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Private Expenditure on Education in India

**National Level Analysis Exploring NSSO
Survey (CES and SCE) Estimates**

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Private Expenditure on Education in India: National Level Analysis Exploring NSSO Survey (CES and SCE Estimates)

Venkatanarayana Motkuri and E. Revathi[#]

Abstract

There is a growing private expenditure on education in India although public good nature of education desires more of public investment. In this regard, present note examined the household/ private expenditure on education. The analysis is based on NSSO-CES and –SCE survey estimates published in respective rounds of NSSO survey reports. This data reveals that the share of expenditure on education with respect to GDP and total HCE is increasing that in turn shows that household expenditure on education is growing faster than the total HCE and GDP. Although there is negative association between expenditure classes and the per capita expenditure on education along with its share in total HCE, it is growing faster among the bottom economic stratum, particularly their per capita expenditure on education and its share in their total HCE. Therefore, the ratio of top 10% of population by HCE to bottom 10% in terms of per capita household expenditure on education is although very high but shows declining trends during the period. It shows increasing prioritisation of education even among the poor household. But on the other hand it is also indicating increasing burden on the poor to spend on education which would have been otherwise served through public investment.

Key Words: Education, Private Expenditure, India, Expenditure on Education.

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I Introduction

The private and social returns to education along with human capital and human development perspectives of economic development are pertinent to investment in education having state as prime mover, hence the public investment. Along with growing economy increasing perceived value of education led to growing demand for education in India coupled with inadequacy of public expenditure on education has been necessitating growing private expenditure on education. Inadequate funding is one of the reasons for the non-fulfilment of public education system. Such a tendency of strained private pockets in meeting the growing demand definitely has far reaching implications for affordability and access to education. The third National Education Policy 2020 does not appear serious to address these concerns. Rather it appears to add further impetus to privatisation of education.

In this backdrop, the present exercise is to examine and analyse the trend in level of private expenditure on education in India covering last three decades period. The analysis is based on NSSO-CES along with NSSO-SCE survey estimates of household/private expenditure on education. Two important sources of information or estimates on private expenditure on education are: PFCE estimates of NAS and NSSO survey estimates (see Appendix for details; also Motkuri and Revathi, Sep, 2020). Present paper is based on survey estimates of NSSO.

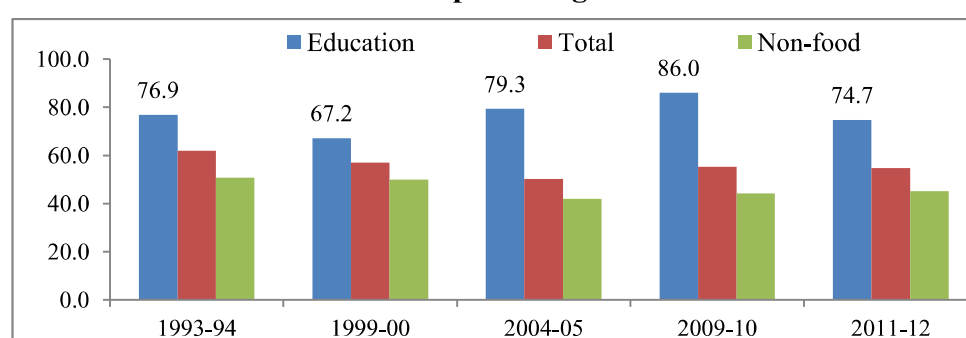
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II Private Expenditure on Education: Analysis of NSSO-CES Estimates

Differences in NAS-PFCE and NSSO-CES Estimates

There is a growing divergence between PFCE of NAS and household consumption expenditure from NSSO quinquennial round survey (CES) on Household Consumption Expenditure (HCE) and it is a cause of concern (see Appendix and Table 1A). Such difference is very high and divergence has increased over a period especially in case of non-food expenditure. Education is part of the non-food commodity groups. But we can observe that deviation of CES estimate from PFCE in respect of education is lesser when compared to the deviation of overall expenditure and that of non-food category (Figure 1).

Figure 1: Differences in estimate of Private Expenditure on Education - NSSO-CES Estimate as a percentage of NAS-PFCE in India



Notes: 1. NSSO-CES estimates considered here are based on URP for the year 1993-94, MRP for the years 19990-2000 and 2004-05, MMRP for the years 2009-10 and 2012.

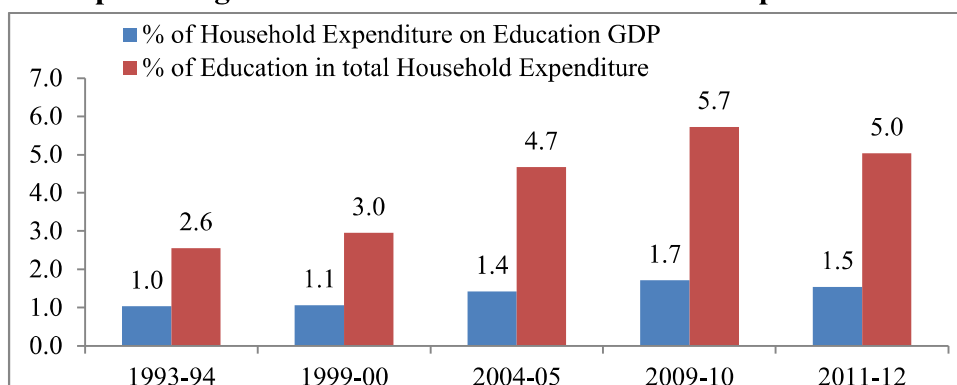
Source: 1. NSSO-CES Reports; 2. NAS, Government of India.

Although it indicates NAS-PFCE is more comprehensive than NSSO-CES based estimate in respect of private expenditure in general and private expenditure on education particular, NAS-PFCE has a limitation of its availability at national level only. NSSO-CES estimates allow sub-national and economic class level analysis. The deviation with respect to expenditure on education from NAS-PFCE to NSSO-CES is comparatively lower than that of averages for food or non-food. Therefore, they are useful for analysis of private expenditure on education.

Trends in Household (Private) Expenditure on Education

Household (private) expenditure on education as a percentage of total household consumption expenditure (HCE) had increased from 2.6 per cent in 1993-94 to 5.7 per cent in 2009-10 and slightly declined to 5.0 per cent in 2011-12. Since the year 2009-10 is considered as not a normal years because it was affected by drought, one can see certain increase in 2011-12 from that of previous main round of CES in 2004-05. Therefore, one can consider the increasing trend during that two decades (18 years strictly speaking) period between 1993-94 and 2011-12. Similarly, as a percentage of GDP the household (private) expenditure on education had increased from 1.0 per cent in 1993-94 to 1.5 per cent in 2011-12. It is obviously indicating that the growth in per capita household expenditure on education is higher (or faster) than of total household consumption expenditure per person and the per capita GDP.

Figure 2: Household (Private) Expenditure on Education in India as a percentage of its GDP and of total Household Expenditure



Notes: 1. Percentages in current price values; 2. Note 1 of Figure 1 applies.

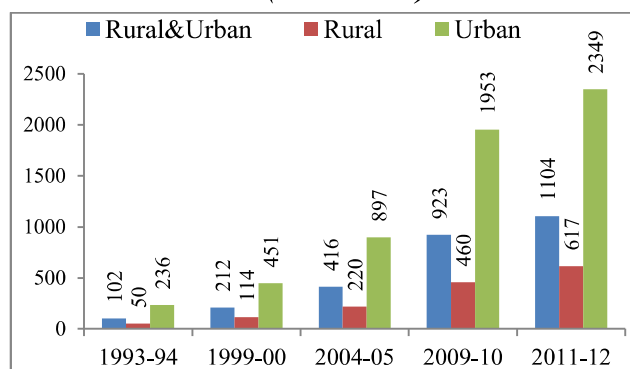
Source: Authors' calculation based on NSSO-CES Reports and CSO Data.

The per capita household (private) expenditure on education in India as per the NSSO-CES estimates (annualised) was Rs. 102/- per annum in 1993-94 (rural and urban combined and in current prices), it had increased to Rs. 1104/- per annum by 2011-12 (Figure 3a). It shows a manifold (more than eleven hundred times) increase during the two decades period (18 years, strictly speaking) between the reference years i.e. 1993-94 and 2011-12. It had registered a growth rate of 14.4 per cent per annum (current prices) during this period.

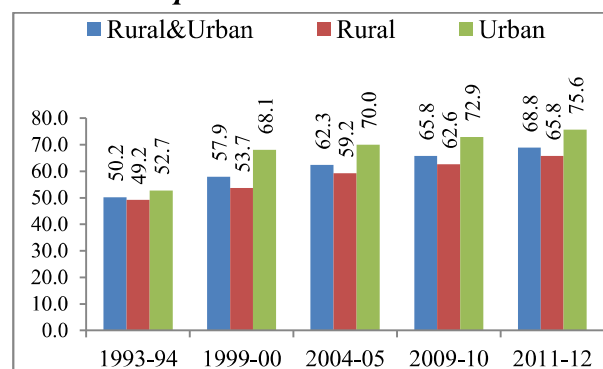
The increase in the total and per capita expenditure on education is definitely affected by the inflationary tendency of the economy. But the increase is largely due to increase in base of the education system. The percentage of households reporting expenditure on education has increased 19 percentage points from 50 per cent in 1993-94 to 69 per cent in 2011-12 (Figure 3b). It indicates that number of households consuming educational services had increased during that nearly two decades period.

Figure 3: Per Capita Private Household Expenditure on Education and Percentage of Households Reporting the same in India: NSSO-CES

a) Per capita Private/Household Expenditure on Education (in Rs. 0.00) – Annual



b) Percentage of Households Reporting Expenditure on Education

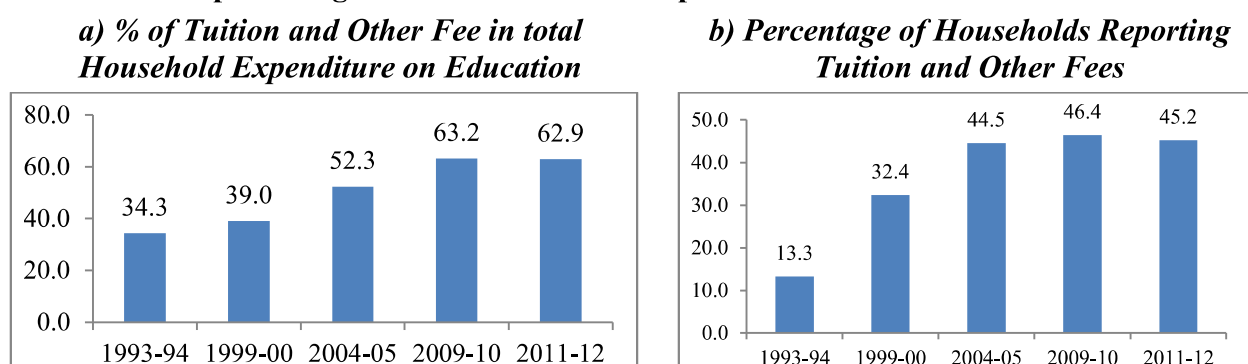


Notes: 1. Per capita expenditure on education is per person (not per student) and it is in current prices; 2. NSSO-CES estimates considered here are based on URP for the year 1993-94, MRP for the years 19990-2000 and 2004-05, and MMRP for the years 2009-10 and 2012; 3. NSSO-CES estimates for a month are annualised.

Source: NSSO-CES Reports.

On the other hand, the average number of persons within the households consuming educational services might have also increased. The increasing percentage of eligible age-group population in India attending educational institutions is an indicator reflecting the above statement. An increase in percentage of population pursuing higher levels of education is another indicator reflecting expanding base of the education system. The level of expenditure at each higher levels of education from the base it increases. Beyond the expanding the base of education system, the shift towards the privatisation is also another factor that is causing the increase in household (private) expenditure on education.

**Figure 4: Expenditure on Tuition Fee and Other Fees –
as a percentage of Total Household Expenditure on Education in India**



Notes: Rural and Urban Combined.

Source: Authors' calculation based on NSSO-CES Reports.

The increasing privatisation is reflected through increasing tuition fee and other fee as a percentage of total household expenditure on education (Figure 4). It was one third (34.3%) of the total household expenditure on education in 1993-94, it nearly doubled during the two decades period to 63 per cent by 2011-12. The percentage of households reporting such expenditure increased fourfold from 13.3% to 45.2% during the period. The share of all other components of education expenditure (books/ journals, stationery, private coaching/ tutor etc.,) were reduced to one-third of the total household expenditure on education during the period.

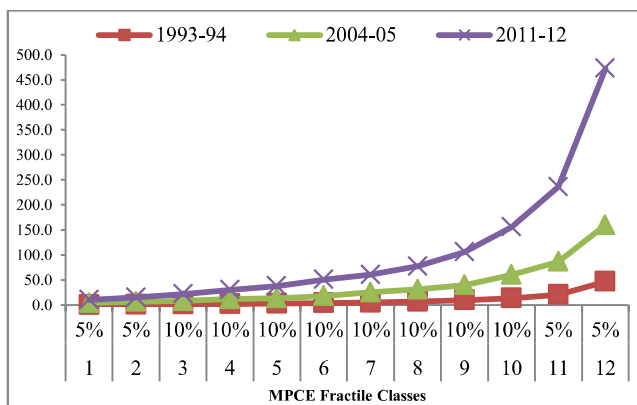
Expenditure on Education by Economic (MPCE) Classes

As one examines the distributional aspect of expenditure on education across economic classes, the per capita household expenditure on education is obviously low in bottom layer of the economic stratum than that of the higher up ones (Figure 5a). Also, the percentage of education in the total household consumption expenditure (HCE) is lower in bottom economic stratum when compared to top stratum (Figure 5b). Economic stratum here are percentile distribution of population by household monthly consumption expenditure. It indicates obviously a negative relationship between income levels of economic classes and their educational expenditure; also between the percentage of households expenditure on education and income levels.

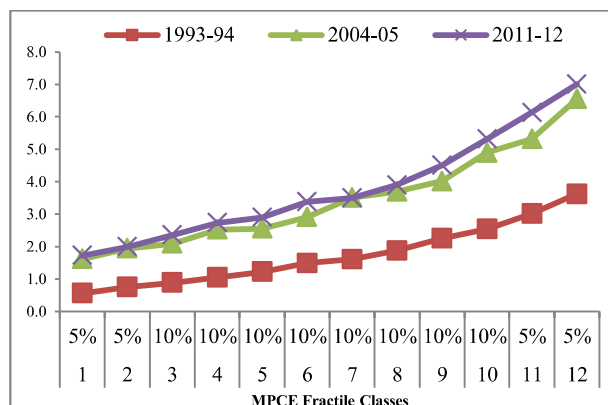
It is however important to understand the growth in per capita household/private expenditure on education across economic classes. The growth is higher in lower MPCE (fractile) classes when compared to higher ones during the last two decades period (i.e. between 1993-94 and 2011-12).

Figure 5: Household Expenditure on Education in India by MPCE Fractile Classes

a) Per Capita Household Expenditure on Education by MPCE Classes



b) Percentage of Expenditure on Education in total Household expenditure by MPCE



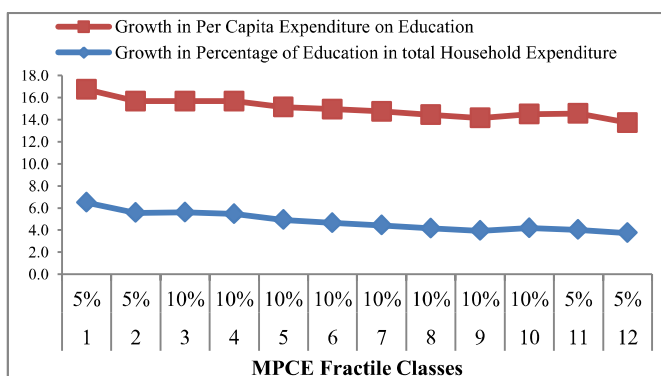
Note: 1. Rural and Urban Combined; 2.NSSO-CES estimates for the month are annualised; 4. Current prices.

Source: Authors' calculation based on NSSO-CES Reports.

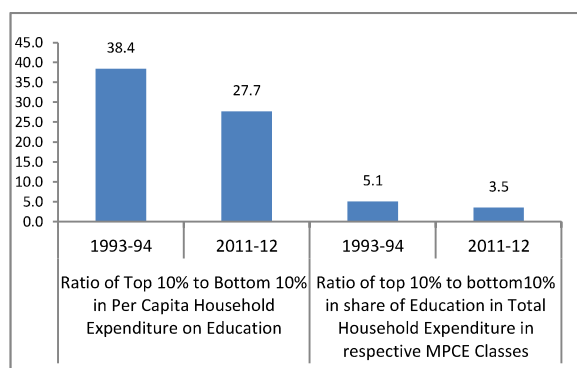
The share of education has increased across MPCE fractile classes, as the growth in per capita expenditure on education is higher that of total household expenditure across all such classes. Further, the growth is higher in lower MPCE classes when compared to higher ones (Figure 6a). As a result the ratio of per capita expenditure on education of top 10 per cent of population to that of bottom 10 per cent had declined during the period of that two decades (Figure 6b). For the same reason, the ratio of top to bottom (10% classes) in respective class's share of education to their total household expenditure, has also declined during the period. It indicates increasing prioritisation of education even among the poor households or lower economic classes. The private expenditure on education would be definitely a burden on those households.

Figure 6: Growth in Per Capita Household Expenditure on Education in India by MPCE Fractile Classes

a) Growth in Per Capita Household Expenditure on Education and by MPCE Classes



b) Ratio of top 10% to bottom 10% in Per capita expenditure on education and its share in total expenditure



Note: 1. Rural and Urban Combined; 2. Compound Annual Growth Rate (CAGR) in per cent.

Source: Authors' calculation based on NSSO-CES Reports.

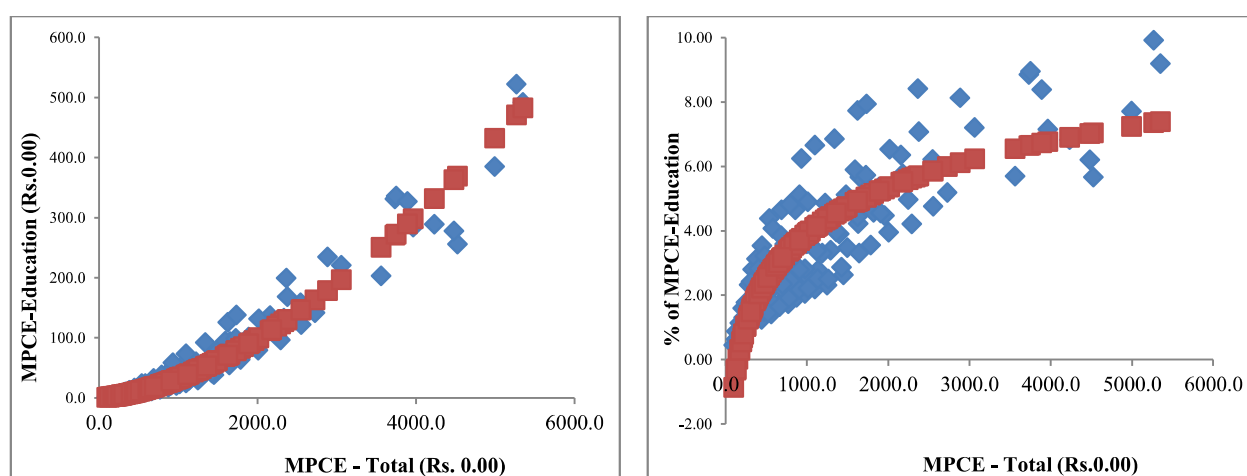
If Engel's elasticity function is applied to per capita private expenditure on education and total household consumption expenditure per person (or percentage of education to total expenditure),

the estimated *elasticity of expenditure on education is greater than one*. The estimated Engel's curve indicates that education is a normal good (Figure 7). With the increase in total expenditure, while the estimated increase in absolute expenditure on education is showing an exponential pattern, the share of education in total expenditure indicate an asymptotic (horizontal) pattern after reaching threshold level (5%). It shows that although higher amounts spent on education increases faster at higher levels of total household expenditure, the increase in share of expenditure that spent on education is decelerating.

Figure 7: Elasticity of per capita Private (Household) Expenditure on Education to Total Per Capita Consumption Expenditure – All India

a) Elasticity of absolute Expenditure on Education

b) Elasticity of Percentage share of Education



Notes: Based on NSSO Consumer Expenditure Survey (CES) of 50th (1993-94), 61st (2004-05) and 68th (2011-12) round estimates by MPCE Classes.

Source: Authors' Estimation.

Overall, the NSSO-CES estimates as regards the household consumption expenditure (HCE) on education indicate that its share with respect to GDP and total HCE is increasing which means household expenditure on education is growing faster than the total HCE and GDP. Although there is negative association between expenditure (economic) classes and the per capita expenditure on education along with its share in total HCE, it is growing faster among the bottom economic stratum, particularly their per capita expenditure on education and its share in their total HCE. Therefore, the ratio of top 10% of population by HCE to that bottom 10% in terms of per capita household expenditure on education had declined. It shows increasing prioritisation of education even among the poor households. It is also indicating increasing burden on the poor to spend on education which would have been otherwise served through public investment.

IV Private Expenditure on Education: Analysis of NSSO-SCE survey estimates

As mentioned above, NSSO surveys on social consumption on education (SCE) are another major source of information on private/household expenditure on education. These surveys' complete focus is on participation in education, consumption of educational services and household expenditure on education. One must note that each of these rounds of SCE surveys

has a different reference age-group. While the 42nd (1986-87) had 0-29 years age as a reference age group, the 52nd (1993-94) had 5-24 years age group, the 64th (2007-08) had 5-29 years age group and the recent 75th (2017-18) has 3-35 years age groups. Therefore, the overall enrolment rates and/or current attendance rates are strictly not comparable across the rounds unless they are made age-group specific rates.

Table 1: NSSO-SCE Survey based Estimates of Private Expenditure on Education in India

Sno	Indicators/Details	1986-87 (42 nd)	1995-96 (52 nd)	2007-08 (64 th)	2017-18 (75 th)
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1	Reference Age group of the Survey	0-29	5-24	5-29	3-35
2	% of Reference Age in Total Population	63.9	43.3	49.6	59.0
3	Population: Reference-age (in Millions)	494.7	402.7	570.4	776.6
4	Population: All-Ages (in Millions)	774.2	930.1	1149.9	1316.3
5	% Currently Enrolled and Attending	25.7	49.8	52.0	43.9
6	% of Students in General Courses/Stream	99.0	97.0	97.8	96.1
7	% of Students in Technical Courses/Stream	1.0	3.0	2.2	3.9
8	Estimated No of Students (in Millions)	127.1	200.6	296.6	340.9
9	Estimated Expenditure per Student (Rs.)	314	904	2467	9948
10	Estimated Total Expenditure (Rs. Crores)	3993	18130	73167	339850
11	Per Capita per Person (Rs.): All Ages	52	195	636	2582
12	As a Percentage of GDP	1.2	1.5	1.5	2.0

Notes: 1. Based on NSSO-SCE Rounds; 2. Rural and Urban combined; 3. Percentages of reference-age groups are derived from interpolations of Census population and RGI Projections.

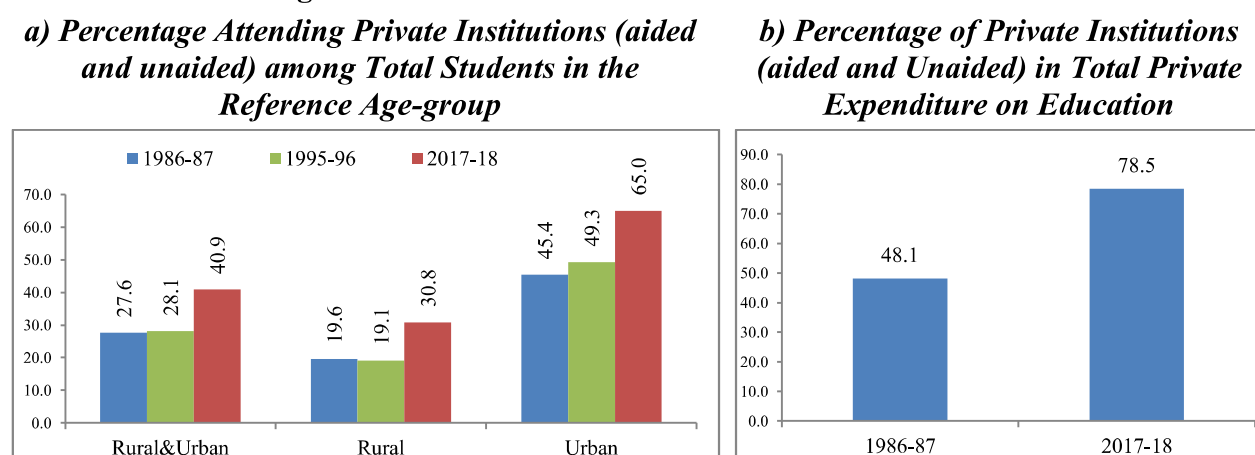
Source: Authors' compilation and estimates based on NSSO-SCE Reports on respective rounds.

Taking note of such differences, a comparable estimate across the rounds of per capita expenditure on education (per person) is derived (see Table 1). The NSSO-SCE survey based estimate of per capita private expenditure on education (per person, not per students) was Rs. 52/- in 1986-87. With a manifold (nearly 54 times) increase during the last three decades, it shot up to Rs. 2582/- by 2017-18. It registered an annual rate of growth at nearly a 14 per cent during the period. One could also observe that the NSSO-SCE based estimate of per capita private expenditure on education (per person) is better matching with that of the estimate based on PFCE. The NSSO-SCE based estimate was around 91 per cent of the PFCE in 1986-87 but as regards the estimates of next two rounds i.e. 52nd (1995-96) and 64th (2007-08), it in fact exceeded the PFCE estimate of per capita private expenditure on education. The SCE estimate based on the recent survey i.e. 75th (2017-18) round formed around 80 per cent of PFCE. As a percentage of GDP it doubled from 1% in 1986-87 to 2% in 2017-18 (Table 1).

One would also notice that the number of student population (irrespective of the reference age) increased from 127.1 million in 1993-94 to 340.9 million by 2017-18. It has registered just a threefold increase but expenditure on education per student or per person has registered a 54 times increase! One of the factors as mentioned above, for the increase in per capita expenditure on education is privatisation. In fact, the share of private sector has increased during the last three decades. The overall percentage of students (among reference-age population) attending private educational institutions in India was 27.6 per cent in 1986-87 and it has increased to 40

per cent in 2017-18 (Figure 8). It is very predominant in urban areas wherein the percentage of students attending private educational institutions has increased from 45.4% to 65.0% per cent during the same period. Even in rural areas it increased from 19% in 1995-06 to 30.8% in 2017-18. It indicates rapid spread of private sector into the countryside as well. More importantly the expenditure on education incurred by the students attending private institutions (aided and unaided together) accounted for little less than half of the total private expenditure on education in India in 1986-87 and it has increased to more than three-fourths of total in 2017-18 (Figure 8). Such a trend of privatisation of education is very much disquieting.

Figure 8: Trend in Privatisation of Education in India



Note: 1. Percentage among total students in the reference-age population which varies across NSSO-SCE Surveys; 2. Figure 2b represents the rural and urban combined.

Source: Authors' compilation and calculation based on NSSO-SCE Reports.

Table 2: Average Private Expenditure on Education per Student (Rs.) in India by Level of Education – 2017-18

S No	Level of Education	All	Govt.	Pvt Aided	Pvt Unaided
1	2	3	4	5	6
1	Pre-primary	8,997	1,030	13,223	12,834
2	Primary	6,024	1,253	12,889	14,485
3	Upper Primary/Middle	6,866	2,181	13,243	17,360
4	Secondary	9,013	4,078	12,487	20,804
5	Higher Secondary	13,845	7,001	16,415	25,852
6	Diploma/Certificate below Graduate	12,045	7,647	21,037	19,291
7	Diploma/Certificate Graduate and above	14,823	12,817	22,232	15,453
8	Graduate	14,264	10,501	16,769	19,972
9	Post-Graduate and above	18,110	14,656	19,388	26,839
10	All	8,331	3,135	14,155	17,082

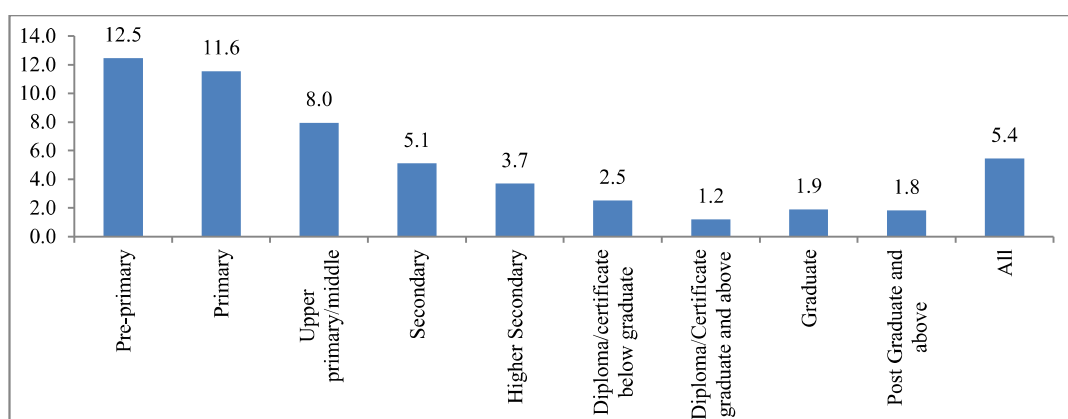
Notes: 1. Rural and Urban Combined; 2. Values are Rs. and in current prices.

Source: NSSO-SCE Key Indicators Report of 75th (2017-18) round.

The cost of education has increased with the growth of private institutions especially that of private unaided ones and growing enrolment in these institutions. As it is exhibited through Table 2 and Figure 8, first, the overall per capita private expenditure on education (per student) is five times higher for students attending private unaided intuitions when compared to their

counterparts in Government institutions. Across the levels of education, the ratio of private unaided to government is interestingly very high in case of pre-primary students attending private institutions and it is followed by at primary and middle levels of education (Figure 8). It is lowest in higher education. Second, the overall average per capita private expenditure (per student) on pre-primary education is higher than that of primary and middle levels education. Third, cost of education in private aided institutions is competitively high on the lines of private unaided institutions. Fourth, expenditure on higher levels of education in the government institutions as well is considerably high. That is why the lower ratio of private to public as mentioned above. It may be because of increasing self-finance courses in government institutions. Also, the costs (like transportation, uniforms, books etc.,) other than tuition fee which is free, may be equally applicable to students in government institutions as well.

Figure 9: Ratio of Private Unaided to Government Institutions in respect of Average Expenditure on Education per Students by Level of Education in India – 2017-18



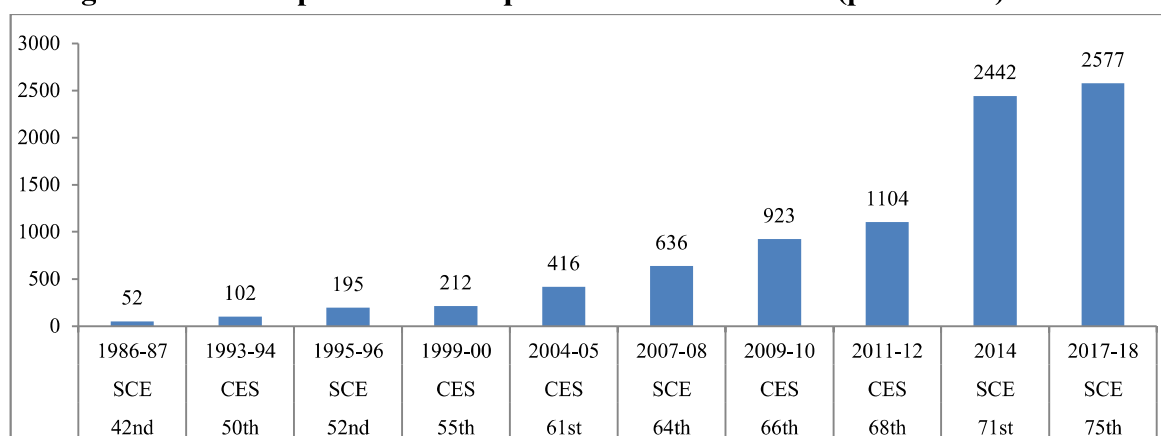
Notes: 1. Rural and Urban Combined.

Source: Authors' calculation based on NSSO-SCE Report of Key Indicators of 75th (2017-18) Round Survey.

In all, the NSSO-SCE survey estimates show that the trend over a period of last three decades is consistent with the other estimates (PFCE and NSSO-CES): a manifold increase in per capita expenditure on education over and above the increase in GDP and hence its percentage in GDP. Trend in privatisation is explicit and its contribution to private expenditure on education.

Broad Trend across Rounds of Surveys for the last three Decades

While taking note of the methodological issues in estimates of expenditure on education across the NSSO rounds, the below Figure 9 presents the trend in per capita expenditure on education (per person) in India during the last three decades. It is based on various rounds of both the CES and SCE surveys.

Figure 10: Per Capita Private Expenditure on Education (per Person) in India

Notes: Rural and Urban combined.

Source: Authors' calculations based on various NSSO-CES and SCE Survey Reports.

There is a consistent trend in per capita expenditure on education (per person) across various rounds of surveys over the last three decades period. It indicates more than fourfold increase during the 1990s and fivefold increase during the first decade of 21st Century. There is a threefold increase during the last decade. Such an increase with the tendency of strained private pockets in meeting the growing demand definitely would have far reaching implications for affordability and access to education. The NEP 2020 appears not so concerned about it and in fact undermining such implications.

V Concluding Remarks

The present paper examined the private expenditure on education while exploring the NSSO-CES and NSSO-SCE estimates related to household or private expenditure on education. It is observed that the share of expenditure on education with respect to GDP and total HCE is increasing that in turn shows that household expenditure on education is growing faster than the total HCE and GDP. Although there is negative association between expenditure classes and the per capita expenditure on education along with its share in total HCE, it is growing faster among the bottom economic stratum their per capita expenditure on education and its share in their total HCE. Therefore, the ratio of top 10% of population by HCE to that bottom 10% in terms of per capita household expenditure on education had declined. It shows increasing prioritisation of education even among the poor household. But on the other hand it is also indicating increasing burden on the poor to spend on education which would have been otherwise served through public investment.

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Appendix

Data Sources and Methods: Methodological Issues

Two important sources of information or estimates on private expenditure on education are: PFCE estimates of NAS and NSSO survey estimates. In the national income accounting framework, total private expenditure in general holds major share in the GDP at market prices. In India, National Accounts Statistics (NAS) division of Central Statistics Office (CSO) estimates the Private Final Consumption Expenditure (PFCE) following the *commodity flow method*. Educational services is one of the core item group for NAS estimates.

As regards the other alternative, to understand the household level living standards, poverty conditions along with economic inequalities, large scale household consumption expenditures surveys are conducted to make estimate in this regard. National Sample Survey Office (NSSO) through its Consumer Expenditure Surveys (CES) based on *recall method* captures and estimates the household consumption expenditure (HCE). Although every round of NSSO surveys capture household consumption expenditure (since 1950-51), they are based on very thin sample and useful for overall estimate at the national level only. The quinquennial rounds of CES that began in early 1970s are large sample surveys and hence they are useful for estimates at subnational levels (States and Regions) and economic classes (percentiles, quartiles/quintiles, fractiles or deciles) along with commodity level estimates.

The first quinquennial CES was started in 27th round (1972-73) and it was followed by 32nd (1977-78), 38th (1983), 43rd (1987-88), 50th (1993-94), 55th (1999-2000), 61st (2004-05) and 66th (2009-10) rounds. The last large sample CES estimates available is one which was conducted in the 68th (2011-12) round. In fact it was conducted to replace the non-normal estimates of 66th round survey because the year 2009-10 was found to be not a normal year (as it was affected by drought). Although more recently there was the 75th (2017-18) round which has carried a large sample CES, Government of India has withdrawn the estimates and report owing to unknown reasons. Education encompassing the household expenditure on fee, books, stationery etc., is one of the commodity group for which CES Schedule captures the amount spent on it by each sample household.

Conventionally, NSSO-CESs are based on 30-days reference period in capturing the expenditure on various goods and services consumed by the households. In other words such surveys have been capturing the expenditure incurred on such goods and services listed in the schedule, during the last 30 days before the survey. The 30-day reference period was used across all the commodity groups without exception. Although for the relatively infrequent categories of commodity groups (I-type categories) double reference period (30 and 365 days) was used in all surveys from 27th (1972-73) to 68th (2011-12) rounds except 55th (1999-2000) round, the estimates made available through NSSO reports -were based only on 30-days reference period till 50th (1993-94) round¹. In the 55th (1999-2000) round, the 30-day reference period was

¹ The Reports (NSS Report no. 357 and 404) based 38th (1983) and 50th (1993-94) round of CES had an attempt that made it available such an estimates of MPCE (it was said to be adjusted MPCE) first time using 365-day reference period of concerned item groups (see NSSO, 1989&1997). Such an estimate is known now as mixed reference period (MRP) estimate. It is mixed because, all the other items groups the estimate is based 30-days

withdrawn for these five relatively infrequent categories of commodity groups and used only the 365-day reference period. In the subsequent rounds, 61st (2004-05) onwards, double reference periods were used for these five commodity groups (I-type Category) and estimates based on both the reference periods were made available. Education is one of the five relatively infrequent categories of commodity groups (I-type Categories), and in fact was made part of the double reference period² category in 1993-94 (NSSO, 2006: 28).

NSSO also introduced certain changes further with regard to reference period of recall in 66th (2009-10) and 68th (2011-12) rounds of CES. It has introduced first-time the 7-day reference period for frequently purchased non-durable goods of food items like vegetables/ fruits and fish/ meat (II-Type category). In this respect, it has canvassed two schedules in these two rounds of survey with the same consumption item groups but varying in the reference periods. Schedule I is usual one and repeat that of previous rounds i.e. the double reference period is for I-Type Category of item groups along with 30-day reference period for all the item groups. Schedule II has only a 365-days reference period for item groups of I-Type category, 7-day recall period for II-Type category item groups (like vegetables) and 30-day recall period for all the other item groups (III-type category).

In this respect, there are three different estimates made for total household consumption expenditure based on these two rounds (66th and 68th). One is based on usual reference period (URP) for all the item groups (30-day reference period only). Second is based on the mixed reference period (MRP) i.e. 365-days for some item groups and 30-day reference period for all the other. These two estimates based on information captured in the same scheduled i.e. Schedule I. Third estimate is based on Schedule II which uses three reference periods (365, 7 and 30 days) for three different item group categories (I, II and III type categories). All the previous rounds have canvassed only one schedule with double reference period. They had a scope for two different estimates, one based on URP and the other on MRP. Hence, expenditure on education based on the CESs since 50th round has two or three different estimates.

Further to CES, certain rounds of NSSO surveys also focussed on social consumption on education (NSSO-SCE) along with health. It started in the 35th round (1980-81) and followed by 42nd (1986-87), 52nd (1995-96) 64th (2007-08), and 71st (2014) rounds; the recent one is 75th (2017-18) round. The results of the first survey (of its kind) in 35th round, however, were not brought out, while subsequent rounds of the survey were published (NSSO, 1998:1). The 71st (2014) round however differs from the other rounds of SCE in terms of duration of the survey which was half-an year (six months period) while all the others had one year period. All these rounds of surveys (NSSO-SCE) in fact covered both health and education but with separate survey schedules. They were essentially to assess the benefits derived by households belonging to different sections of the society from public services in the domains of education and health

reference period and for those item groups having double reference period (30 and 365 days) the estimate is based on 365-day reference period. When these estimates of these two groups of items are combined it is referred to as MRP.

² It was only three of the five I-type categories were given the double reference period up to the 43rd (1987-88) round; education and institutional medical care were included in the category from the 50th (1993-94) round onwards (NSSO, 2006: 38).

and private expenditure on these services. The reference period for the NSSO-SCEs especially for capturing expenditure, is the last 365 days.

Therefore, these are the three major and important sources in India capturing and estimating the private expenditure on education. One would expect ideally the estimates of all the three sources should match or converge, but they are not so in reality. Especially, the growing divergence between Private Final Consumption Expenditure (PFCE) from National Accounts Statistics (NAS) and Household Consumption Expenditure from NSSO Quinquennial Round Survey on Consumption Expenditure (NSSO-CES) is a cause of concern (see GoI, 2015). One of the reasons is that while the PFCE estimates cover expenditure of resident households as well as that of not-for-profit or non-profit institutions serving the household (NPISH), CES estimates covers only the resident households. Second is the methodological one, while the PFCE estimate of NAS is based on commodity flow methods, the CES estimate of NSSO is based on the method of sample survey and respondent recall. For the reasons just mentioned, there is a growing divergence between PFCE of NAS and household consumption expenditure from NSSO quinquennial round survey (CES) on Household Consumption Expenditure (HCE) and it is a cause of concern (Table 1A). Such difference is very high and divergence has increased over a period especially in case of non-food expenditure.

Table 1A: Difference in NAS and NSSO Estimates on Private/Household Total Consumption Expenditure in India

Year	NSSO-CES Estimates (Rs. Cr)			NAS-PFCE Estimates (Rs Cr)			% of NSS-CES in NAS-PFCE		
	Food	Non-food	Total	Food	Non-food	Total	Food	Non-food	Total
1	2	3	4	5	6	7	8	9	10
1972-73	23420	9790	33210	23379	11752	35131	100.0	83.3	94.5
1977-78	36500	20030	56530	39801	23282	63083	91.7	86.0	89.6
1983	69735	39996	109731	85613	60471	146084	81.5	66.1	75.1
1987-88	106205	67560	173765	122805	101256	224061	86.5	66.7	77.6
1993-94	224066	131704	355770	315243	259529	574772	71.1	50.7	61.9
1999-00	410918	305473	716391	647011	610530	1257541	63.5	50.0	57.0
2004-05	481189	485204	966393	769500	1156092	1925592	62.5	42.0	50.2
2009-10	1017817	1040111	2057928	1371888	2349566	3721454	74.2	44.3	55.3
2011-12	1332965	1496601	2829566	1858707	3308739	5167446	71.7	45.2	54.8

Notes: 1. Values in columns 2 to 7 are in Rs. Crores and in Current Prices; 2. Figures represent total Consumption Expenditure; 3. Up to the 50th round (1993-94) for NSSO-CES, values are URP estimates, for 61st round (2004-05), it is MRP based estimate, and for the 66th (2009-10) and 68th (2011-12) rounds they are MMRP (Schedule 2) based estimates; URP – Usual Reference Period; MRP – Mixed Reference Period; MMRP – Modified Mixed Reference Period;

Source: Government of India (2015).

As regards the availability of estimates for expenditure on education, the PFCE of NAS estimates are available since 1950-51 to the recent (2019-20). The NSSO reports that carried the estimate of CES up to 50th (1993-94) round clubbed the expenditure on education in the *miscellaneous goods* category. The CES estimate for expenditure on education is however made available since 50th (1993-94) round. The estimates of private expenditure on education based on NSSO surveys on social consumption on education (NSSO-SCE) are made available since 42nd (1986-87) round onwards.

NSSO-CES estimates are made separately for rural and urban areas and made for a month period (for 30-days period). They have to be combined to get overall value using rural and urban population weights and it is to be annualised to get yearly value. It is important when we make

comparison with PFCE and public expenditure, estimates of which are made for the year. Following are the formulas to derive overall and annual values.

$$\text{Annual value of CES} = \text{Monthly value of CES} / 30 * 365 \quad \text{-----} \quad 1$$

$$\text{Rural-Urban combined value (Yru)} = (\text{Yr} * \text{Wr}) + (\text{Yu} * \text{Wu}) \quad \text{-----} \quad 2$$

Y- Expenditure value

W – Weight; **r** – rural; **u** – urban; **ru** – rural and urban combined

'/' - symbol of division; '*' – symbol of multiplication

As the reference period of NSSO-SCE is last one year (365 days), it does not have to be annualised again but like NSSO-CESs as these estimates are made separately for rural and urban, they need to be combined to get over all estimate following the above formula. Secondly, like NSSO-CESs the estimates of NSSO-SCE on expenditure on education are in per capita values. But unlike NSSO-CES the NSSO-SCE estimates of expenditure on education are per capita per student, not for population. For a comparison purpose it needs to be converted the per capita per student values into per capita per person (population) through following method.

$$\text{Nc} = \text{N} * \text{r} \quad \text{----} \quad 3$$

Nc – Reference-Age Population size (ex: 5-29 Years) i.e. school/college-going-age persons;
N – Total Population; **r** - % of reference-age population in the total population

$$\text{S} = \text{Nc} * \text{a} \quad \text{----} \quad 4$$

S - Students i.e. number of persons in reference-age attending educational institutions
a – percentage of reference-age persons attending educational institutions

$$\text{TPEE} = \text{S} * \text{PCPEEs} \quad \text{----} \quad 5$$

TPEE – Total Private Expenditure on Education

PCPEEs – Per Capita Private Expenditure on Education per Student

$$\text{PCPEEp} = \text{TPEE} / \text{N} \quad \text{----} \quad 6$$

or

$$\text{PCPEEp} = \{[(\text{N} * \text{r}) * \text{a}] * \text{PCPEEs}\} / \text{N} \quad \text{----} \quad 7$$

or

$$\text{PCPEEp} = \text{r} * \text{a} * \text{PCPEEs} \quad \text{-----} \quad 8$$

PCPEEp - Per Capita Private Expenditure on Education per Person

Estimated values of 'r', 'a', and **PCPEEs** are available from the published reports based on NSSO-SCE surveys, total population figures for the relevant survey reference year can be derived from the Census of India population figures or RGI projections. When per capita

expenditure per student was given by type of course ('i' = general, technical and/or vocational) or level of education ('i' - primary, middle, secondary and/or higher education), the average can be derived as:

$$PCPEEs = \sum_{(i=1 \text{ to } n)} PCPEEs_i * W_i \quad \text{-----} \quad 9$$

and hence finally the per capita per person:

$$PCPEEp = r * a * \sum_{(i=1 \text{ to } n)} PCPEEs_i * W_i \quad \text{-----} \quad 10$$

Taking into account methodological issues, availability of estimates and their transformations based on calculation methods mentioned above, the main analysis above is based on NSSO estimates reported in various reports published/released following the respective rounds of survey. The NSSO-CES estimates of private expenditure on education are available in reports following the 50th (1993-94) round and hence the following analysis covers thenceforth. Also the analysis of estimates based on NSSO-SCEs is made using such survey estimates covering four rounds since 42nd (1986-87) round to the recent 75th (2017-18) round. As the 71st round (2014) of SCE survey is slightly different from the rest, it is skipped in the main analysis.

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