

GOVERNMENT POLICY AND SPENDING ON EDUCATION: A STRUCTURAL BREAK ANALYSIS

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ABSTRACT

This paper examines an important issue pertaining to government's withdrawal policy from the social sector, especially from education in the post-reforms period, using the structural break analysis. For this, the paper uses the ratio of Government expenditure to gross domestic product which incorporates the economic condition as the policy variable. Taking the data from 1950-51 to 2017-18, we divide the period under the study into different phases. Using dummy variable analysis the study concludes that there is existence of significant differences in different phases and the post-reforms period witnessed negative coefficient of dummy variable. This warrants of enhancing the Government's spending on education to make quality education accessible and affordable for all, which in turn, will help in reaping the demographic dividend.

Keywords: Education Expenditure, Structural Change, Educational Policies

JEL Classifications: I22, I25, I28

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1. Introduction

Expenditure on education is an investment on human being by which the recipient experiences skill enhancement, and hence, gets a rise in the earnings from his/her works. The increased earnings due to enhanced skill is visualised as the return from education expenditure. It is also known as investment on human being causing creation of human capital. Human capital is found to be as good as physical capital which promotes economic growth (Schultz, 1961). As found elsewhere, the rate of return on the investment on human capital is also found to be comparable (sometimes even higher than) to that of investment on physical capital in India. Effects of the expenditure on education on the economic growth of different countries are examined by a good number of researchers¹ since 1960s, which Bowman has described as the era of human investment revolution.²

Household spends on the education of the child as it expects a rise in its future earnings from the enhanced labour productivity of the child through education. Expenditure on education like any spending is influenced by income. With meagre income the poor household cannot spend more on children's education. Sometimes it is said that a household can spend through borrowing if spending promotes higher future earnings as repayment in future would not be a problem. However, availability of adequate, affordable and timely finance for the poor is not very easy as it is hypothesised. Pre-conditions like proper document showing credibility of the borrowers very often reduces the chances of bank credit to the poor. Further, the expected future income from enhanced labour productivity is uncertain due to waiting time and the amount of return. A poor household may not afford to take that risk. A welfare state has a responsibility to spend on behalf of the citizens and especially on behalf of the poor on equity ground. Public funded education by promoting the access to education for the poor households can help in reduction of income inequality.

Education not only benefits the recipient through higher income earnings but also benefits the people in the neighbourhood; uneducated people can get different information from their educated neighbour. This is known as the positive externality³ of education. This positive externality is sometimes so huge that it is categorised as merit goods (Musgrave, 1954). Spending on healthcare, education, are important examples of merit goods. Musgrave while discussing the resource allocation role of the Government suggested for the Government provision for the merit goods to ensure their adequate supply, since households' spending is inadequate as they only consider the private benefit ignoring the externality aspect (Musgrave, *ibid*).

Realising the role of education in promoting equity and economic growth, almost all countries allocate fund for education. Countries like Japan in the early 20th century and South Korea, Indonesia, China in the later part of

20th century allocated high proportion of public funding on education and experienced a sharp rise in economic prosperity.

Increased public spending and especially external debt funded spending to raise economic growth created a problem of debt trap in some of the developing countries like Mexico, Brazil in the 1980s. This created problem for both the debtor and the creditor countries and the problem was more for the later. International institutions like IMF, World Bank while trying to manage the problem suggested rationalisation of public spending by the debtor countries to reduce fiscal deficit. India was in a comfortable situation at that time; but undertaking of various development projects, rescuing of the sick industries, the Gulf war causing return of the workers from these countries resulted in the fall in remittances in the end of the eighties. All these reduced its foreign exchange reserve to a meagre amount of one billion USD (sufficient to pay the import bill of two weeks only while it should be to pay the import bill of three months) in 1991. Seeking of international finance from IMF and World Bank forced India to accept the conditions (of introduction of structural adjustment programme to cut the public expenditure and to raise economic growth through reducing Government's control over and allocation on economic activities) for getting financial assistance. This resulted in the much talked about economic reform programmes of India in the early 1990s which began in 1991 and continued over time.

In an effort to reduce the expenditure, the government lessened the expenditures on social sector which mainly include the expenditure on education and health. As a result, government's priority to education reduced further (through resource allocation). Private sector was also allowed to enter into education especially through the opening of private universities, colleges and self-financing courses with the implicit assumption of market as the best for resource allocation i.e. those courses will be opened by the private colleges/universities which can easily provide jobs (placements) and thus will be in high demand. It was stated that Government can concentrate on elementary education and may reduce its spending on higher education, which appears to be more of a private goods type while elementary education is a merit goods. The household can spend on higher education of children through borrowing.

Government's withdrawal from social sector expenditure in India in the post-reforms period attracted the attention of many researchers which has resulted in a number of works (Tilak, 1996; Pandey, 2016; Bhattacharya, 2004; Ghosh, 2005; Joshi, 2006, Gupta and Sarkar 1994; Prabhu, 1994; Panchmukhi, 2000; Dev and Mooij, 2004). This is because of the bad experiences of many developing countries that had introduced macroeconomic reforms during the last 20 years. During the reforms period, these countries had reduced their public spending on basic services and programmes related to social sector development or human resource

development (Gupta and Sarkar, 1994; Mahbub Ul Haq Human Development Centre, 2001). The existing works in India illustrate the decline in Government's expenditure and caution about the negative repercussion on the economy especially to ensure equity in the access to education. But these works have not made any rigorous analysis and have not used the different econometric tools while analysing the data. In this paper an attempt is made to fill up these gaps. Since Government's emphasis on public funding for education has changed from time to time in response to different committees and reports, its budget allocation accordingly has also changed over time. Hence, this work covers the whole period starting from 1950-51 to 2017-18 dividing into different phases relating to the Government's change in the focus.

The paper is structured as follows: After introducing the problem it provides a brief sketch of the Government's policy on education and the outcome of these policies reflected in the public spending on education. The next section makes a brief review of the related works. In Section 3 methodology and data sources are presented. Findings of the study are put in Section 4. Section 5 contains discussions and conclusion.

2. Government's Policy on Education

After independence India adopted the Constitution on 26th November, 1949 which came into force on 26th January, 1950, when education became the responsibility of both the Central and State Governments. The Constitution makers recognised that for the stability and progress of the country a large number of well-educated people are required. The Constitution emphasised both on the principle of 'equality of educational opportunity' and the achievement of social justice through a policy of 'positive discrimination'. Government appointed a number of Commissions⁴ for preparing guidelines for the progress of education in the country. Kothari Commission is the most important one in this context which expressed that education determines the level of prosperity, welfare and security of people. It can work as a powerful instrument of social, economic and political change (Report of the Education Commission, Vol.1, 1964-66). Kothari Commission report (1968) suggested that public expenditure on education should reach the target of 6 per cent of GNP (Gross National Product) by 1986. The National Educational Policy of 1968 was formulated on the basis of the recommendations of the Kothari Commission aiming at extending the prospects of education to all sections of the society. However, the amount of fund allocated for education has not reached 6 per cent of GDP till date. It is hovering around 3 per cent of GDP since 1990-91 (Table 1).

Table 1: Trends in Government Expenditure on Education in India

Year	Edu. Exp. (Rs. crore)	Edu. Exp. (% of Pub. Exp.)	Edu. Exp. (% of GDP)
1951-52	64	7.92	0.64
1961-62	260	11.70	1.52
1971-72	995	9.38	2.21
1981-82	3790	9.09	2.49
1991-92	18758	11.01	3.18
2001-02	64848	10.46	3.09
2011-12	270092	12.01	3.09
2015-16	423171	10.65	3.09
2016-17	474672	10.67	3.13

Source: MHRD, Analysis of Budgeted Expenditure on Education (ABE), 2004-05 to 2012-15

Food problem of the country and the objective of making India self-sufficient in food grain were reflected in the public expenditure pattern through increased allocation on agricultural science and technology. During this period, Government assumed the responsibility to make provision for such aspects of education. The National Education Policy of 1986 also reiterated the same by stating the need for the provision of education for the people of the weaker section. Fellowships for the poor, provision for adult education, recruitment of teachers from the deprived groups and also establishment of new schools and colleges were the suggested measures. Jawahar Navadoya Vidyalaya (JNV) for talented students of the rural areas and Indira Gandhi National Open University (IGNOU) at Delhi for distance learning were the two milestones established by the Government in 1985.

The introduction of economic reforms in 1990s made a marked change in the policy perspective of the Government; reduction of fiscal deficit was an important objective for the country as per the IMF-World Bank conditionality clause as stated earlier. Government expenditure on social sector was reduced for rationalising expenditure. Market was accepted as a means to mobilise resources for education, especially for tertiary education. Higher education and especially the technical education are highlighted as private goods, providing high return to the person concerned. Hence, Government's withdrawal and private sector's entry as a provider of education became visible. With Government's encouragement more number of private schools, colleges and universities were established, and market oriented self-financing courses were introduced.

During this period the country also received some fund from international institutions like World Bank-DFID-UNICEF for the promotion of primary education in the 1990s. In 2001 Sarva Siksha Abhiyan (SSA), Education for

All programme was launched to universalise elementary education. In the first decade of the 21st Century India through different Acts made right to education a fundamental right by which every child has a right to full time elementary education of satisfactory quality in a formal school.

In the last five years Government has also taken some good initiatives like ‘Samagra Sikha’ a central Government support across all levels of school education from 2018 to 2020 to enable students to perform well in the Programme for International Student Assessment (PISA) and bring good rank for India. To provide quality education in school through the use of technology and telecom services, it proposed to support ‘Operation Digital Board’ and introduced new online courses under ‘SWAYAM’. The Government has declared the establishment of more new IITs, IIMs, NITs, AIIMs, NIDs etc., some of which are yet to be realised due to fund crisis. In 2016 the Government has set up Higher Education Financing Agency (HEFA), a NBFC (Non Banking Financial Company) with Canara Bank as its partner for mobilising finance through market borrowing and making them available to Government institutions as interest free loans. HEFA is expected to promote major investments for creation of high quality infrastructure in the premier educational institutions. It would leverage the amount up to Rs. 20,000 crore for funding projects for infrastructure and the development of world class labs in IITs/IIMs/NITs and other such institutions.

The big promises and proposals of the Government are however not accompanied by similar significant fund release by the Government. The growth rate of education expenditure is found to be lower in the post-reforms period as compared to the decade of 1980-81 to 1990-91 (Table 2).

Table 2: Average Expenditure on Education and its Annual Average Growth Rates

Decade	Average Exp. on Education (Rs. crore)	Annual Average Growth of Exp. on Education
1951-1960	133.51	15.06
1961-1970	503.76	14.43
1971-1980	1979.5	14.35
1981-1990	9142.33	17.44
1991-2000	37435.82	13.39
2001-2010	119440.73	15.45
2011-2016	363787.13	12.11

Source: Computed by the authors

The growth rate is the lowest in the period after 2010-11. For example, in the interim budget of 2019-20 the Central Government allocated only 3.3 per cent of the total budget expenditure for the education sector which was only 12.22 per cent hike from the last budgeted allocation. Even in the last year the amount spent on education was found to be less than the amount

budgeted. The Government is even inviting big corporate sectors like Reliance Group, Aditya Birla Group, Vedanta Group to open universities of world class standard. These attempts of Government are of course invite sharp criticisms on equity ground.

3. Review of Literature

A number of studies are found using sophisticated tools like the Error Correction Model, Granger Causality Test showing the association of Government expenditure on education and economic growth (Pradhan, 2009; Chandra, 2010; Tamang, 2011). But to examine the link of policy/priority of the Government to its spending on education, the use of such types of models is less. For example, Panchamukhi (2000) analysed the impact of economic reforms in India on social sector spending of Central and State Governments. It used the average annual growth rate of elementary, secondary and university education in the pre- and post-reforms periods. The study was an exploratory one expressing concern over the Government's withdrawal from the social sector expenditure including education. Dev and Mooij (2002) also used Central and State Governments' expenditure on education (also to its different sectors like elementary, secondary and higher education) as a proportion of total expenditure and GNP to analyse the fall of Government expenditure in reforms period (i.e. 1990 to 2000-01). Mooij and Dev (2004) have used the similar ratio to explain the fall in Government expenditure on education in the reforms period. Tilak (1995) has used Central Government's expenditure on education as a per cent of revenue expenditure in India to explain the falling trend of education expenditure in the second half of 1990s to show Government's withdrawal. Similar effort is also found in Tilak (2004) and Chowdhury and Bose (2004), which used total educational expenditure (Central and State Governments) as a percentage of GDP and Government expenditure to show the disturbing trends in public expenditures during the 1990s in India. This ratio was used to indicate the priority given to education by the Government. Chakrabarti and Joglekar (2006) using the panel data of 15 major states of India from 1980-81 to 1999-2000 analysed the impact of economic reforms on spending on education by the Government. It also used per capita GSDP, demographic variables like proportion of school going children as other independent variables. It used structural break analysis to show the significant differences in the spending pattern of Government on education and its different sectors. The study finds adverse effect of economic reforms on Government expenditure on education in the post-reforms period. However, this study has used the data up to 2000. Almost two decades have passed in the meanwhile indicating the possibility of changes and hence there is a felt need for further study on this aspect. Our study by using the data up to 2017-18 attempts to fill up the gap in this respect.

4. Methodology and Data Source

It is found from other studies that education expenditure as a percentage of GDP is a very good indicator of priority of the Government on education. This is due to the fact that the amount of allocation of fund by Government on different heads also depends on the size of the budget which is closely related to the income or gross domestic product (GDP) of the country which also reflects its economic condition. To capture these two aspects simultaneously we also have used expenditure on education to GDP ratio (EOETGDP ratio) as an indicator of Government's priority to education. It is hypothesised that change in priorities changes the ratio. The trend of this ratio and the divergence of the actual values from the trend values are used to analyse the change in policy. We also have used tools like structural break and dummy variable etc., which help to identify the points of departure from the on-going trend. These breaks are the landmark points where remarkable changes are noticed; the changes may be due to the change in the Government policy.

Multiple structural break analysis is used to know the presence of structural break during the period. There are two criteria for obtaining the breaks: LWZ and Schwarz criteria. Here, LWZ criterion is used. After identifying breaks, dummy variable analysis is used to see whether the period-wise analysis is appropriate or not.

$$EOETGDP_t = \alpha + \beta D_t + e_t \dots\dots\dots(1)$$

Where, EOETGDP = Expenditure on education to GDP; D = time period; t = 0 or 1 depending upon the periods for which comparison is made to study the impact of some changes.

Phase-wise analysis is used by taking the suitable number of breaks. An analysis of pre- and post-reforms periods is prepared to compare the situations of these two phases. The logic of these two divisions is based on the hypothesis of promotion of education through Government provision or market forces. In the pre-reforms period it was thought to be executed by Government allocation and in the post-reforms period by market allocation.

The study uses public expenditure on education data published by the Ministry of Human Resource Development (MHRD) for various years. The GDP data is obtained from Central Statistics Office (CSO). These two sets of data are in their current prices. These two data sets are used to compute the Expenditure of Education as a percentage to GDP (EOETGDP), which can express the country's priority while allocating the Government fund. The period of analysis is 1950-51 to 2017-18, i.e. starting from the first plan period of India to the recent time for which data are available (2016-17) by using the constant value of base (2011-12). GDP deflator is used to find out the constant values.

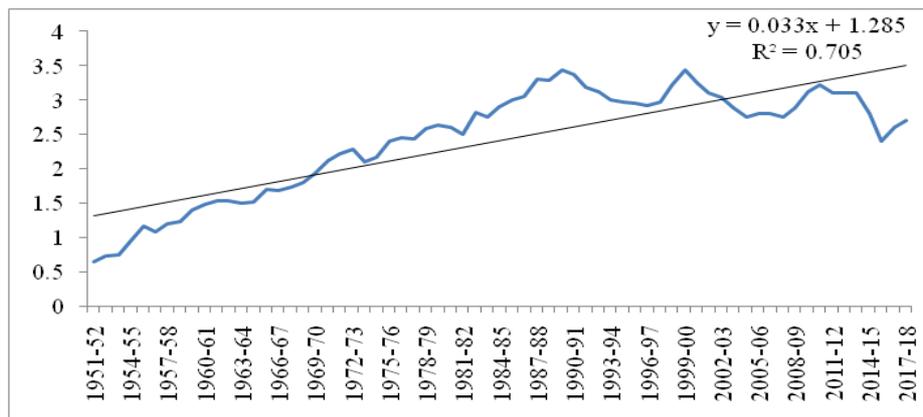
5. Results' Discussion

(i) Trend of EOETGDP

Figure 1 shows the trend of EOETGDP over time; the increasing trend of EOETGDP over time indicates that at least Government's priority to education has not declined over time. However, it also shows low priority of Government to education as the value of this ratio has not reached 6 per cent of GDP while countries like Grenada, Brazil have crossed more than 10 per cent.

The divergence of the actual values of EOETGDP from the trend values is much less though the trend line cuts/touches the EOETGDP 5-6 times. The distance of the actual data and the trend data is highest in 1993-94 followed by 2015-16. The curve also shows a rising trend up to 1999-2000 after which sharp fluctuation and a declining trend is noticed. This shows some structural change but this structural change is not identified properly from this graph. Hence, the structural break analysis is done.

Figure 1: Government Education Expenditure as a % of GDP



Source: Computed by the authors

(ii) Structural break analysis

In Table 3, information obtained from structural break analysis is presented. Parameters of using LWZ Criterion shows 3 structural breaks which are appropriate for this analysis as its value, i.e. -2.34, is the lowest. Accordingly, the structural break years are: 1970-71, 1992-93, and 2002-03. The year 1970-71 may be taken as the year of beginning of post-Kothari Commission Period, 1993 as the year of beginning of post-liberalisation period and 2003 as the year when the need for increasing expenditure for human capital formation was realised and accordingly there was a hike in the Government's spending on education. The years 1961 and 1981 are not considered as they do not represent any significant change.

Table 3: Multiple Structural breaks Analysis

Breaks	Coefficients	Sum of Sq. Residuals	Log-L	Schwarz* Criterion	LWZ* Criterion
0	1	39.14721	-77.06721	-0.474607	-0.431242
1	3	8.524376	-25.99983	-1.873493	-1.742704
2	5	4.777556	-6.603303	-2.326981	-2.107789
3	7	3.393284	4.858083	-2.543598	-2.234964
4	9	2.929642	9.779834	-2.565003	-2.165814
5	11	2.926486	9.815940	-2.440568	-1.949634

Source: Computed by the authors

Estimated break dates:

- 1: 1970
- 2: 1969, 1982
- 3: 1961, 1971, 1982
- 4: 1961, 1971, 1993, 2003

The descriptive statistics indicates the rise of the values from phase-I to II and to III, but the fall is noticed from phase III to IV (Table 4).

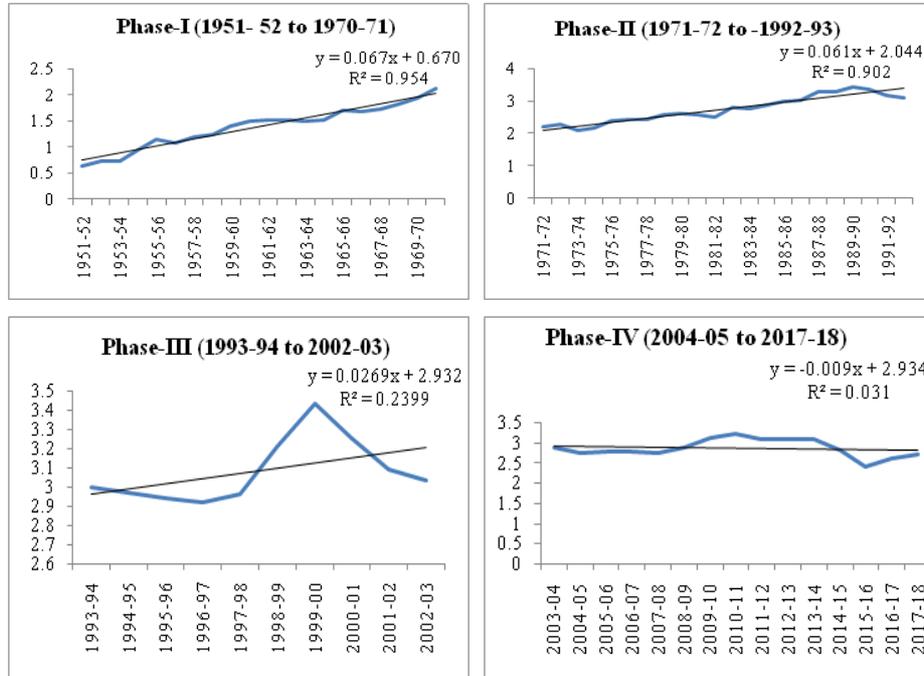
Table 4: Descriptive Statistics of the EOETGDP in Four Phases of Structural Break

Statistics	Phase-I (1951-52 to 1970-71)	Phase-II (1971-72 to 1992-93)	Phase-III (1993-94 to 2002-03)	Phase-IV (2004-05 to 2017-18)
Mean	1.38	2.75	3.06	2.97
Median	1.49	2.69	3.00	0.05
Standard Deviation	0.41	0.89	0.05	0.18
Sample Variance	0.17	0.17	0.03	0.03
Range	1.47	1.33	0.55	0.49
Minimum	0.64	2.10	2.88	2.74
Maximum	2.11	3.43	3.43	3.22
N	20	22	11	13

Source: Computed by the authors

(iii) EOETGDP in Four Phases: Figure 2 presents EEOGDP in the four phases considering the three structural breaks. It is noticed that growth rate declines when we move from first phase to the second and then to the third phase, it becomes negative in the fourth phase. It is noticed that in the third phase the fluctuation is the sharpest. The value of R^2 also declines from one phase to the next phase though these are found to be statistically significant.

Figure 2: EOETGDP in Four Phases and Their Trends of Growth Rate



Source: Computed by the authors

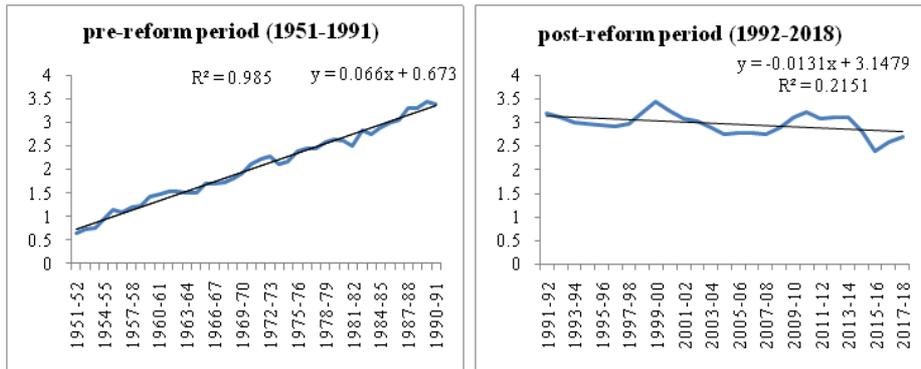
(iv) EOETGDP in the pre- and post-reforms Periods: The structural breaks analysis not only shows the fall in the coefficient from one period to another, but also shows that in the first two phases the coefficients are higher than the last two phases. In the first two phases, the year on year fluctuation in the EOETGDP is lower than the last two phases, which implies that besides time as a variable, other variables are also significant to affect the EOETGDP in the last two phases. We consider economic reforms as a major policy change relating to Government’s support (and withdrawal). This prompts us to have a two-phase analysis: pre- and post-reforms periods, which are done below:

Figure 3 presents the pre- and post-reforms periods’ behaviour of the EOETGDP and Table 5 provides the descriptive statistics of the same variable for both the periods. In the pre-reforms period, the actual values are in the neighbourhood of trend values indicating low fluctuation. The high value of R^2 states that time as an independent variable can explain 98.5 per cent of the fluctuation. In the post-reforms period we also find a significant relationship of EOETGDP with time, though the R^2 value is much lower as compared to the pre-reforms period. The negative value of the coefficient indicates the fall in EOETGDP over time in this period.

(v) Dummy analysis: Using dummy in different periods regression analyses are also done. The results are presented in Table 6. In all the cases results

are found to be significant as obtained from the ‘P’ values; all are significant at 0.01 level. Significance of these dummies indicates that there are significant changes from one period to another. Hence, both the Ordinary Least Square (OLS) Regression and the Dummy variable Regression indicate period-wise significant changes in EOETGDP from one period to another.

Figure 3: EOETGDP (1951-1991) and (1992-2018)



Source: Computed by the authors

Table 5: Descriptive Statistics of EOETGDP in Pre- and Post-Reforms Periods

Statistics	1950-51 to 1990-91	1991-92 to 2017-18
Mean	2.042	3.023
Median	2.108	3.060
Standard Deviation	0.786	0.173
Sample Variance	0.619	0.029
Range	2.795	0.694
Minimum	0.639	2.735
Maximum	3.434	3.430
N	40	26

Source: Computed by the authors

Table 6: Dummy Analysis

EOETGDP	coefficient	R Square	t Stat	P-value	F	Standard Error
1951-52 to 1970-71=0; 1971-72 to 1992-93=1	1.369	0.742109	14.91828	6.15E-18	115.104	0.09237
1971-72 to 1992-93=0; 1993-94 to 2002-03=1	0.332	0.162953	35.69485	3.9E-26	5.84029	0.077641

(contd.)

(Table 6 contd.)

1993-94 to 2002-03=0; 2003-04 to 2017-18=1	-0.217	0.228496	47.75104	1.63E-24	6.8119	0.064501
1951-52 to 1990-91=0; 1991-92 to 2017-18=1	0.921	0.34952	20.64119	3.03E-30	34.92632	0.098965

Source: Computed by the authors

6. Discussion and Conclusion

The behaviour of the EOETGDP obtained from the study can be linked to Government Policies in different time periods as follows:

After independence India accepted its responsibility to promote education by providing facilities. Since literacy rate and level of education of the people were not very high, amount and proportion spent on education was less during this period. But Government's responsibility was reflected through the relatively high value of the coefficient in the OLS equation in the first and second phases.

In the third phase Government's withdrawal reduced the spending. However, in the year 1994, the World Bank-DFID-UNICEF funded District Primary Education Programme (to revitalise the Primary education) – a mega project over a period of 5-7 years, where at least 15 per cent of the fund was to be provided by the State Governments, (perhaps) kept the EOETGDP growth rate positive though the rate was very low. This programme was to ensure universal enrolment of the children (6-14 years). Further, the funding for Sarva Siksha Abhiyan (SSA) programme might have helped the growth rate of EOETGDP to remain positive in the third phase.

During this period the growth rate of EOETGDP is found to be negative. In fact, the EOETGDP remained below 3 per cent from 2003-04 to 2008-09 and again from 2014-15 to 2017-18. The fall in the ratio can be attributed to the relatively slower growth rate of public expenditure on education as compared to the growth rate of GDP during these periods. During 2003-04 to 2008-09 growth rate of GDP was the highest.

It is expected that low ratio of public expenditure on education to GDP would arrest the future prosperity of the country. It is noticed from the World Bank data that EOETGDPs of the countries are well associated with their economic development. High income countries have higher ratio as compared to the poor countries; as a group the former has a ratio higher than 4.3, while the latter has the ratio lying within 2.972 to 4.098 per cent. Similarly, in the country like United Kingdom, which has passed different phases of its progress, its

EOETGDP has also changed accordingly as compared to the average situation of the high income countries. Its ratio was higher than the average during 1975 to 1984 and has remained lower in almost all years during 1985 to 2005 after which it has remained sometimes above and sometimes below the average. India's EOETGDP has remained above the average of the low and medium income countries of the world during the period 1997 to 2000 but has remained below the average during 2003 to 2013. Non-availability of the average EOETGDP data of the medium and low income countries after 2013 restricts us to remain silent for the recent years, but we expect that India would have remained below the average as there is a fall in the EOETGDP of India even after 2013 and even up to 2018 (UNESCO, Institute for Statistics, 2018).

This fall in public EOETGDP is a matter of concern. In the post-reforms period India has experienced a rise in the number of educational institutions and the enrolment, but to a large extent, it occurred in the private sector. Mushrooming of the private educational institutions and enrolment in these institutions may not lead the country on the road to progress, rather it will create inequality and often huge loss for many households of low income group who with an expectation of better employment opportunities might have invested in the enrolment of their wards in the private mediocre institutions (as per their budget). While most such institutions create large number of such pass-outs without gainful employment; frustration, tension and related financial problems cannot be avoided. So, it is the duty of the Government to provide quality education and to see that education should be accessible and affordable. Its allocation to education may be considered as an investment and by doing this we can expect that India would become ready to reap the demographic dividend.

Notes

1. The importance of education and the education expenditure in economic growth was first introduced by the endogenous growth theories developed by Romer (1991) and Lucas (1988). Lucas (1988) and Mankiw, Romar and Weil (1992) argue that the promotion of human capital would lead to an increase in the productivity through innovation, technological progress and thereby raising expenditure.
2. This can be traced back to T.W. Schultz's Presidential address "Investment in Human Capital" in the Annual Meeting of the American Economic Association in December, 1960, which was later published in 1961 as mentioned in Blaug (1968). Schultz (1961a), Schultz (1961b), Denison (1962), Johnstone (1964) have explained that expenditures on education, health etc. are in fact investment expenditure on labour making them as human capital.
3. When a person's consumption/production expenditure benefits other without any compensation it is called positive externality.
4. University Education Commission, 1948; Mudaliar Commission, 1952; Kothari Commission, 1968 etc.

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