

Table 33: Real growth rates

Year	Dtte. Of Edu.		Dept. of Social Welfare		Dept. of Urban Development and PWD
	PLAN (exc.grants)	NON PLAN (incl. Grants)	PLAN	NON PLAN	PLAN
1993-94	-	-	-	-	-
1994-95	168.0989	238.5897	-10.1623	56.50752	-41.6676
1995-96	38.96192	-12.6838	-6.35891	-44.1202	5.854909
1996-97	-40.0989	14.49495	10.47874	153.7444	27.98234
1997-98	-39.6639	66.23525	-1.58441	-40.4852	10.94161
1998-99	3.482836	12.71537	51.02408	25.93551	4.698272
1999-2000	33.14869	-1.92228	-6.1119	-6.1119	-6.1119
2000-01	60.83234	-15.8308	69.00754	-0.33985	77.02743
2001-02	16.29922	10.7299	-6.91503	0.780431	-5.67795
2002-03	21.7405	0.795822	64.60952	-1.447	-17.89

Table 34: PWD's expenditure at current prices (Rs thousands)

Year	Grants-in-aid to local bodies			Building of Schools
	Plan	Non Plan	Total	Plan
1993-94	195072	0	195072	776307
1994-95	388000	0	388000	235132
1995-96	442900	0	442900	263395
1996-97	586391	0	586391	365221
1997-98	528500	0	528500	586356
1998-99	777500	0	777500	504656
1999-2000	777500	0	777500	504656
2000-01	781350	1060232	1841582	519912
2001-02	0	1137957	1137957	697340
2002-03	0	1319165	1319165	617588
2003-04	0	1349965	1349965	910102

Table 35: PWD's expenditure at 1993-94 prices (Rs thousands)

Year	Building of Schools (Actuals)	Building of Schools (Budget Estimates)	Actuals as a % of Budget Estimates
1993-94	776307	51801	1498.633
1994-95	213811.177	245517.4872	87.08593
1995-96	223682.0428	201691.3197	110.9032
1996-97	294615.5093	267816.881	110.0063
1997-98	447916.2768	181425.8159	246.8867
1998-99	350952.4945	292080.2442	120.1562
1999-2000	329502.6212	587632.6826	56.07289
2000-01	326278.0498	627563.9911	51.9912
2001-02	426540.2554	489334.0469	87.1675
2002-03	365998.0277	408911.1821	89.50551

Table 36: Scholarships and Nutrition as a percentage of total expenditure by Directorate of Education

Year	Scholarship (%)	Nutrition (%)
1993-94	0	0.093197
1994-95	0	0.033172
1995-96	0.515998	0.029902
1996-97	0.51763	0.027961
1997-98	0.5058	0.018625
1998-99	0.491832	0.031893
1999-2000	0.884699	0.148507
2000-01	1.259978	1.762451
2001-02	1.097171	1.880017
2002-03	1.017635	2.204606

Table 37: Composition of expenditure on elementary and secondary education

Year	Assistance to local bodies for primary education (%)	Govt. Secondary Schools (%)	Assistance to Non govt. sec. schools (%)	Provision of additional schooling facilites for the age group 11-14 and 14-17 (%)
1993-94	16.57025	24.66799	12.81382	37.33016
1994-95	15.82686	24.97079	13.78039	41.14371
1995-96	15.10774	24.22587	13.82111	41.92424
1996-97	14.49932	23.62165	14.10599	43.96699
1997-98	12.27709	23.80348	13.79991	46.22767
1998-99	11.46121	23.45901	13.48389	48.47807
1999-2000	13.63273	21.96014	12.95647	47.49963
2000-01	0	25.56646	14.62744	54.88123
2001-02	10.88357	22.50895	12.77629	49.0022
2002-03	12.06597	21.86818	12.44299	47.92606
2003-04	7.837509	22.4847	12.77235	50.99541

Table 38: Composition of expenditure on elementary and secondary education

Year	Inspection (%)	Teachers Training (%)	Assistance to local bodies for secondary edu. (%)	Vocational Education in schools (%)	Introduction of computer science at +2 stage (%)
1993-94	0.43291	0.39551	1.599768	0.990775	0
1994-95	0.415628	0.731204	0.489288	0.263682	0
1995-96	0.46267	1.129102	0.521812	0.516785	0
1996-97	0.441839	1.099931	0.477094	0.599968	0
1997-98	0.416241	0.790442	0.491936	0.521701	0
1998-99	0.393498	0.883748	0.479291	0.562985	0
1999-2000	0.426243	0.669862	0.345926	0.528378	0
2000-01	0.511958	1.061319	0	0.762712	0.309394
2001-02	0.499968	0.826279	0.009191	0.652524	0.993895
2002-03	0.466538	0.811397	0.008739	0.71252	1.374634
2003-04	0.550431	0.701903	0.008807	0.742601	1.391677

Table 39: Expenditure on Inspection (1993-94 prices)

Year	Plan	Plan Salaries	Non Plan	Total
1993-94	322	105	3683	4005
1994-95	189	0	12556	12745
1995-96	751	0	14489	15240
1996-97	1204	0	14335	15539
1997-98	0	0	19869	19869
1998-99	96	0.695	21029	21125
1999-2000	154	136.5	22373	22527
2000-01	1602	1400	21393	22995
2001-02	3247	2529	21708	24955
2002-03	1881	1245	21848	23729

Table 40: Plan expenditure on Inspection (1993-94 prices)

Year	Plan as % of total	Salaries as % of plan
1993-94	8.03995	32.6087
1994-95	1.482934	0
1995-96	4.927822	0
1996-97	7.748246	0
1997-98	0	0
1998-99	0.454438	0.724638
1999-2000	0.683624	88.55932
2000-01	6.966732	87.42163
2001-02	13.01142	77.88661
2002-03	7.927009	66.16257
2003-04	11.44	50.04662

Table 41: Expenditure on teachers training (1993-94 prices)

Year	Rupees thousands
1993-94	3659
1994-95	22422.11
1995-96	31573.4
1996-97	33074.58
1997-98	37731.22
1998-99	47444.26
1999-2000	35401.6
2000-01	47670.39
2001-02	41242.91
2002-03	41268.62

Table 42: Assistance to NDMC for secondary education (1993-94 prices)

Year	Rupees (thousands)
1993-94	14800
1994-95	15003.8464
1995-96	17188.3466
1996-97	16778.8889
1997-98	23482.2298
1998-99	25730.8787
1999-2000	18281.9057
2000-01	0
2001-02	458.750669
2002-03	444.468676

Table 43: Expenditure on vocational education (1993-94 prices)

Year	Expenditure
1993-94	9166
1994-95	8085.709
1995-96	17022.75
1996-97	21100.26
1997-98	24918.36
1998-99	30224.05
1999-2000	27924.31
2000-01	34258.09
2001-02	32570.07
2002-03	36239.61

Table 44: Expenditure on computer education

Year	Rupees (thousands)
1993-94	0
1994-95	0
1995-96	0
1996-97	0
1997-98	0
1998-99	0
1999-2000	0
2000-01	22144
2001-02	81105
2002-03	117976
2003-04	118521

Table 45: Expenditure on text books (1993-94 prices)

Year	Rupees thousands
1993-94	23
1994-95	415.5611
1995-96	501.8929
1996-97	625.9816
1997-98	914.3861
1998-99	1296.28
1999-2000	3935.18
2000-01	4650.249
2001-02	4350.18
2002-03	3718.721

Table 46: Salaries

Year	Plan	Total	Plan as percentage of total
1993-94	36301	516284	7.031208
1994-95	193043	2163536	8.922569
1995-96	282699	2494261	11.33398
1996-97	166222	2854355	5.823452
1997-98	30	4261184	0.000704
1998-99	6464	3878544	0.16666
1999-2000	3943	5467634	0.072115
2000-01	19174	5597224	0.342563
2001-02	29266	5660245	0.517045
2002-03	29617	5796129	0.510979
2003-04	31922	6061539	0.526632

Table 47: Expenditure by all departments (1993-94 prices)

Year	Expenditure on SC	Total Expenditure	SC as % of total
1993-94	117167	1905706	6.14822
1994-95	199242.3	3642110	5.470518
1995-96	280805.5	3418515	8.214254
1996-97	229746.7	3799846	6.046211
1997-98	269517	5658169	4.763325
1998-99	249572.7	6300168	3.961366
1999-2000	265768.4	6188248	4.294728
2000-01	306481	6131361	4.99858
2001-02	235191.5	6283789	3.742829
2002-03	249042.6	6429812	3.873249

Table 48: SCP expenditure (1993-94 prices)

Year	Directorate of Education			Dept. of Social Welfare	PWD
	Elementary and Secondary Edu.	Scholarship	Nutrition		
1993-94	26450	0	0	8219	81773
1994-95	41238	0	257.3387	6920.865	132155.7
1995-96	60636	653.9	169.8453	7037.541	163325.8
1996-97	12687	609.85	225.8697	6560.707	157462.6
1997-98	22751	737.16	0	5325.134	170361.5
1998-99	2290	1603.7	700.2972	7646.939	155132.9
1999-2000	11652	1237.3	737.8055	7179.566	145651.3
2000-01	8054	1207.4	19140.7	15249.8	138944.6
2001-02	18425	1099.8	20246.2	14464.71	81369.52
2002-03	17612	33.187	21680	23515.36	88227.62

Table 49: Expenditure on SCs

Year	Directorate of Education			Dept. of Social Welfare	PWD
	Elementary and Secondary Edu.	Scholarship	Nutrition		
1993-94	26450	0	0	8219	81773
1994-95	45350	0	283	7854	145334
1995-96	71401	6741	200	9287	192323
1996-97	15727	8361	280	9528	195199
1997-98	29783	8592	0	8838	223016
1998-99	3293	9263	1007	14112	223075
1999-2000	17846	10666	1130	14112	223075
2000-01	12833	12432	30500	27275	221403
2001-02	30122	12082	33100	25553	133029
2002-03	29718	8621	36583	42598	148876

Table 50: Expenditure on SCs (1993-94 prices)

Year	Directorate of Education			Dept. of Social Welfare	PWD
	Elementary and Secondary Edu.	Scholarship	Nutrition		

1993-94	26450	0	0	9055	81773
1994-95	45350	0	283	9131	145334
1995-96	71401	6741	200	9287	192323
1996-97	15727	8361	280	11230	195199
1997-98	29783	8592	0	9307	223016
1998-99	3293	9263	1007	14845	223075
1999-2000	17846	10666	1130	14845	223075
2000-01	12833	12432	30500	29965	221403
2001-02	30122	12082	33100	27861	133029
2002-03	29718	8621	36583	46401	148876

Table 51: Expenditure by departments (1993-94 prices)

Year	Directorate of Education			Dept. of Social Welfare	PWD
	Elementary and Secondary Edu.	Scholarship	Nutrition		
1993-94	925134	0	863	8219	971379
1994-95	3066466	0	1017.53	7141.831	566628.9
1995-96	2796328	14508.2	840.734	7886.768	599804.5
1996-97	3006970	15650.4	845.398	7686.022	767643.8
1997-98	4773435	24271.3	893.761	6751.332	851636.5
1998-99	5368531	26543.1	1721.19	9813.896	891648.7
1999-2000	5284914	47243.7	7930.43	9214.08	837152
2000-01	4491617	58357.2	81629.8	17116.81	1481989
2001-02	4991402	56444.7	96718.7	15629.94	1122592
2002-03	5086120	53481.43	115862.3	25244.64	1147766.696

Table 52: Actuals as percentage of Budget estimates for expenditure on SCs

Year	Directorate of Education			Dept. of Social Welfare	PWD
	Elementary and Secondary Edu.	Scholarship	Nutrition		
1993-94	90.12846	0	0	88.26246	10.01889
1994-95	72.49504	0	0	58.86766	4.224852
1995-96	93.6161	0	0	55.89882	4.418173

1996-97	17.4793	96.10345	0	50.69185	11.14386
1997-98	39.04943	93.3913	0	47.02192	4.204567
1998-99	7.959105	95.49485	73.23636	54.33075	5.707583
1999-2000	25.38982	109.9588	2.441923	28.95742	3.241902
2000-01	16.27355	112	93.12977	67.71632	7.87976
2001-02	39.20706	73.67073	75.39863	67.56571	15.67669
2002-03	56.92231	78.37273	83.33257	60.25816	34.29791
2003-04	32.83905	79.47273	76.6716	57.2166	24.24564

Table 53: Actuals as a percentage of Budget Estimates for total expenditure

Year	Directorate of Education			Dept. of Social Welfare	PWD
	Elementary and Secondary Edu.	Scholarship	Nutrition		
1993-94	96.90656	0	69.31727	0	388.0704
1994-95	98.78013	0	74.6	64.76436	76.92988
1995-96	102.2258	0	66	51.56912	86.92862
1996-97	98.82153	94.87042	69.86667	61.54108	95.08988
1997-98	164.6872	78.64604	16.71429	64.65753	137.213
1998-99	124.0459	92.86618	35.35714	78.19936	121.82
1999-2000	93.37832	119.0082	5.756398	43.31261	74.54395
2000-01	77.43535	75.54021	74.75517	73.60595	76.32448
2001-02	83.59554	89.4186	65.07119	73.48196	94.30263
2002-03	91.93755	72.54421	80.45556	67.03484	96.53857
2003-04	88.42428	96.72954	69.33571	72.34063	105.024

Table 54: All India Inflation Index, 1993-94 = 100

Year	Cost of Construction Index	All Commodities (general)
1998-99	131.4	140.7
1999-2000	132.3	145.3
2000-01	135.8	155.7
2001-02	140.2	161.3
2002-03	143.1	166.8

1998-99: 131.4 / 140.7 = 0.933901919
2002-03: 143.1 /166.8 = 0.857913669

SDP Deflator: 1998-99: 1.43796 x 0.933901919 = 1.342913603
                    2002-03: 1.68741 x 0.857913669 = 1.447652104

Expenditure (1993-94 prices):
1998-99: 504656 / 1.342913603 = 375791.86
2002-03: 617588 / 1.447652104 = 426613.55