

THE TREND AND PATTERN OF STATE EXPENDITURE FOR EDUCATION IN ASSAM

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Abstract

Public investment in education is a universally accepted phenomenon since education is considered like any other services of the economy whose returns tend to be higher with higher levels of attainment of human capabilities. This paper attempted to shed light on whether the economic reform of 1991 had any impact on the level and trend of social sector expenditure for education sector in Assam. It was found that due to the Structural Adjustment Policies as well as fiscal conditions of the state, trend of education expenditure declined due to which attainment of improved outcome indicators could not be achieved as projected.

Keywords: Social Sector Expenditure, Human Capital, Education Expenditure, Economic reforms, Outcome Indicators.

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Karabi Introduction

Public expenditure as a fiscal instrument for social welfare got popularity after the Second World War with the successful projection of Keynesian hypothesis that public expenditure for social welfare could stimulate aggregate demand and remove the instabilities and fluctuations in the business cycle. The excessive reliance of the Classical Economists on efficacy of free market mechanism helped them to believe that Laissez faire was a pragmatic way to follow up until it failed to address the question of distribution in the economy. This fallacy in distribution required state intervention with the development of other welfare factors for everyone. However the Great depression of 1929 proved the inefficacy of market mechanism correcting itself automatically. Keynes advocated "wisely managed" capitalism, in which intervention would minimize the failures of the market without affecting the basic principles of the market economy. The end of Laissez-faire, according to Keynes, was not the end of the market place, government intervention in Capitalism should help Capitalism overcome the obvious problems that threatened its survival (Burgin).

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The crisis of 1970s once again raised strong arguments for restricting state intervention in economy and to leverage the crisis, the role of interventionist state and public finance was once again redesigned. Tight monetary policy to counter high inflation was the first component of to be put in place in the early 1980s; the second was with respect to supply side economics because production and economic growth slowed down, leading to stagflation. In the current phase of liberal era (called neoliberalism), the main thrust in analyzing government expenditure focuses on understanding the nature and types of expenditures through which the state can intervene in the economy, influencing economic mechanism and social relations(Stanescu & Nedelescu,2012). Neoliberal economic doctrine is closely connected with Smith's advocacy for laissez faire and draws its political legitimacy largely from John Locke's theorization on political liberalization. There is no longer a conflict between the self interest of the economic subject and the freedom and rights of the citizen corporation. Sen's, Capability approach, which sees development people's capabilities to function argues that for achieving development it requires removal of different kind of 'unfreedoms' that leave people with title choice and opportunity. Sen's Capability Approach thus creates an indirect legitimacy to the right based approach of the Neo-liberal state.

Mere economic growth is not sufficient to achieve sustainable development since the fruits of growth may not be reached to the bottom most section of the society. In a developing country like India, the government's expenditure on social sector assumes importance on three accounts. First, the magnitude of deprivation in the country being too large cannot be left to the market forces alone to tackle. Secondly, the proportion of poor households utilizing government services is higher as compared to the richer households and thirdly, to ensure clearly articulated outcomes in social sectors such as Sustainable Development Goals .Therefore in India along with the public provisioning in health and education, private sectors have been allowed a primacy in the upper end markets.

Education is a pre-requisite of attainment of individual share in economic growth, development and social justice. Sen's, Capability Approach considers health and education as the prime requirements for attaining capabilities of people. Education basically is a process to enhance the capacity of people for achieving optimum welfare. G. S. Becker's human capital theory, which showed that economic development has been achieved by countries through substantial investments in human capital, paved the way for emphasis on returns to education and in investment in education. In many countries like USA, Japan, UK, Australia, China etc. public provisioning of elementary education becomes one of the contributing factors towards economic growth (Choudhury, Dutta 2013). Importance and necessity of public investment in Elementary and Secondary Education has been universally accepted as education is considered like any other services of the economy whose returns tend to be higher with higher levels of attainment of human capabilities.

During the pre independence period, Charter of 1813, by giving importance on future policy of education emphasized on establishing educational institutions to create the required manpower for its administration in India. The need, extent, nature and objectives of education system during this period received attention in Education Commission, 1882 and ending with Sargent Report, 1944. However, the overall Scenario was not satisfactory as education was primarily focused not on creating a knowledge society but to meet the requirements of the state. The education therefore grew not for its cultural values but for the economic return associated with it. Mass primary schooling was never achieved under colonial education policy and literacy rates remained fairly stable from 1850 to 1919 averaging less than 10% in 1911.

After independence, education emerged as a primary concern for the new nation, but it was left as a state subject primarily because compulsory primary education had to be imparted in mother tongue. The state in India being reorganized on linguistic basis, therefore the onus of providing compulsory primary education as enunciated in the Article 45 Constitution fell on the states. However India remained far from attaining the goal of UEE. The primary reason as argued by J.P. Naik (1976) is that the Government of India had been taking decisions in all fields of education in post independence period and these decisions were mostly being accepted by State governments. The results, however, he argued were accidental and was due to two extraneous circumstances-(1) the political fact that the same party ruled at the centre and the states and (2) the financial fact- the most of these decisions had been supported with liberal financial assistance. In 1976, education was shifted to Concurrent list.

In the aftermath of the BOP crisis and resultant SAP measures during 1990s, India signed the Anderson Memorandum titled "Trade reforms in India" dated November 30, 1990 which included 12 clauses among

which more major clauses included cuts in social sector spending to reduce fiscal deficit, amendments to the existing laws and regulations to support reforms, market friendly approach and less government intervention and liberalization of the banking system. The new conditionality of IMF and World Bank was largely kept away from public information until the budget presentation by Union Government in 1992 (Parliament Debate, Budget Session: 1992-93). States in India spent more than 80 percent of the social sector expenditure in the country. Throughout the 1990s, social sector expenditure, as a percentage of GDP, was lower than in the late 1980s. Taking the centre and states together, India spent 6 to 8 percent of its GDP on the social sector in the 1990s. In the same time the share of central government spending on social sector increased steadily since the 1990s through a number of CSS while the share of state spending came down. This was largely due to the implementation of the new policy conditionalities of IMF and World Bank. Within the social sector both education and health do not take a centre stage on the political issues in general elections unlike rural development issues and cuts in both these sectors often remain away from public information and debates in India.

The share of expenditure in education from all departments devoted to education declined from around 4.1 percent in 1990-91 to barely 3 percent in 1998-99 over the years. The education expenditure of the centre increased from 0.25 percent of GDP in 1994-95 due to increases in spending of elementary education and to a large extent (but not completely) related to the introduction and expansion of the mid day meal programme. The intra-sectoral allocations also show that there has been a shift towards elementary education since the 1990s. The Right of Children to Free and Compulsory Education Act became operative on April 1, 2010, since which enrolments have increased to become near universal and dropout rates have decreased. Despite this, the provisions of quality education with value addition still remain a distant dream.

However, it is not only the government expenditure, but also, the implementation of social services along with the provision of private services that determines the spread of education and health. Yet, we can say that India's low social sector expenditure is one of the major causes of its low social indicators. We have already stated that social sector expenditures were vulnerable to budget cuts. However, it has not been well examined whether the economic reforms were a turning point for the decline in social sector expenditure. Studies resulted in various outcomes-some showed a reduction in social sector expenditures during the 1990s while some showed an increase in social sector expenditure for the central government.

In Assam, the overall scenario of education sector is not satisfactory. Despite the suggestions of National Education Policy (1986) and provisions of right to Education Act 2009, good quality universal elementary education for 6-14 years old children through appropriate infrastructure could not be achieved till today. High dropouts, less enrolment, high pupil teacher ratio, irregular supply of free text books etc are the common problems that are seen in the different districts of Assam. The first and foremost condition of access to education is its availability and physical accessibility of educational institutions with proper infrastructure facilities which again largely depends on government expenditure on education. In Assam, among 66,286 total schools, 75.68 percent schools are under government management, 12.41 percent schools are under private management and 11.91 percent schools are Madrasas & unrecognized schools. (DISE, 2016-17). An analysis of the plan and non-plan expenditure for elementary, secondary and higher education sector shows that the overall scenario has been seemingly unsatisfactory. Moreover, the impact of budget cuts in the context of economic reform measures and structural adjustment programmes do have some impact on the expenditure for social sector like education. In the present paper an attempt is made to understand the trend and pattern of government expenditure in the pre and post reform periods in respect of elementary and secondary education in Assam.

Review of Literature

Social sector spending had been low in India even during the pre-reform period. Drèze and Sen (1995) showed that primary education and health were already far more widespread at the beginning of economic growth in East Asian countries than they were in India at the beginning of the plan or even when economic reforms were launched. Therefore although India remained committed to social development, the public expenditure on the same had not been commensurate. . A careful review of the literature in the area shows that most of the studies had identified overregulated structure of the economy as the main reason for lack of initiatives in social policy (Dreze and Sen: 1995). It was also revealed that the correlation coefficient between government deficits and expenditures on education and health between the seventies and eighties was low, i.e. an increase in government spending led to less than proportionate increase in social services. The coefficients for education and health expenditures between state governments and the central government were above 0.5 in 10 of the 15 states (Panchamukhi: 2000). In his analysis Sato (1988) showed that transfers from the central

government to the states between 1972 and 1984, favoured infrastructure investment especially in states with high per capita state domestic product and this was the reason for which the state governments had to reduce social service expenditures. Since the fiscal transfers to raise the state social service expenditures were restricted, therefore no state governments increased social service expenditures at the cost of increased revenue deficits.

Social sector expenditures were vulnerable to budget cuts even before the reforms of 1991 was launched and many studies found that social service expenditures declined under the pressure to reduce fiscal deficits in the post reforms period (Gupta and Sarkar 1994; Prabhu 1994; Jalan and Subbarao 1995; Prabhu 1996; Prabhu 1999; Swaminathan and Rawal 1999; Basu 2000; Prabhu 2001; Tilak 2002). Prabhu and Sarkar (2001) examined the real per capita social service expenditures in the 15 states from 1974/75 to 1995/96 and found that the expenditures trends showed a decline even before economic reforms began in 1991. Using different methodologies, all of these studies analyzed the trend of social service expenditures after economic reforms began, and the studies concluded that there has been a decline in the trend in these expenditures by state governments, except in a few states such as Kerala which were traditionally committed to social policy. Tsujita (2005) examined the social sector expenditure in 15 Indian states from 1980-81 to 1999-2000 to find out whether the economic reforms had any significant impact on the level and trend of these expenditures and found that real per capita social service expenditure in most of the 15 major states started declining in the 1980s due to their worsening fiscal situations. The trends in expenditure after 1991 were a continuation those from the pre reform period.

The decreasing role of state in social sector spending is another feature that is reflected in various studies. Studies made by S Guhan (1995) revealed that during 1990-91 to 1995-96, the central government expenditure on rural development and social services increased in nominal terms while the state governments' outlays on these two sectors marginally declined as a ratio of their aggregate expenditures.

From the overall review of literature, which covers up to the mid and late 1990s, it is found that state governments generally decreased social service expenditures in the 1990s; however, whether this was due to the economic reforms or was a trend that had started earlier is an area that needs exploration and is particularly significant for states like Assam which is a special category state. The present study makes an attempt to analyze the social sector expenditure of Assam government over a longer time frame and find out the impact of economic reforms on the social sector expenditures.

The paper attempts to shed light on whether the economic reforms of 1991 had any significant impact on the level and trend of social sector expenditures for education sector. Here we also investigate the implications of education spending on the development of education sector by analyzing linkages between education expenditure and outcomes by looking into two important indicators viz, enrolments in respect of primary education and number of HSLC passed in respect of secondary education.

The paper is structured as follows: In section II, Research Method is provided. Section III contains results and analysis. Section IV concludes the paper.

II Research Method

The present study considers only the government education spending in Assam. It is primarily based on secondary data collected from official publication of Planning Commission, Public Finance Statistics, Government of Assam, Economic Survey of Assam and RBI. Education expenditure of the Assam Government during the period of 1981-82 to 1991-92(Pre liberalization period) and 1992-93 to 2013-14(Post liberalization period) has been taken up for analysis. Besides using simple percentages, Compound growth rate, trend equations have been used to examine how economic reforms have affected the government expenditure for education sector

III. Results and analysis

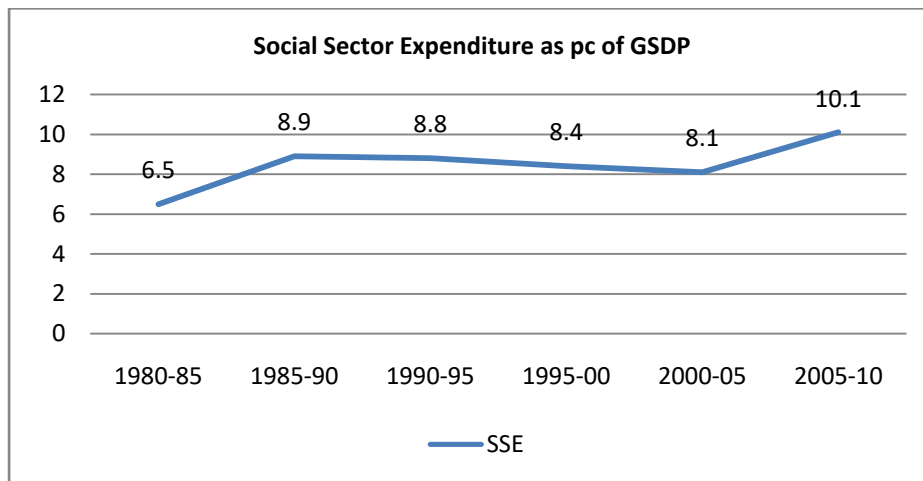
Expansion of education through adequate institutions with proper infrastructure largely depends on government expenditure. Since the first five year plan to the 12th five year plan, emphasis was given on expansion of education by the Union and the State governments. The diverse expenditure pattern reveals that governments' priority was shifted from primary to secondary, from secondary to higher and technical education from time to time. However considering the fact that access to primary education is the first key for future access to secondary and higher education, union and state governments give more emphasis on the elementary education.

Despite the various national and sub national policies that are formulated with the objectives of universalisation of elementary education and expansion of the whole education sector, the targeted enrolment, institutions, infrastructure, literacy rate etc could not be achieved both in the national and state level.

A study of the fiscal status of Assam reveals that, Assam as a special category state is dependent heavily on central transfers for its social sector developments. On an average, central revenue transfers has been contributing more than 60 percent of the total revenue of the state except in the year 1993-94. The CAGR of central transfers has been found to be higher (.08%) than the CAGR of the state's own resources (-.12%). The Central grants, again mainly consists of CSS. The expenditure on social sectors was more dependent on Central transfers rather than state's own resources. The tax and non-tax revenue sources of government of Assam have been declining while the dependence on Central grants has been increasing over the years. Again we can say that the share of CSS has been increasing in the Central grants due to the Schematic target oriented transfers from the Central government under different programmes in the post reform period. The 'Mission' and 'Abhiyaan' mode of expenditure is more targets oriented in respect of access rather than quality in service delivery (Choudhury, Dutta, 2013).

An analysis of the state government expenditure reveals that there is a sharp increase in the social sector expenditure in the post 2005 period (figure 1.1). This situation is seen almost all Special Category states where higher proportion of their revenue is spent on social sectors. It is already mentioned here that the lion share of revenue of the state is comprised of central transfers. Therefore since the year 2005, when the Sarba Siksha Abhijan (SSA) and the National Rural Health Mission (NRHM) were launched, the SSE as proportion of GSDP increased to 10.1 percent. Prior to this, the SSE as a proportion of GSDP had been declining since the mid eighties due to the high fiscal deficit of Assam and low proportion of state's own revenue.

Fig: 1.1: Social Sector Expenditure as pc of GSDP (Assam)



When comparing data of Assam and all states it is again seen that although the social sector expenditure as a percentage of GSDP had increased after 2005, yet the per capita social sector expenditure in Assam gradually declines over the years. During 1980-85, the per capita social sector expenditure of Assam and the average of all states were same. But the per capita SSE of Assam declined thereafter (Table: 1.1)

Table: 1.1: Per Capita Social sector expenditure (Rs)

	1980-85	1985-90	1990-95	1995-00	2000-05	2005-10
All States	134	402	624	1097	1585	2735
Assam	134	306	524	802	1294	2503

Among the social sector expenditure, Education sector has been given top most priority which is reflected in the proportion of national income devoted to education. Education is financed by governmental as well as private resources. But due to the positive externalities associated with education, government is more committed to finance education. The beneficial impact of education spills over to the society. Therefore education is considered as a public good. Provisional of education may be sub optimal when left only to market forces and government intervention is required to provide an optimum level of education taking into account the private as

well as the social benefits (Chakraborti, Joglekar, 2006). The education expenditure of Assam government as a percent of NSDP did not reach in the recommended 6 percent (Education Commission, 1966). In the post reform period, from 1992-93 to 1997-98 education expenditure as a percent of NSDP was below 6 percent but since the year 1998-99, the same reached 6 percent. The pre reform average expenditure was 4.46% and that of the post reform average was 5.99%. However, the growth rate of education expenditure is gradually declining over the years.

Table: 1.2: CAGR of NSDP and Education Expenditure

Plan	NSDP(CAGR)	EDU. EXP (CAGR)
7 th	11.7	14.2
8 th	9.3	12.1
9 th	14.8	12.8
10 th	9.4	7.8
11 th	14.6	17.3

Source: Calculated from budget data, Govt of Assam

Table 1.2 shows that the compound annual growth rate as well as education expenditure decreased from 14.2 percent during the 7th plan to 7.8 respectively during the 10th plan period. This is mainly because of the increasing fiscal deficits as well as the short fall in state's own resources (as mentioned earlier) and gradual fall in plan grants. During the 11th plan period the compound annual growth rate of education expenditure again rose to 17.3 percent with the introduction of the popular concept of 'Inclusive Growth'. India's Eleventh Five Year Plan places the highest priority on education as a central instrument for achieving rapid and Inclusive growth. The concept of inclusive growth requires equity which refers to outcome or results and equality of opportunity which refers to access. Government of India therefore gave importance on universalisation of elementary education as it is the key for future access to secondary and higher education. In the eleventh plan, central government envisaged an outlay of about Rs 2.70 lakh crore at current price for education which was a fourfold increase over the tenth plan allocation of Rs 0.54 lakh crore at 2006-07 prices. The share of education in the total plan outlay increased from 7.7% to 19.4%. Around 50% of plan outlay was for elementary education and literacy, 20% for secondary education and 30% for higher education. The SSA and MDMS programmes were reoriented and higher amount of funds were allocated in order to achieve the desired goals. Although the funding pattern between centre and states was changed from 75:25 in the 10th plan to 50:50 in the Eleventh plan, yet the NE states needed to contribute only 10 % of the approved outlay as state shares which was the continuation of special dispensation for NE states during 2005-06 and 2006-07. As such the Assam government also contributed 10 % of the approved outlay and the rest was provided by the central government. During the first three financial years of 11th plan, GOI approved budget of Rs 62138.49, 61954.11 and 60473.6 lakhs respectively under the SSA scheme. Assam received Rs 409.70 crore during the 11th plan period under SSA. Moreover the CSS as a percentage of total revenue of the state increased from 4.71 percent in 2007-08 to 14.20 in 2009-10.

Mathematical Presentation

Now to know about the growth in the SSE, during the period 1981-82 to 2013-14 and to examine if there has been any structural break and consequent changes in the growth rates we use the following trend equation for the Time-series data on education expenditure.

$$\bullet \quad \text{Ln}Y_t = \alpha + \beta_0 t + \beta_1 D_t + \beta_2 D_t t + U_t \text{-----(1)}$$

Here

Y_t = SSE (Elementary & Secondary Education expenditure) at year t

D_t = Slope Dummy variable 1 for years after t*

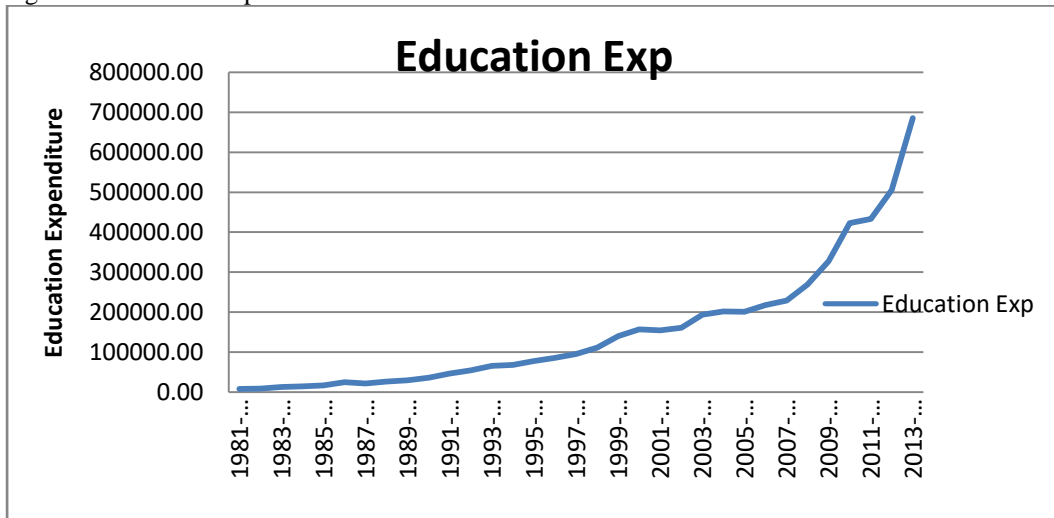
0 otherwise.

U_t = Error term

The equation aims at to specify the year of the shift in education expenditure in Assam. β_0 represents the growth rate and β_1 represents the magnitude of the shift in the growth rate of year 't'. Here the estimated equation is $\text{Ln}Y_t = 4.56 + 0.159t + 0.68D_t - 0.051Dt$. The result of regression analysis showed that shift in education expenditure happened in the year 1993-94, precisely in the period following economic reform. The growth rate of education expenditure during 1981-82 to 1992-93 was 16 percent while the same in the post shift period

1994-95 to 2013-14 had been 10.9 percent. This shows that the per year growth rate of education spending had been declining after the introduction of economic reform process. although the quantum of education spending has risen during post reform period (Fig1.2)

Fig: 1.2: Education Expenditure of Govt. of Assam



Social sector expenditure of a state depends on the central transfers as well as the state’s own resources. Therefore NSDP plays an important role in the development of education and other sector. The existing literature (Charavarty, Joglekar 2006) highlights the significant role played by NSDP in determining education expenditure. Hence before examining how much NSDP explains the variation in education expenditure we take another equation to examine the trend and shift in NSDP as follows:

$$\text{LnY}_t = \alpha + \beta_0 t + \beta_1 D_t + \beta_2 t \cdot D_t + U_t \text{-----} (2)$$

Here Y_t=NSDP at year t

D_t =Slope Dummy variable 1 for years after fiscal year of shift
0 otherwise.

U_t=Error term

The estimated equation is LnY_t =5.099+0.138t+0.143Dt-0.022t.Dt. The result shows that during the post reform period, the quantum of NSDP increased to a little extent (0.5 percent) than pre reform period. But the growth rate of NSDP declined by 11.6 percent.

Now in order to examine how much the NSDP explains the variation in education expenditure during the study period, we take another equation as follows :

- $\text{LnY}_t = \alpha + \beta_0 \text{LnNSDP} + \beta_1 D_t + \beta_2 D_t \text{LnNSDP} + U_t \text{-----} (3)$

Here Y_t=SSE (Elementary and Secondary Education Expenditure) at year t

D_t =Slope Dummy variable 1 for years after fiscal year of shift
0 otherwise.

U_t=Error term

The estimated equation is LnY_t =.2874+1.9LnNSDP+1.83D_t-.169D_t.NSDP. The result shows that 98 percent (R²=98.6) variation of education spending is explained by NSDP. Therefore the low growth rate of NSDP became one of the reasons for the low rate of growth of Elementary and Secondary education expenditure in the state.

The NPE 1986 and revised NPE 1992 emphasized on the constitutional obligation of providing universal education at the elementary level through greater access and retention of children up to 14 years of age. The NPE emphasized the need for quality education with higher enrolment of girls, SCs and STs.

In Assam, the responsibility of administration and control of elementary education is conferred on the Director of Elementary Education and that of secondary education upon the Directorate of Secondary education. Based on the various educational policies, government of Assam has incurred expenditure on various levels of education. The priority was changing over the years and plan to plan.

If we look at the proportion of expenditure on Elementary and Secondary education to GSDP in Assam we get that during post reform period it was below 4 percent in case of Elementary and below 2 percent in case of Secondary education (Table 1.3). Although it is seen earlier that the ratio of total education expenditure to NSDP increased to six percent since 1998-99 yet the poor figures related to elementary education clearly reflect that state government's commitment towards UEE is far behind. Another thing to be noted is that there is a gradual decrease in the proportion of plan expenditure on elementary education to GSDP for Assam from the beginning of Ninth plan to the midterm of the Eleventh plan. Both the plan and non plan compound annual growth rate of elementary education decelerated during the post reform period.

Table: 1.3: Proportion of Expenditure in Elementary and Secondary education to GSDP (Post reform)

Year	PLAN	NON-PLAN	Proportion of in EE to GSDP	PLAN	NON-PLAN	Proportion of in SE to GSDP
1992-93	0.69	2.15	2.84	0.38	0.94	1.32
1993-94	0.82	2.35	3.24	0.45	0.84	1.29
1994-95	0.72	1.30	2.22	0.50	1.37	1.87
1995-96	0.78	2.04	2.85	0.46	0.73	1.20
1996-97	0.78	2.07	2.88	0.49	0.73	1.23
1997-98	0.89	2.10	3.94	0.46	0.73	1.20
1998-99	0.76	2.23	3.07	0.44	0.93	1.39
1999-00	0.66	2.12	2.80	0.40	0.86	1.26
2000-01	0.61	2.34	3.01	0.38	0.91	1.30
2001-02	0.55	2.19	2.77	0.36	0.94	1.30
2002-03	0.49	2.07	2.57	0.28	0.87	1.16
2003-04	0.38	2.46	2.88	0.22	1.03	1.25
2004-05	0.25	2.35	2.62	0.12	1.07	1.19
2005-06	0.28	2.05	2.36	0.09	0.96	1.05
2006-07	0.14	2.11	2.25	0.01	1.12	1.12
2007-08	0.00	2.10	2.27	0.04	1.08	1.12
2008-09	0.12	2.22	2.47	0.03	0.95	0.98
2009-10	0.20	2.15	2.36	0.01	1.05	1.08
2010-11	0.33	2.10	2.70	0.24	1.07	1.32
2011-12	0.22	2.02	2.75	0.13	1.06	1.21
2012-13	0.17	2.11	2.64	0.21	1.15	1.41
2013-14	0.48	2.26	2.74	0.31	1.25	1.55

So far non plan expenditure is concerned, it is seen that it is higher than the plan expenditure both in the pre and post reform period. But the CAGR of non plan expenditure is less than that of the pre reform period. Moreover the non plan expenditure over the years has been increased only due to the salary liability of the state government rather than other expenditure like training, textbook, scholarship and other quality improvements. The subsequent conversion of plan posts to non plan category increased the salary liability of the state government. The increase in salary component during various plan period particularly 10th plan period reduced the scope of spending for investment in infrastructural and training activities.

It is to be mentioned here that Govt of India introduced SSA in 2001 with an aim of achieving the objective of Universal primary education. This SSA roots back to DPEP in 1993-94 which covered 272 districts in 18 states of the country. The expenditure on DPEP was shared by Central government (85%) and the state government. Under SSA also state govt shares a major contribution.

The impact of economic reforms on the expenditure on Elementary education can be measured by the following equation:

$$\bullet \quad \ln Y_t = \alpha + \beta_0 t + \beta_1 D_t + \beta_2 D_t \cdot t + U_t \text{-----(4)}$$

Here Y_t = Elementary Education at year t

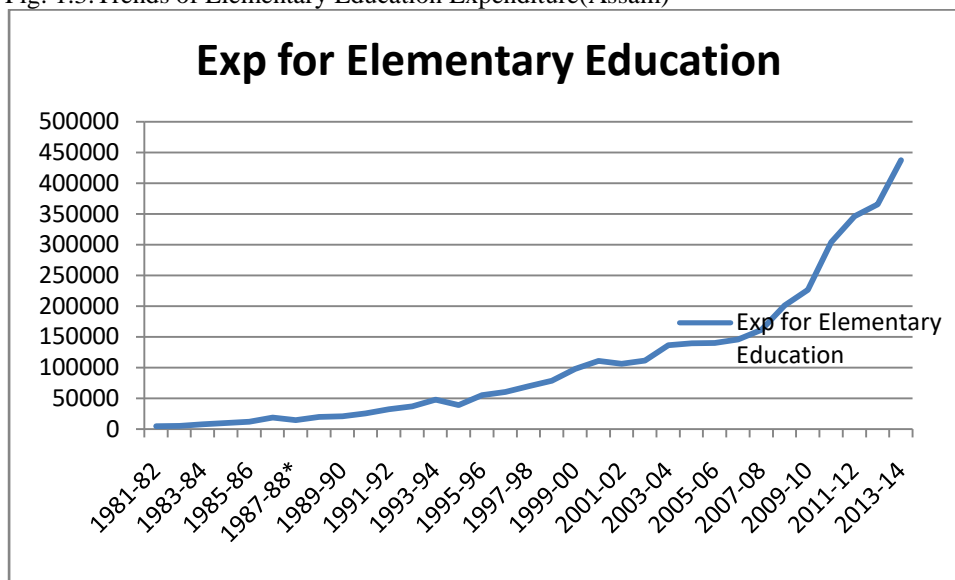
D_t = Slope Dummy variable 1 for post reform period

0 otherwise.

U_t = Error term

The estimated equation is $\ln Y_t = 5.576 + 0.167t - 0.058Dt$. The result shows that the per year growth rate of elementary education expenditure came down from 16.7 to 10.9 percent in the post reform period although the quantum of expenditure increased. (fig:1.3)

Fig: 1.3:Trends of Elementary Education Expenditure(Assam)



Now to show the impact of SSA on Elementary education expenditure, we take another equation as follows:

$$\ln Y_t = \alpha + \beta_0 t + \beta_1 D_t + \beta_2 D_{t,t} + U_t \text{-----(5)}$$

Here Y_t = Elementary Education at year t

D_t = Slope Dummy variable 1 for post SSA period
0 otherwise.

U_t = Error term

The estimated equation is $\ln Y_t = 1.767 + 0.109t - 0.394Dt + 0.016D_{t,t}$

From the result it is observed that the per Year growth rate of Elementary education expenditure increases by 12.5 percent after the introduction of SSA in Assam. This is due to the heavy central transfers to the state in the form of SSA fund.

Secondary Education

So far secondary education is concerned it is already mentioned that expenditure for secondary education never reaches to two percent of GSDP. The compound growth rate of plan expenditure for secondary education during pre reform period was 21.93 percent which fall to 13.50 percent during post reform period. In case of non plan expenditure for secondary education, the compound growth rate during pre reform period was 12.90 per cent which accelerated to 13.68 percent. The rise in non plan expenditure is due to the increasing salary liability of the secondary education since the plan expenditure is unable to cover the salary liability. Again it is seen that the plan and non plan expenditure growth rates of secondary education are higher than that of elementary education during the post reform period because the salary liability of the secondary education is greater than the elementary education (Choudhury, Dutta 2013). The decomposition of plan and non plan expenditure for secondary education of government of Assam according to various heads reveals that plan expenditure for secondary education as a percentage of GSDP was less than one percent in case of inspection in the pre reform period. It is marginally increased during post reform period, yet never touch one percent. Again not a single amount is spent on inspection under plan heads from 2009-10 to 2013-14. The non plan expenditure for inspection was a little bit higher than plan expenditure for the same. Although teacher training is a very important matter for achieving quality education, yet less than one percent of plan and non plan expenditure was spent on it during both pre and post reform period. Even no expenditure was incurred on it from 2008-09 to 2013-14 under both plan and non plan heads. Again more assistance was given to non-government schools than the assistance to government schools during pre and post reform periods. The pitiable expenditure pattern of the state government is one of the chief reasons behind the unsatisfactory overall educational attainments of the

state's population. As per Census 2001, only 17 percent of the literate populations of the state were matriculate, the number of which decreased to 7.5 percent as per Census 2011. Among the 19177977 literate people only 1445515 people are matriculate and 2507238 people (13%) completed the higher secondary education level.

Thus considering the importance of secondary education, the expenditure level was expected to increase but it didn't increase as expected even in the post reform period.

Table-1.4: Expenditure for Secondary Education as Percentage of GSDP (Post-Reform Period)

Year	Inspect (Plan)	Inspect (N Plan)	Teacher Training (Plan)	Teacher Training (N Plan)	Govt. School (Plan)	Govt. School (N Plan)	Non Govt. School (Plan)	Non Govt. School (N Plan)
1992-93	0.18	0.93	0.00	0.67	0.32	6.79	32.88	84.17
1993-94	0.21	1.11	0.21	1.09	0.46	5.32	33.86	74.75
1994-95	0.46	0.74	0.20	0.55	0.33	4.99	44.32	123.67
1995-96	0.44	0.71	0.07	0.45	0.41	4.62	39.63	66.31
1996-97	0.48	0.50	0.10	0.20	0.49	1.99	42.89	50.75
1997-98	0.62	0.66	0.01	0.31	0.21	1.82	40.58	69.74
1998-99	0.64	0.82	0.04	0.71	0.61	4.79	31.75	86.09
1999-00	0.21	0.64	0.02	0.33	0.41	3.04	32.65	81.10
2000-01	0.36	0.76	0.07	0.26	0.27	2.78	30.87	85.55
2001-02	0.31	0.60	0.05	0.47	0.44	4.64	28.77	86.95
2002-03	0.24	0.48	0.05	0.22	0.33	2.97	23.66	82.82
2003-04	0.08	0.74	0.03	0.20	0.18	2.05	18.27	99.46
2004-05	0.02	0.90	0.01	0.17	0.06	2.39	9.90	101.73
2005-06	0.02	0.80	0.01	0.17	0.04	2.08	7.20	92.40
2006-07	0.01	1.30	0.00	0.13	0.00	3.00	0.49	102.04
2007-08	0.00	1.81	0.00	0.04	0.00	3.47	0.10	93.81
2008-09	0.01	1.07	0.00	0.00	0.01	3.26	1.77	89.47
2009-10	0.00	0.90	0.00	0.00	0.00	3.40	0.18	85.72
2010-11	0.00	0.94	0.00	0.00	1.77	3.63	16.36	102.22
2011-12	0.00	1.10	0.00	0.00	0.00	3.15	3.08	101.37
2012-13	0.00	0.95	0.00	0.00	7.07	3.36	0.00	112.25
2013-14	0.00	0.85	0.00	0.00	0.00	3.03	8.02	120.54

Now to find out the impact of economic reforms on the expenditure on secondary education we take the following equation:

$$\bullet \quad \text{Ln}Y_t = \alpha + \beta_0 t + \beta_1 D_t + \beta_2 D_t \cdot t + U_t \text{-----(6)}$$

Here Y_t = Secondary Education at year t

D_t = Slope Dummy variable 1 for post reform period

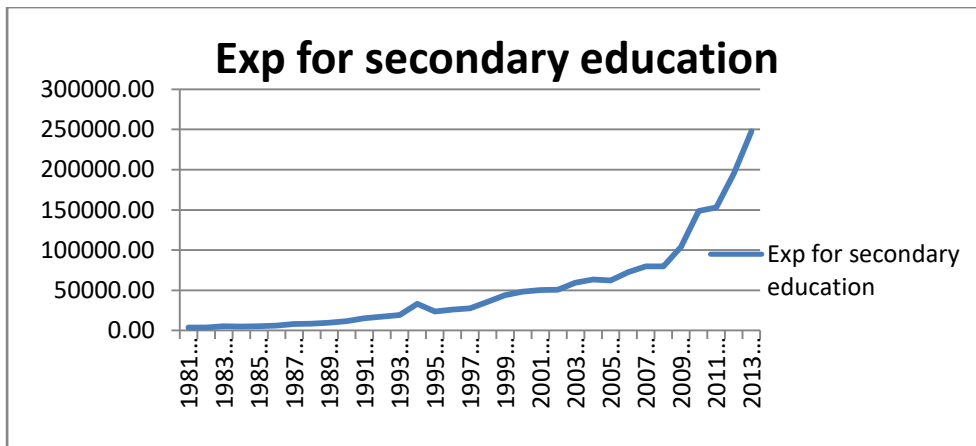
0 otherwise.

U_t = Error term

Here our estimated model is $\text{Ln}Y_t = 5.235 + .152t + .523D_t - .039 D_t \cdot t$

This result clearly shows that the growth rate of secondary education expenditure during 1981-82 to 1992-93 was 15.3 percent while the same in the post reform period 1994-95 to 2013-14 had been 11.4 percent. This shows that the per year growth rate of secondary education spending had been declining after the introduction of economic reform process. However the quantum of education spending has risen during post reform period (Fig1.4)

Fig: 1.4: Trends of Secondary Education Expenditure (Assam)



Now in order to examine how much the NSDP explains the variation in secondary education expenditure during the study period, we take another equation as follows:

$$\bullet \quad \text{Ln}Y_t = \alpha + \beta_0 \text{LnNSDP} + \beta_1 D_t + \beta_2 D_t \text{LnNSDP} + U_t \quad \text{-----(6)}$$

Here Y_t = Secondary education expenditure at year t

D_t = Slope Dummy variable 1 for years after fiscal year of shift
0 otherwise.

U_t = Error term

Our estimated model is $\text{Ln}Y_t = .091 + 1.004 \text{LnNSDP} + .682 D_t - .045 \text{LnNSDP}$

The estimated result shows that 99 percent variation of secondary education expenditure is explained by NSDP.

From the equations and discussions of the foregoing section we observed the trend and pattern of education expenditure in Assam. The results show that although the quantum of education expenditure (whether Elementary or Secondary) was less in the pre reform period than the post reform period, yet the per year growth rate of education expenditure was higher than the post reform period. This is because of the fact that government was committed to provide social services and there were no obligations to cut subsidy on social sectors like the post reform periods. Although government was able to increase the absolute amount of expenditure on education to a lesser extent, yet the per year growth rate of expenditure was increased. During the post reform period, the quantum of expenditure increased due to the increased amount of Central Transfers under the head Additional Central Assistance. However as a proportion of GSDP, education expenditure never reached the desired 6 percent level. Even during the post reform period, the education expenditure as a proportion of total social sector expenditure decreased. Among the total budgeted expenditure for social services, 65 percent was incurred for education during 2000-01 to 2004-05 which came down to 61 percent in 2007-08 and further to 51 percent as per the revised budget estimates for 2008-09. The proportion of education expenditure to total expenditure also declined during last years of ninth plan i.e. it declined from 26 percent in 2000-01 to 21 percent in 2001-02. Further it decreased during the Tenth plan period. The increasing fiscal deficits and the limited tax and non tax revenue of the government as well as gradual fall in plan grants attributed to the decline in education expenditure (Choudhury, Dutta 2013)

The economic reform policies taken by the Central government in July 1991 led to drastic reduction in public subsidies and development expenditures particularly on social services (Chakrabarty, Joglekar 2006) The social sector expenditure of the Central as well as State government as a percentage of GDP/GSDP declined after liberalization.

In case of Elementary education expenditure it is seen that after economic reform, the per year growth rate of expenditure declines. The low rate of growth of state's own resources and the reduced plan budget support for the education sector in the post SAP period are the reason behind the low rate of growth of elementary education expenditure. The fund flow for Elementary education increased after the inception of SSA in 2000-01. But the growth rate of expenditure was not as desired. The desegregated analysis of Plan and Non plan expenditure shows that there is a gradual decrease in the proportion of Elementary education expenditure from the beginning of Ninth plan to the midterm of the 11th plan period. During the first year of Ninth plan, i.e. in 1997-98 the plan expenditure for Elementary education as a percentage of GSDP was .89 which reduced to .20 in the year 2009-10.

Again a major portion of plan expenditure was spent on salary of the teacher. In case of Non plan expenditure also it is noticed that government needed to incur heavy amount on salary rather than on training and quality improvement programmes. No expenditure was spent on Text book and Scholarship programmes in the pre reform period except two or three years. During the post reform period, less than one percent expenditure was spent on Scholarship of students while in case of Text book 2.2 percent was spent in the year 2011-12 and before that only in 1999-00 and 2008-09, less than one percent was spent on that head. The picture is more surprising in case of teacher training in the post reform period. While in the pre reform period, teacher training expenditure accounts for more than 7 percent of total Non-plan expenditure and in 1987-88 and 1988-89, 18 and 25 percent respectively, not a single amount is spent on this important head of quality education in 14 years among 22 years from 1992-93 till 2013-14 and only less than 0.5 percent was spent on this head in the remaining eight years. Both in the pre and post reform period, expenditure on Inspection was less than three percent. This pathetic expenditure pattern affects the educational attainments of the state population. Census 2011 reveals that although 72.19 percent people of Assam is literate only 22.86 percent people completed the primary level. ASER 2011 shows that 4.19 percent children of 6-14 years age group are out of school.

The share of State government in the investment to Elementary education decreases due to resource scarcity and therefore dependence on Central funds for SSA and MDM gradually increases (Choudhury, Dutta 2013). In 2002-03, Central share of funds for Elementary education was 17.20 percent which increased to 47 percent in 2006-07.

It is worth mentioning that the expenditure for Secondary education did not receive much attention as more and more importance was given on universalisation of elementary education and expansion of secondary education has not been an agenda of policies on education. Considering the connecting link of secondary education in the education structure, the Annual Plan 2009-10 gave importance on planned interventions for expansion and quality improvement of secondary education. The per year growth rate of secondary education expenditure decreases in the post reform period due to the fiscal position of the state. However, after the implementation of the comprehensive and integrated flagship programme, RASHTRIYA MADHYAMIK SHIKSHA ABHIYAN (RMSA) from 2009-10 by the Government of India, focus is given on improvement of access and equity, enhance quality, accountability and ability to measure learning outcomes and promote standardization of curriculum and examinations across states. The “Assam Madhyamik Siksha Abhijan Samiti”, registered under the Societies Registration Act XXI of 1860 as per Memorandum of Association and Rules for RMSA, Assam is starting the implementation of RMSA and other Centrally Sponsored Schemes in Assam. With the help of SEMIS 2007-08, the assessment of status of secondary education is already started and mapping and identifying the middle schools to be upgraded are also in progress after massive survey exercises at habitation level as the part of preparatory activities. The fund sharing pattern of the Scheme is 90:10 for all NER States.

The result of decreasing trend of education expenditure is reflected in the outcome indicators. Although Article 21A of Indian constitution laid importance on free and compulsory primary education for children of 6 to 14 years of age and initially the objective of compulsory primary education for children between 6 to 11 years of age was accepted in the third five year plan in India, this aim could not be fulfilled. Universalisation of Elementary Education was expected at the end of the Eleventh plan period in Assam, it also could not be achieved so far. As per Census 2011, literacy rate in Assam is still lower than that of the National level (73.18 against the national level 74.04).

The Right of Children to Free and Compulsory Education (RTE) Act 2009 lays down Pupil Teacher Ratio (PTR) for primary schools as 30:1 and for Secondary Schools as 35:1. According to ASER 2013 only 33.6 percent primary schools comply with the RTE norms in 2010 which decreased to 31.3 in 2013. The GER in the primary level was 85 percent in 2003-04 which increased to 103.1 percent in 2012-13. Likewise NER also increased to 73 to 95.4 percent only. The dropout rate in the primary level is still high. In 2003-04, it was 10 percent which marginally drops to 9.7 percent. In case of Upper primary level, it was 15.54 in 2008-09 which falls to 10.4 in 2012-13. Again the insufficient infrastructure in Elementary and Secondary level of education is reflected in the following tables (Table 1.5 & 1.6).

Table 1.5: Number of Schools

YEAR	PRIMARY SCHOOLS	HIGH & HIGHER SECONDARY SCHOOLS	HIGH SCHOOL	HIGHER SECONDARY SCHOOL
1980-81	21723	1994	-	-
2012-13	35064	-	5743	1080

Source: Statistical Abstracts, 1990, Statistical Handbook 2005, 2013.

Table 1.6: Facilities available

year	Schools	Drinking water	Common toilet	Separate toilet for girls
2012-13	Primary (35064)	89.72%	72.21%	93.79%
	Upper Primary (5823)	92.70%	69.26%	96.97%

Source: Statistical Handbook 2013

Table 1.7 reveals that only 43 percent schools have useable girls toilet facility and 31.3 percent schools satisfy the RTE norms for PTR in 2013. Drinking water is available in 65.6 percent schools in the same year.

Table: 1.7 Schools meeting the RTE Norms

Indicators of RTE Norms	Measurable Indicators	% Schools meeting the RTE Norms			
		2010	2011	2012	2013
PTR & CTR	Pupil -Teacher Ratio	33.6	29.0	35.2	31.3
	Classroom-Teacher Ratio	67.7	64.9	64.4	66.1
Building	Office/Store/Office cum store	57.5	54.2	49.3	46.5
	Playground	61.5	56.6	59.3	58.5
	Boundary wall/Fencing	19.1	23.3	27.8	23.0
Drinking Water	No facility for drinking water	23.2	23.8	23.5	21.6
	Facility but no drinking water available	16.0	11.7	11.0	12.7
	Drinking water available	60.9	64.6	65.4	65.6
Toilet	No Toilet facility	19.1	13.1	8.6	7.8
	Facility but toilet is not useable	47.8	49.2	38.6	31.3
	Toilet useable	33.1	37.8	52.8	60.9
Girls' Toilet	No Separate Provision for girls toilet	52.2	34.3	30.1	25.7
	Separate provision but locked	18.5	19.3	14.1	16.7
	Separate Provision, unlocked but not useable	15.6	19.0	15.3	14.6
	Separate Provision, unlocked and useable	13.7	27.4	40.4	43.0

Source: ASER 2013 (Rural)

Thus it is seen that educational attainment indicators are not satisfactory in Assam. Although these indicators depend upon some other factors such as Socio-economic condition of the area, income and educational status of the parents, appointment and training of the teachers, etc. yet government expenditure play a major role in determining such indicators.

IV: Conclusion

From the foregoing analysis we can say that the social sector expenditure for education (Elementary and Secondary) has a positive impact in the attainment of education indicators. Since the amount of these expenditure are not sufficient in the post reform period due to the SAP policies as well as fiscal condition of the state, therefore attainment of improved education indicators are not possible till today. The declining trend of education expenditure after 1991 is quite ineffective in providing UEE as well as secondary education for all. Although the elementary as well as secondary education expenditure increased in the post 2005 period, yet the projected goals could not be achieved during the time frame.

Therefore government should take necessary steps to allocate a higher percentage of GSDP to the social sector expenditure as well as the service delivery mechanism should also be improved.

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