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India's NEP 2020 Goal of 6% GDP on Education: Alternate Scenarios for Post Covid-19 Pandemic

Mona Khare[1] and Sandhya Dubey [2]

Abstract:

In the midst of the pandemic triggered chaos and uncertainties, the much-awaited National Education Policy (NEP) of India was officially announced at the end of July 2020. The policy calls for "substantial investment in education and reiterates Government's commitment to increase public expenditure on education to at least 6% of GDP. Under the current situation of a long term dampening effect of the economic recession arising out of the pandemic, the possibility of meeting the 6% target looks bleak. The study aims at exploring the prospects of realising this goal in the days to come by empirically analysing the relationship between economic growth and public expenditure on education in the country. It further analyses the alternative pathways of gradualism and shock therapy for attaining 6 percent GDP's share to education based on a scenario building exercise. The findings reveal that given the pandemic steered recession, India will not be able to realise the 6 percent goal in the coming one and a half decade. The paper proposes that the government must seriously consider 'mixed S-G' approach -- a combined strategy of 'gradualism in the long run following shock in immediate future'.

1. Introduction:

Given the economic shock that the world is going through as a result of the COVID 19 pandemic, countries across the globe are struggling to get the economy back on track. One of the worst hit sectors during this period is the education sector. The financial gravity of an already funds deficient sector has deepened and is likely to continue for long. Calling it 'a deep financial crisis' Altbach and Wit (2020) have highlighted that both public and private institutions will face financial problems not just in the immediate period but even later, due to uncertainties of admissions and teaching processes. On one hand, universities dependent on students' fee and endowments are likely to suffer, while on the other hand, public expenditures on education are also likely to shrink in future as Governments divert massive funds towards stabilising their economies (Altbach & Wit, 2020). In India's context, this argument is ascertained by the 6 percent decline in the centre's allocation to education sector in the Union Budget of 2021-22, despite the commitment made by the National Education Policy (NEP) 2020 to reach the long elusive goal of spending 6% GDP on education.

2. India's National Education Policy 2020 -reaffirmation to 6% goal

The NEP 2020, that came after a gap of 35 years, aims at a more holistic and multi- faceted development of students through integration of knowledge and skill development in the schooling

[1]*Professor and Head, Dept. of Educational Finance, Centre for Policy Research in Higher Education, National Institute of Educational Planning and Administration (NIEPA), 17-B, Sri Aurobindo Marg, New Delhi – 110016.*
e-Mail: monakhare@niepa.ac.in
[2]*Research Scholar, National Institute of Educational Planning and Administration (NIEPA), 17-B, Sri Aurobindo Marg, New Delhi – 110016. e-Mail: sandhya09dubey@gmail.com*
All the opinions in the article are of the authors and usual disclaimer applies.

process. The policy envisages and proposes large-scale and broad based interventions towards the achievement of the 4 Es i.e. Enrolment, Equity, Excellence and Employability. The policy aims at increasing enrolments to increasing coverage and participation, with improving quality to digitisation and technological integration, from vocationalisation to teacher development, from improved physical infrastructure/campus facilities to all- encompassing campus services for safer, inclusive, economically rewarding and socially relevant education. Needless to say, such overpowering propositions would demand not just will and commitment but matching funds. In a country like India that is beset with large-scale socio-economic, cultural and regional disparities, the role of Government funding is crucial. Since, education is considered as a public good, the NEP 2020 re-emphasises increased public funding for education in the country. The policy, thus calls for "substantial investment in education". NEP (2020) not only reiterates Government commitment to increasing public expenditure on education to at least 6% of GDP but also increasing it to 20% of Government expenditure. However, given the current economic turmoil due to COVID 19 pandemic, such a proposition seems difficult to achieve.

This paper is an attempt to examine India's past trends in education funding and economic growth and explore the feasibility and possibility of attaining 6% of GDP target under the current post pandemic situation. The paper begins by looking at the Indian experience in terms of its public expenditure on education vis-a-vis its GDP, measuring the extent of relationship between GDP growth and education expenditure growth and finally making future projections to assess the feasibility of achieving the target of 6% GDP to education under different scenarios.

3. Relationship between Economic Growth and Public Expenditure on Education

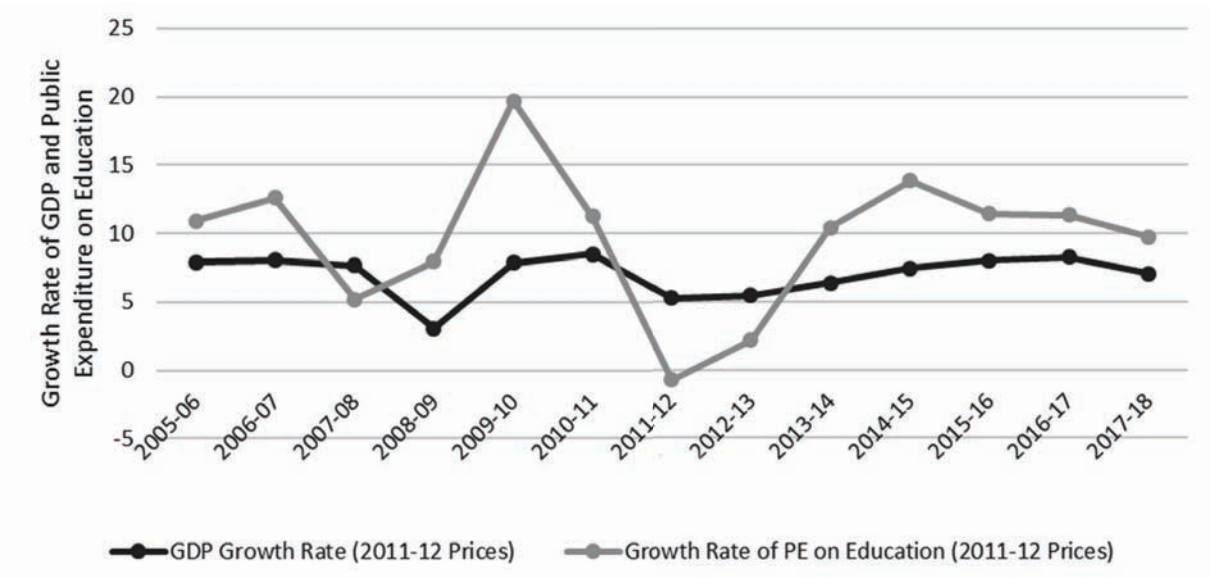
The evidences for a positive link between public expenditures on education and the economic growth are widely available both in theoretical as well as empirical literature The two way relationship between economic growth (EG) and human development (HD) can also become reinforcing as evidenced by literature such that nations may enter into an upward spiral of development i.e. the virtuous cycle of high growth and large gains in HD or get trapped into a poverty trap i.e. the vicious cycle of low growth and low rates of HD (Ranis, 2004; Ranis et al., 2000; Mayer-Foulkes, 2007). The third case may be that of lop-sided economic growth i.e. relatively good growth and relatively poor HD or vice versa. Studies have shown that most EG lopsided nations are not able to sustain their growth momentum and later move to the vicious cycle of low EG/low HD (Ranis et.al. 2000). Such experiences prove that HD is a necessary pre - requisite of long-term sustainable growth. However, equally important is the distributive angle of growth, increased investment, higher productivity and improved employment so as to leverage successes in HD into sustainable economic growth -the sustained upward spiral of virtuous economic growth (Khare 2020) to enjoy a robust relationship between EG and increased public expenditures on education.

In case of India, the correlation between the growth rate of GDP and public education expenditure (1952-53 to 2017-18) is 0.24. This weak correlation along with Figure 1 reflects the asymmetry in the trends of these two variables. In the past 15 years, it can be seen that education expenditure has grown faster than the GDP most of the time. But there have been periods when the growth in education expenditure has gone below

[3]*Real GDP at constant price (base year 2004-05) is used for the time series 1951-52 to 2017-18. In the figures and projections, real GDP at 2011-12 prices from 2004-05 to 2020-21 because back series of GDP at 2011-12 prices is not available for 1951 onwards.*

that of GDP growth. But, recent times reveal that although the growth in education expenditure has been faster than that of GDP growth, it is slowly falling year after year. After touching a peak of almost 20 % growth rate in the year 2009-10, it has reached a plateau of around 10% rate of growth by 2017-18 (Figure 1).

Figure 1: Growth Rate of Education Expenditure and GDP (2011-12 Price)



Source: Author's calculations based on Analysis of Budgeted Expenditure, MoE, GOI, Various years.

It may be heartening to note that India has come a long way from spending a mere 0.7 percent of GDP on education in 1951-52, the first year of its planned development to 4.3 percent in 2017-18. But, even after more than seven decades, education spending has not been able to reach the 6% of GDP goal. As far as the proportion of total public expenditure allocated to the education sector is concerned, there has been an increase from 7.9 % in 1951 to 14.3% in 2017. However, these numbers too are below the targeted 20 percent mark of total public expenditure to be allocated to education. Thus, economic growth may be a necessary condition but is certainly not enough for sustained increase in public expenditure (PE) on education.

In fact, the same gets substantiated by structural breaks observed in the long-term trend rate of growth in PE on education as a percentage of GDP starting from the year 1951-52 (Figure No. 2.

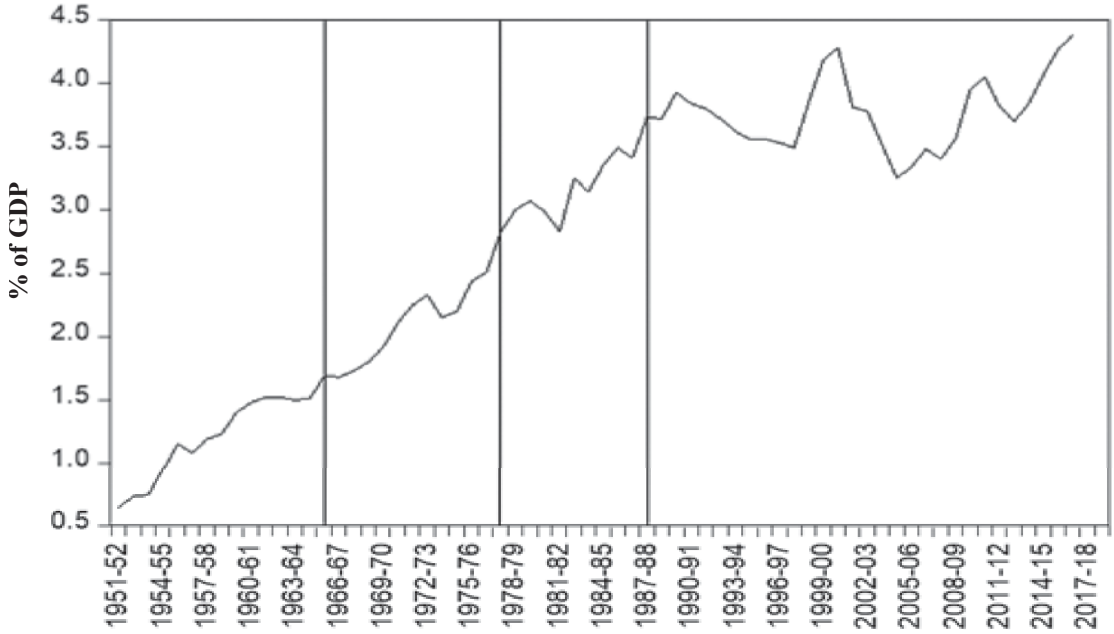
Applying the Bai & Perron (1998; 2003) the following modified version of the IMF model specification (Antoshin, Berg, & Souto, 2008) is used for the time-period 1950-51 to 2016-17 to identify structural breaks in education spending.

BP adopt the following model:

$$Y_t = x`_t\beta + z`_t\delta_j + u_t$$

Where Y_t is the variable of interest, here public expenditure on education as the percentage of GDP. For j =1……m+1, where m is the number of breaks, $x`_t$ and z_t are vectors of covariates, β and δ_j are the corresponding vectors of coefficients, and u_t is the disturbance term.

Figure 2: Structural Breaks in Public Expenditure on Education (Bai-Perron Method)



Source: Author's calculations based on the time-series data of public expenditure on education as the percentage of GDP form 1951-52 to 2017-18 (HRD).

Three structural break years are identified. These are 1966-67, 1978-79 and 1987-1988 (Figure 2). It can be seen that all the three break years coincide closely with three major events in the education sector of India. The first break in the year 1966-67 came after the Education Commission's announcement of the need for 6 percent GDP to be spent on education in 1964-66. The second break year 1978-79 coincided with the shifting of education sector from State List of the Seventh Schedule to the Concurrent List. The last structural break in the year 1987-88 followed the announcement of NPE of 1986. Such a pattern reveals that the breaks in GDP's share to education occur close to some big structural change or announcement for the education sector and not with the famous break years of India's GDP growth rate i.e. 1980, 1991 and 2005-06 (Wallack, 2003; Agarwal & Ghosh, 2015; Choudhury, 2014). It is also observed that although the proportion of GDP spent on education is not in consonance with the break years in GDP, it is observed that when GDP increase is cyclical and not structural, it impacts educational finance. This finding corroborates with Kaur, Mishra, & Suresh, (2013) study depicting the cyclicality of social sector spending in Indian states. Their study revealed that the overall social sector spending in Indian States is cyclical in nature with education spending being pro-cyclical, as it is more pronounced during upturns and less during downturns.

Thus, one would have felt that the NEP 2020 would trigger a positive trend break in the allocation to education. But then, the pandemic's potential to partially or fully eclipse the enthusiasm created by the NEP 2020 is a big blow to this assumption. Also the optimism does not find support in the past experience when India enjoyed a golden period of robust economic growth post economic liberalisation in 1990. Although India could break

away from the shackles of a persistently low Hindu rate of growth of 3.5-5% and touched double-digit growth figures, it could not meet the 6% of GDP target for education. It is ironic that allocation of 6 percent GDP to education has been one of the strongest demands of the education sector ever since the Kothari commission recommended it in 1968, but has remained elusive so far. Few (Tilak , 2006) have eloquently tried to answer why and how the 6 percent GDP aim, focussing more on demonstrating the projections and scenarios under which the 6 percent GDP growth can be achieved. Tilak (2006) stated that more than doubling the rate of growth of education expenditure alone can lead to achieving the 6% mark under any of the alternative scenarios discussed by him -either by way of a 'big push' or 'gradually' over a short period.

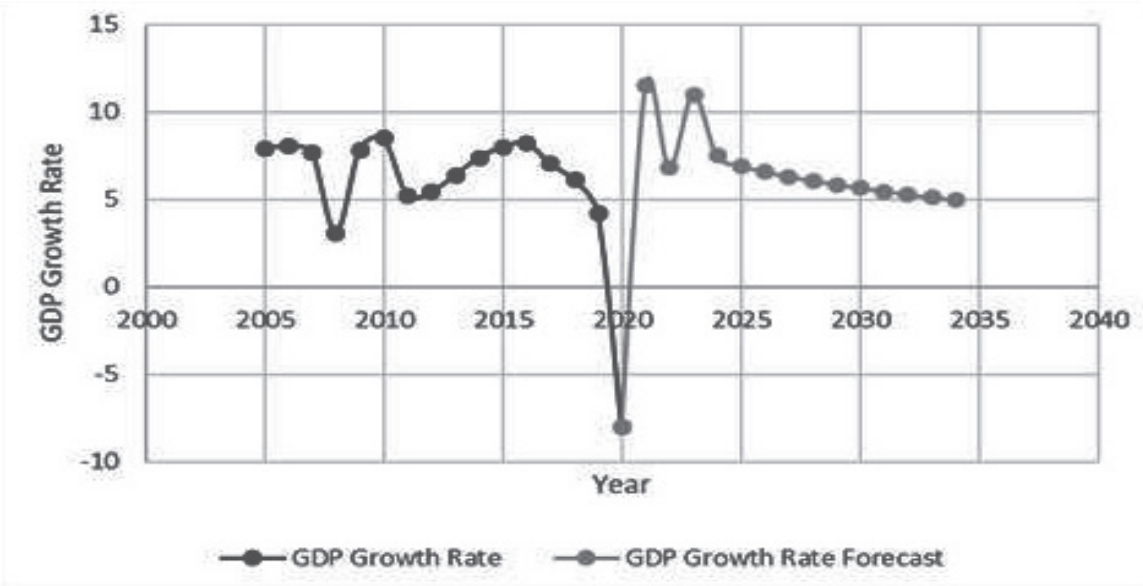
Pandemic after-effects on growth and meeting 6% target :

There is no doubt that the economic recession due to COVID-19 pandemic is going to reduce the volume of public expenditure on education in the coming years. As per the provisional estimates of NSO, the projected GDP growth has contracted (i.e. around -7.3%) in the fiscal year 2020-21, which may rebound to 12.5% in fiscal year 2021-22, and 6.9 % in 2022-23 (as per IMF estimates for India in World Economic Outlook, 2021). Economic Survey (2020-21) has further stated that it would take two and a half years for India's GDP to reach pre-Covid era. If we assume that these three-year annual average growth rates continue for subsequent period until 2035, even then the education expenditure is likely to get adversely affected. In addition, the Government's tax receipts are feared to decline because of the predicted economic slowdown having its own toll on the already low tax-GDP ratio in the country. This too is likely to limit the state's potential to invest in education.

After generating the series for the real GDP forecasts for the time-period of 2023-24 to 2034-35 using the upper bound projections of the Indian GDP (Figure 3), we proceed to making projections for education expenditure. The 'V' shaped trajectory of the growth rate of Indian GDP can be seen after the contraction of 7.7 percent in the year 2020-21 to 11.5 percent in 2021-22 (Figure 3). The same is supported by positive sentiments for India's GDP growth unanimously by NSO, RBI and the international agencies like IMF, FITCH, MOODY's etc. in their respective forecasts. However, our projections indicate that beyond the initial rebound India's GDP growth is likely to smoothen around 5 percent in the decade of 2024-25 to 2034-35.

Projecting GDP till the year 2034-35 in consonance with the period within the NEP 2020 plan, we then make projections for education expenditure under three scenarios. The aim is to identify the particular year under the three scenarios when 6% GDP on education target can be met at 'the earliest' as envisaged in the NEP 2020. In order to understand the probable behaviour in future, the growth rate of education sector public expenditure was regressed on GDP growth rate (1951-52 to 2016-17). A significant beta coefficient of the magnitude of 0.54 shows that economic growth and the growth rate of education spending in India are positively related in the long run. Using this regression model, the value of the education expenditure growth rate comes out to be 1.64 percent corresponding to the GDP contraction of 7.7 percent for the year 2020-21 (as per first advance estimates of NSO). This is a steep fall from the 8.07 percent in the year 2019-2020. We make use of these rates to make projections.

Figure 3: Forecast for India's GDP Growth Rate up to 2035



Source: Author's Calculation Based on GDP Data of Various Years (NSO, MOSPI)

For the decade 2005-06 to 2014-15, Tilak (2006) had projected that India would be able to allocate 3.65% of GDP to education by 2014-15 if the GDP increases at 5.81% and education expenditure increases at 6.22% In reality, the average growth for the economy and education spending in the decade 2004-05 to 2014-15 turned out to be 6.75 and 9.32 % respectively. The allocation to the education sector touched 4.07 % of the GDP in 2014-15.

If similar projections are to be made now, we must take into account the element of uncertainty due to the Covid pandemic. The GDP growth rate cannot be averaged out as in many studies because Covid has led to wide fluctuations in the growth projections. Using our GDP projections from exponential smoothing of time series data[4], our projections for the public expenditure on education are based on three different assumptions to see by which year can India achieve the 6% goal under each of these assumptions (Table 1).

A: Public Education Expenditure as percentage of GDP in absence of Pandemic based on the previous year trends

B: Public Education Expenditure as percentage of GDP based on GDP forecast Post Pandemic and Education Expenditure growth rate of 8.3% (average of realised rates in 2011-12 to 2016-17).

[4]*Exponential smoothing forecasting is mainly used for time-series forecasting based on the historical data having seasonal and other cycles. In Excel, it is based on the AAA version (additive error, additive trend and additive seasonality) of the Exponential Triple Smoothing (ETS) algorithm, which smoothes out minor deviations in past data trends by detecting seasonality patterns and confidence intervals. Owing to the non-linear nature of economic growth with cyclicality embedded in it, exponential smoothing using excel has been applied for making the GDP forecasts from the year 2023-24 to 2034-35. This forecasting method is best suited for non-linear data models with seasonal or other recurring patterns (Cheusheva, 2021) because linear forecasting is for deriving future values using a linear regression model. The figures of real GDP for 2004-05 to 2019-20 (at 2011-12 price) are taken from NSO data. For the year 2020-21 and 2021-22, the contraction of 7.7 percent and 11.5 percent GDP growth respectively, as projected by the NSO in its first advance estimates are used. For the year 2022-23, the IMF's forecasts of 6.8 percent GDP growth for the Indian economy has been used as the NSO's projections for the year 2022-23 are not available at the time of the study.*

C: Public Education Expenditure based on the GDP forecast Post Pandemic and Education expenditure growing at 1.6 % (as per regression model in fig 4) for 2020-21, -6 % for 2021-22 (signalled by the Centre's education budget cut). Rebounding to 1.6 % in 2021-22, thereafter education-spending rate growing at 5.0 percent every year until it reaches the 8.3 % in 2026-27 and continuing at 8.3 % until 2034-35.

Projections A, B and C show three different cases. Projection A is based on the assumption that if the pandemic had not occurred and previous year trends of GDP's proportion for education would have continued. As is evident the goal of 6 percent GDP on education remains untouched by 2034-35. However, the pandemic has occurred and is continuing its catastrophic impact on the economy.

Table 1: Projections of the Share of Public Education in GDP (up to 2034-35)

Year	Projection A (No Pandemic Case)	Projection B (Pandemic Impacting GDP but not the education spending)	Projection C (Pandemic Impacting GDP as well as Education Spending)
Actual			
2017-18	4.3	4.3	4.3
Projections			
2018-19	4.42	4.39	4.42
2019-20	4.51	4.56	4.59
2020-21	4.60	5.35	5.05
2021-22	4.68	5.20	4.26
2022-23	4.76	5.27	4.05
2023-24	4.85	5.14	3.74
2024-25	4.93	5.18	3.61
2025-26	5.02	5.25	3.56
2026-27	5.10	5.33	3.62
2027-28	5.18	5.43	3.69
2028-29	5.27	5.55	3.76
2029-30	5.35	5.67	3.85
2030-31	5.44	5.82	3.95
2031-32	5.52	5.97	4.05
2032-33	5.61	6.14	4.17
2033-34	5.69	6.33	4.29
2034-35	5.77	6.53	4.43

Source: Authors

So we move to our second case of Projection B based on the assumption that the pandemic affects the Indian GDP but causes no fluctuations in the growth rate of education spending, which continues to grow at 8.3% as averaged for previous years. Projection B shows that India will cross the 6 percent GDP target by 2032-33 but this too is a very unrealistic assumption. Given the economic distress following the pandemic, assuming no drop in the education expenditure growth rate is rather unrealistic. Also, the most likely explanation for reaching the 6% target two years ahead under the projections in case B is because the pandemic has drastically eroded the base GDP for the year 2020-21. If a proportionate decline is not accounted for in the allocation to the education sector, the GDP's share to the education sector will increase even if the allocation remains the same or falls

in absolute terms. As such, even a 6% share of a smaller GDP may come out to be lower or close to the existing absolute figures of public education expenditure. This raises serious questions on the sanctity of the 6 % GDP goal. Even if the 6 % goal remains relevant after the pandemic, it cannot be analysed anymore independent of Covid-triggered adjustments. Also we have evidence from the past recessions, when the contraction in GDP resulted in wide fluctuations in the growth rates of the public spending on education. Thus, case B is also an unlikely proposition.

Finally, the Projection C is based on a more realistic assumption of the pandemic causing wide fluctuations in both GDP as well as education spending. Under this situation, education spending reaches only 4.43 percent of GDP by the year 2034-35 - a figure as close to the current 4.3 percent in 2017-18. The important question is, if this pandemic so affects the education spending in India, can an already fund starved education sector afford to wait for another decade to allocate at the least 6 percent of GDP to the education target?

The centre's budget of 2021-22 has already made it apparent that funding for the education sector is bound to get cut. Centre has allocated Rs. 93224 crores for education which is around 6 percent less than the education budget of the previous fiscal year. Reiterating the 6% goal in the NEP 2020 and cutting the education budget in the very next fiscal year, point out the dis-connect between the fiscal realities of India and funding goals of NEP 2020. In addition, it is unlikely that states will not slash their respective education budgets for the year 2021-22 in order to divert funds for fighting the pandemic. Thus, prima facie it can be comfortably argued that the centre and the states are going to continue their focus on re-building the economy and the health infrastructure in the coming couple of years. The education sector may continue to remain low in the priority of government expenditure.

Needless to say, the after effects of the current pandemic may go beyond GDP growth, which have a direct bearing on education expenditure. With projected contraction in India's GDP, Government's tax receipts are undoubtedly poised to decline. Worsening of an already low tax-GDP ratio will hit education expenditure. Even if this goal is reached, the amount may not be enough to achieve the targets envisaged in NEP 2020. Already apprehensions are ripe about the adequacy of 6% of GDP to achieve universalisation of school education and 50% GER in higher education by 2035 along with quality improvement and structural changes as envisaged in the NEP 2020.

Earlier studies have projected an increased requirement in the share of expenditure on education to GDP to meet the targets of Education for All, commensurate with the international standards in a knowledge economy, skilled labour, growth and development in science & technology etc. Seth (1985) projected a required growth up to 10 percent of GDP, while Tilak (2006) estimated an expenditure requirement beyond 8-10 percent of GDP.

In the current situation, the likelihood of an absolute value of 6% GDP being lesser than the absolute expenditures in previous years is not unfounded. The very essence of the goal of 6 % GDP seems to be fading post pandemic. The need for a detailed empirical exercise towards calculating the financial requirements of the education system in the coming two decades and arriving at a more pragmatic figure is required more than ever before. As India's demographic structure is undergoing a fast transition with a youth bulge but a decline being projected in the child population, the intra-sectoral requirements of the education sector are logically going to change (Narayana, 2019). Already the education sector in India has expanded significantly in the past decade and now higher education in particular is deemed to be massifying (Varghese 2015) and technical education hyper galloping (Khare 2014). With formalisation and universalisation

of Early Childhood Care and Education (ECCE), commitment to health, nutrition and child friendly play -way learning in the NEP 2020 for 1,07, 456 children projected for 2021, additional funds will be required for which there have hardly been any estimates made in earlier times. Thus, a more informed estimation of required funding target to check the validity of the long existing 6% of GDP goal can make the pathway clearer. The Education Commission of 1964-66 had made a detailed analysis of the trends since independence and estimated the education sector's requirements for the coming two decades, keeping in sight the key variables like economic growth, population growth, growth in enrolment and the per student expenditure (Tilak, 2007).

However, what needs to be appreciated is that NEP 2020 specifically made it clear that 6 percent of GDP is purely for public spending on education. Such clarity was missing in the earlier two education policies, which gave birth to unnecessary controversies on whether the 6 percent of GDP for education should include public as well as private investments. Yet another important thing that needs to be brought to the fore is that the NPE of 1968 hinted on the strategy of gradualism for achieving the aim of the 6 percent whereas the NEP 2020 is targeting it 'at the earliest'. The NEP 2020 reads as "the centre and the state will work together to increase the Public investment in the education sector to reach 6 percent of GDP at the earliest". Whereas, the Education Policy of 1968 stated "the aim should be gradually to increase the investment in education so as to reach a level of expenditure of 6 percent of the national income as soon as possible". Although, the interpretation may overtly mean the same, but a closer look begs the question if the recent policy is proposing 'a big push' (Tilak) or the 'shock therapy' in contrast to 'gradualism'.

There has been a lot of debate over the merit of shock therapy and gradualism to decide upon the optimal speed of policy reforms and implementation. As per the famous Mussa Proposition, in the absence of the other distortions, Shock therapy is the optimal reform plan even in the presence of the costs of adjustments. On the other hand, as per Lipsey-Lancaster's theorem, gradualism is the second best strategy, simply because it cannot be the first best (Dehejia, 1996). Both of these strategies are explored with the help of hypothetical scenarios in the following section.

4. Alternate Pathways

The need to allocate a substantial amount of resources in order to attain the goal of 6 % GDP for education is unquestionable. But, whether to respond to the pandemic by a positive funding shock for the education sector i.e. increasing the GDP's share to education to 6 percent in one stroke or to continue with the strategy of gradualism is a billion dollar question.

Table 2 demonstrates three scenarios worked out for the next one and the half decade. In scenario A, we assume that the centre announces immediate necessary adjustments in the current year budget to up-scale the allocation for the education sector to reach the 6 % landmark and continue with it thereafter. Thus, scenario A aligns with the shock therapy but it is unlikely to fructify looking at the government's constraints in handling the pandemic and re-building the economy. But, if instead of up-scaling the current budget, the government decides to reach the 6 percent target after two years when the GDP is being projected to re-bound to its pre-pandemic level, then the discussed goal could have been worked out to be achieved by as early as 2023-24. Keeping in mind the resurgence of the second wave of the pandemic in 2021 such an assumption also seems to be absolutely unrealistic. Thus in Scenario B and C, we try to work out the strategy of gradualism with a shock twist. As per scenario B, if the government increases the GDP's share to education at 5 % per year, something closer to what was realised in the year 2014-15, then the 6 % goal may be gradually accomplished by 2025-26.

India will be celebrating its 75th Republic day in 2025 and reaching a long pending goal pertaining to the education sector shall add to the celebration. If after reaching the 6 % landmark, we continue to stick to spending just 6% GDP on education till 2034-35(scenario B), then actual allocations to education will have to be increased only at a modest rate of around 5% post economic recovery, a rate just half than the 10% growth in allocations to the education sector that was observed in recent times (Figure 1).

Table 2: Required Allocations to Education to Reach the Goal of 6% GDP

Year	Scenario A		Scenario B		Scenario C	
	Percentage of GDP	Rs. Crores (As per the Post Pandemic GDP Projections)	Percentage of GDP	Rs. Crores (As per the Post Pandemic GDP Projections)	Percentage of GDP	Rs. Crores (As per the Post Pandemic GDP Projections)
Projections						
2018-19	4.52	631960.5	4.52	631960.5	4.52	631960.5
2019-20	4.69	683143.1	4.69	683143.1	4.69	683143.1
2020-21	4.81	646674.3	4.81	646674.3	4.81	646674.3
2021-22	6.00	899428.5	5.05	757094	5.05	757094
2022-23	6.00	960589.7	5.30	849005.2	5.30	849005.2
2023-24	6.00	1066299	5.57	989556.4	5.57	989556.4
2024-25	6.00	1146220	5.85	1116912	5.85	1116912
2025-26	6.00	1225654	6.00	1225654	6.00	1225654
2026-27	6.00	1306342	6.00	1306342	6.45	1403417
2027-28	6.00	1388778	6.00	1388778	6.77	1566577
2028-29	6.00	1473120	6.00	1473120	7.11	1744802
2029-30	6.00	1559403	6.00	1559403	7.46	1939349
2030-31	6.00	1647615	6.00	1647615	7.83	2151506
2031-32	6.00	1737722	6.00	1737722	8.23	2382628
2032-33	6.00	1829678	6.00	1829678	8.64	2634148
2033-34	6.00	1923438	6.00	1923438	9.07	2907588
2034-35	6.00	2018954	6.00	2018954	9.52	3204575

Notes: Scenario A: Sudden Big Push: Going for 6 % GDP to education sector in the year 2021-22

Scenario B: Gradually reaching the 6 % of GDP goal by increasing the share of GDP for education at 5 percent per year. The goal will be attained in 2026-27. Remaining at 6 percent thereafter.

Scenario C: Gradually reaching to the goal of 6 percent of GDP for education by 2026-27 and letting the GDP share increase at the same rate of 5 percent per year thereafter.

Source: Authors

Whereas in scenario C, after reaching the 6% goal in 2025-26, we do not stop but keep increasing the rate of growth of GDP's share for education at a 5 percent rate. Then, by 2034-35 we shall be able to spend 9.52 percent of GDP on education, a figure closer to the average of OECD countries and something that looks more pragmatic from the point of view of India's fast expanding education sector and the additional requirements emerging from the education reforms proposed in the NEP 2020.

As such, the mixed approach proposed in scenario C seems to be the most logical and desirable one: maintaining at least a 5% growth of GDP spent on education while assuming that the positive kick of the NEP 2020 shall mitigate the negative pullback of the pandemic such that the combined effect may be a modest growth in PE on education to be continued till 2034-35. Scenario C would require the allocations to the education sector to grow by around 10%, a rate that is being experienced in recent times (Figure 1). Such a strategy will slowly but surely allow India to go beyond the 6% GDP on education, making its way upwards. This may be defined as a combined strategy of 'shock therapy' close to the pandemic followed by gradualism thereafter. Increasing the PE as percentage of GDP even by 5% in these times is as good as giving a 'big push' and may be termed as 'shock therapy'. Continuing with this modest increase of 5% even when the economy makes a 'V turn' and stabilises qualifies to be put under the category of 'gradualism'.

5. Conclusion and policy implications

Within its visionary framework of holistic and inclusive education, the NEP 2020 entails specific provisions for wide ranging fundamental and advanced needs of a futuristic quality education system. The purpose is to ensure adequate and trained human resources, state of the art physical resources and far-reaching up to date digital resources. It goes without saying that the need of the hour is to enhance the education budget in order to meet the targets specified by the NEP 2020. A 'Mixed S-G approach' of gradualism following shock therapy may be more desirable. There are three main reasons for considering the desirability of shock therapy. These may be stated as follows:

(i) Covid-pandemic has enormously enhanced the absorptive capacity, i.e. education sector's ability to optimize the utilization of increased funding, innovations, technology etc. of the education sector not only due to rapid expansion of the sector referred as 'massification' by authors (Varghese 2015) but also because increased funding would be needed for the early childhood care sector, technological upgradation, digital integration, restructuring, research and innovation, new recommendations of quality improvement, all of which have been additionally incorporated in the NEP 2020. The very implementation of the NEP 2020 in letter and spirit shall demand increased funding.

(ii) Gradualism as a strategy has failed to reach the 6 percent mark even after the five decades since the Kothari Commission set up. Hence, there is no guarantee if gradualism will work in the future. Thus, 'do it at once and forever' achieves an edge over gradually reaching the 6 percent goal.

(iii) Shock therapy has worked for the American education reforms during 1950s. Although the context of this example is different from the pandemic triggered situations today, the sudden positive public funding shock can help India in thoroughly reforming its education sector as per the guidelines of the NEP 2020 which also aligns with the spirit of 'Aatmanirbhar Bharat' i.e. Self-Reliant India.

Economic crisis emerging out of the current pandemic is creating a tough situation to meet all the enhanced financial requirements. Given the rising concerns of basic livelihood, health and

nutrition that may demand priority investments of huge order, a more feasible pathway appears to be 'gradualism' as against the proposition of reaching the 6% target at 'the earliest'. However, given the fact that even in times of such crisis, ignoring the education sector will have serious long term implications for sustained economic growth, cut in education budgets need to be curtailed.

A mid-term strategy (reaching 6% target by 2025-26) applying a mix of 'shock therapy' followed by 'gradualism' may still be more desirable as well as feasible. The approach should be to not just stagger the priorities over time but across the major supplementary sources of public expenditure. Thus, areas requiring immediate attention may be put under the funding priority of the Government, whereas those which have a direct bearing for the private sector, corporate bodies may be put under partnership funding mode, and those which can be shifted for a later period, may be put under staggered funding mode. Thus, without adopting a mixed approach of gradualism following 'shock therapy' the target of spending a minimum of 6% GDP on education shall continue to remain a distant dream. In fact, it is high time that in order to implement the NEP 2020 in its true spirit, we target to go beyond the 6% mark, which may become possible by adopting the mixed S-G approach.

References

Agarwal, M., & Ghosh, S. (2015). *Structural Change in the Indian Economy.* New Delhi: Centre for Development Studies.

Altbach, P. G., & Wit, H. d. (2020, April 4). *Post Pandemic Outlook for HE is Bleakest for the Poorest.* Retrieved from University World News: https://www.universityworldnews.com/post.php?story=20200402152914362

Antoshin, S., Berg, A., & Souto, M. (2008). *Testing for Structural Breaks in Small Samples.* Working Paper No 08/75, International Monetary Fund, IMF, 1-27.

Bai, J., & Perron, P. (1998). Estimating and Testing Linear Models with Multiple Structural Changes. *Econometrica*, 66(1), 47-78.

Bai, J., & Perron, P. (2003). Computation and Analysis of Multiple Structural Change Models. *Journal of Applied Econometrics,* 18(1), 1-22.

Becker, Gray S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education, 3rd Edition.* Chicago: University of Chicago Press.

Cheusheva, S. (2021, March 2). *How to Forecast in Excel: Linear and Non-Linear Forecasting Methods.* Retrieved April 24, 2021, from Alebits.com: https://www.ablebits.com/office-addins-blog/2019/03/20/forecast-excel-linear-exponential-smoothing-forecasting-models/

Choudhury, P. R. (2014). *Multiple Structural Break's in India's GDP: Evidence from India's Service Sector.* Retrieved from https://www.semanticscholar.org/paper/Multiple-Structural-Breaks-in-India-%E2%80%99-s-GDP-%3A-from-Choudhury/61b91e66772887bcc71ddce8d85327b1cba46e31

Dehejia, V. H. (1996). Shock Therapy vs. Gradualism: A Neoclassical Perspective. *Eastern Economic Journal*, 22(4), 425-431.

Hanushek, E.A. & Kimko, D.D. (2000). Schooling, labour force, quality and the growth of nations. *American Economic Review,* 90(5), 1184–1208.

Hanushek, E. A., and Ludger, W. (2007). The Role of Education Quality for Economic Growth, Policy Research Working Paper No. 4122, World Bank, Washington, DC.

Kapoor, M. (2020, September 1). *India Stares at 5th Recession: How is it Different from Past Downturns?* Retrieved from Business Today: https://www.businesstoday.in/current/economy-politics/india-stares-at-5th-recession-how-is-it-different-from-the-past-downturns/story/406518.html

Kaur, B., Mishra, S., & Suresh, A. K. (2013). Cyclicality of Social Sector Expenditures: Evidence from Indian States. *Reserve Bank of India Occasional Papers*, 34(1&2), 1-36.

Khare, Mona. (2020). *"Exploring the relationship between economic growth, employment and education in Indian States."* In Govinda Rangachar and Poornima M ed India's Social Sector and SDGs. New York: Routledge

Krueger, A. & Lindhal, M (2000). *Education for growth: Why and for whom?* Working paper 808. Princeton University, Department of Economics. Ministry of Human Resource Development, Government of India, Statistics of Higher & Technical Education 2009–10 (Provisional).

Makina, A. (2020). Building Post COVID Response Expertise to Transform Education Systems. In L. Naumovska, *The Impact of COVID 19 on the International Education System.* Retrieved from https://www.proudpen.com/book/the-impact-of-covid19-on-the-international-education-system-pp/building-post-covid-response-expertise-to-transform-education-systems/

Mayer-Foulkes, David. (2005). Human development traps and economic growth. In Lopez-Casasnovas, Guillem, Rivera, Berta, and Currais, Louis (eds.), *Health and Economic Growth: Findings and Policy Implications*, pp. 115–141. Cambridge, MA: MIT Press

Narayana, M. R. (2019). Fiscal Policy, Demographic Transition and Public Spending on Education: New Macroeconomic Evidence for Higher Education from India. *Journal of Education Finance,* 44(4), 405-422.

Ranis, G. (2004). "Human Development and Economic Growth", Centre Discussion Paper No. 887, Economic Growth Centre, Yale University, USA.

Ranis, G., Stewart, F & Ramirez, A. (2000). "Economic Growth and Human Development", World Development, 28(2): 197-219.

Seth, S. C. (1985). *India: The Next 7000 Days*. New Delhi: Wiley Eastern.

Tilak, J. B. (2006). On Allocating 6 Per Cent of GDP to Education. *Economic and Political Weekly,* 41(7), 613-618.

Tilak, J. B. (2007, March 10). The Kothari Commission and Financing of Education. Economic & Political Weekly, 42(10), 874-882. Retrieved from https://www.epw.in/journal/2007/10/special-articles/kothari-commission-and-financing-education.html

Varghese, N. V. (2015). Challenges of Massification of Higher Education in India. New Delhi: Centre for Policy Research in Higher Education.

Wallack, J. (2003). Structural Breaks in Indian Macroeconomic Data. *Economic & Political Weekly,* 38(41), 4312-4315.

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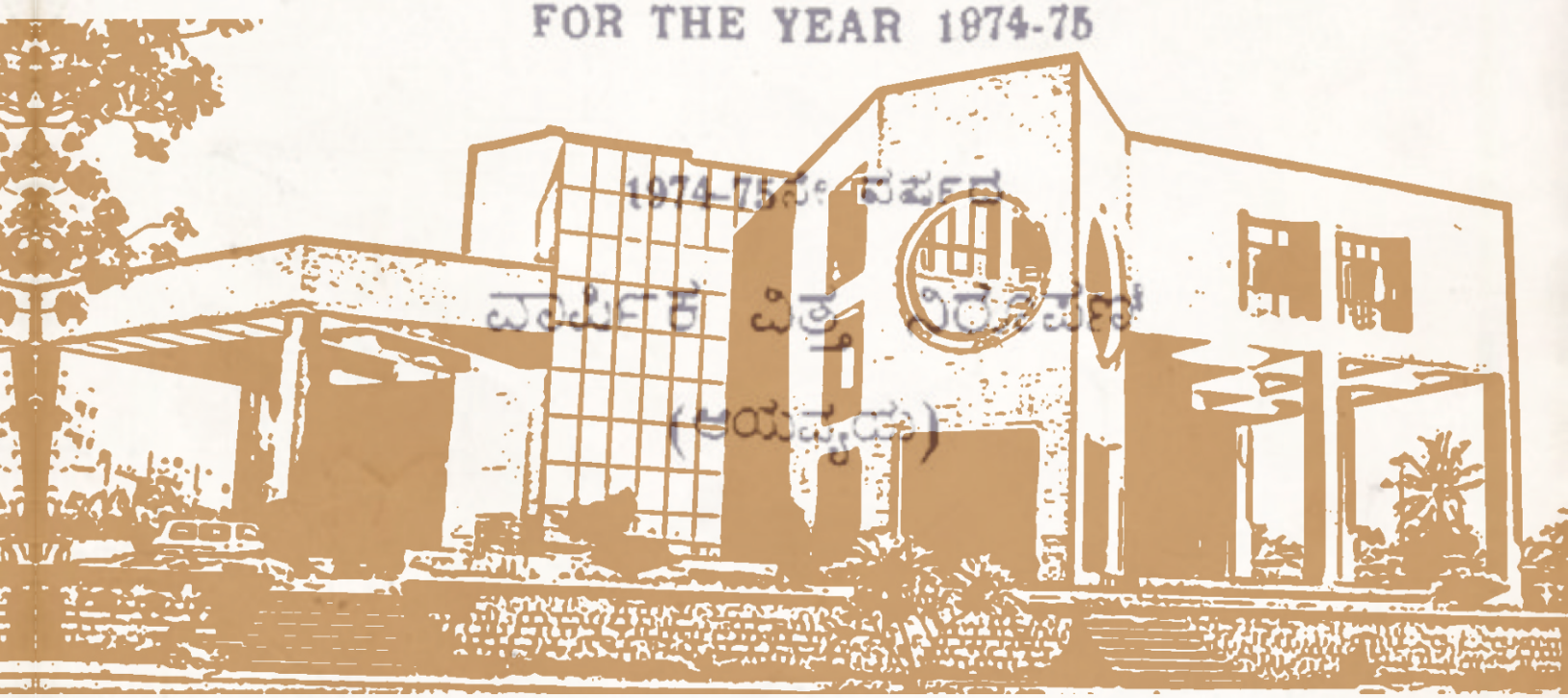
ANNUAL FINANCIAL STATEMENT

(BUDGET)

FOR THE YEAR 1974-75



(As presented to the Legislature in March 1974)

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Government of Karnataka
FISCAL POLICY INSTITUTE

Kengeri Post, Bengaluru-Mysore Road, Bengaluru – 560060
Telephone : +91 80 26971000 Fax : +91 80 26971010 e-Mail : journal@fpibangalore.gov.in