Public Expenditure on Education : A Review of Selected Issues and Evidence

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Abstract

The role of education in economic development has been recognised for quite some time in mainstream economic literature. Divergence between the private and social rate of return from education is the rationale for intervention by the state in ensuring equity in opportunity across the population. The so-called 'New Growth Theories' predict that higher levels of schooling and better quality of workforce will lead to an increase in the rate of growth, further strengthening the case for public expenditure on education. The outcome of these lines of research also has implications for the financing of education. However, the effectiveness and efficiency of resource allocation by the government has generated considerable debate, both from ideological and technical points of view. It is widely acknowledged that there is a large scope for improvement in both the level, and the quality of publicly-funded education. New institutional arrangements are being designed to address the deficiencies in incentives and monitoring, thereby improving quality.

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Introduction

Public intervention in the area of education, particularly elementary education, is universally accepted. From the lens of education as a fundamental right, such intervention directly follows from the basic features of the paradigm. Even if an alternative paradigm of a modern welfare state is preferred, its well-accepted tenets lead to a substantive role of the government in the area of education. What is required is that the government should be interested in (a) the long-term increase in the expected income of its citizens; (b) higher growth of the economy; and (c) lower poverty levels. All three are non-controversial as government objectives. Public pursuance of a policy of better-educated citizens can pay dividends for all the three stated goals as revealed by the empirical literature on various aspects of education.

Given this, a natural extension of the literature would be to examine the nature and design of government interventions and how to make the most of government expenditure in this area by improving service delivery. This rather selective review covers how more and better education meets all the three objectives and goes on to discuss the question of service delivery. The overall objective is to draw lessons for sustainable arrangements for financing the cost of the required degree of public intervention.

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The role of education in economic development has been recognised for quite some time in mainstream economic literature. Education has both intrinsic and instrumental value: it is desirable not only for the individual but also for the society as a whole (Sen, 1999). Education as private good benefits directly those who receive it, which in turn affects the individual's future income stream. At the aggregate level, a better educated workforce is thought to increase the stock of 'human capital' in the economy and increase its productivity. Considering the externalities in education, it is widely accepted that the state has an important role to play in ensuring equitable distribution of educational opportunities to the entire population.

Education therefore has a number of properties that call for a multi-dimensional approach in undertaking an examination of the literature. From a microeconomic perspective, higher level of educational attainment raises the individual's wage rate in the labour market, and therefore the rate of return on education. Concurrently, there has been a substantial body of theoretical and empirical analyses regarding the contribution of human capital in explaining the divergence in the rates of growth across countries of the world. The literature points to schooling as the major determinant of differences in productivity, although the appropriate method of including the schooling variable is still open to debate. However, there is a general consensus on the importance of education, especially elementary education, in fostering and sustaining economic growth and development.

The development literature has highlighted the role of education in reducing inequalities that prevail in many developing societies. Education is both a consumption as well as a capital good, but the conventional credit market mechanisms do not operate efficiently. Inequalities across generations can persist if the level of education is correlated with parental income and wealth (Banerjee and Newman, 2003). This characteristic has been used to justify public intervention in the provision and financing of education from the equity perspective.

Cross-country studies have tried to quantify the impact of government expenditure in raising educational and health indicators. The effectiveness and efficiency of government expenditure in the social sector varies between different geographical regions, and also depends on the stage of development. Innovative institutional arrangements and alternative financing mechanisms are being explored in order to

supplement public funds, and to improve the effectiveness of the public resources thus invested.

The framework for this review is predicated on the different strands of research mentioned above.

- The literature on the rate of return to education indicates that there is considerable rationale for investing in education on behalf of both the individual and the society. At the earlier stages, primary and secondary, the social returns can in some cases exceed private benefits, strengthening the case for public expenditure.
- The human capital thus accumulated impacts positively on productivity, and a higher rate of growth for the economy, as evidenced by empirical applications of models incorporating schooling variables in economic growth.
- Externalities prevalent in the education sector necessitate intervention by the state in order to ensure equity and improve outcomes. The literature on effectiveness and efficiency in public expenditure investigates whether there is any impact on human development outcomes, and whether further gains can be achieved with better use of resources, with improved quality.
- Finally, the growing literature on service provision and delivery delineates the current state of the debate on how better institutional arrangements and governance can help achieve the objective of equitable educational opportunity in terms of provision and access, addressing some of the inefficiencies of public funding and delivery of education services.

This survey outlines the major points of debate and consensus in the literature on education outlined above. Section 2 explores the issues pertaining to the rate of return in education, and the development of new theories of growth that focus on human capital. Section 3 provides an overview of the growing literature on effectiveness and efficiency of public expenditure in the social sector. Section 4 reviews the studies on institutional mechanisms in service delivery and new approaches to financing of education. Section 5 concludes.

II. Rate of Return to Education (RORE) and Economic Growth

2.1 The RORE debate

In neo-classical economics, education is looked upon as an investment with the potential of generating an income stream in the future. The discounted present value of the income would indicate how much of education will be demanded at the margin, i.e., what is the return from an additional year of education. Mincer (1974) assumed that the only cost of attending school for an additional year is the opportunity cost of students' time. The wage equation is given as:

$$\ln W_i = b_0 + b_1 S_i + b_2 X_i + b_3 X_i^2 + e_i \qquad (1)$$

where ln W_i is the natural log of the wage for individual i, S_i is years of schooling, X_i is experience, and ε_i is a disturbance term.

If the proportional increase in earnings caused by this additional schooling is constant over the lifetime, the slope, β_i , could be interpreted as the rate of return to investment in schooling. Mincer (1974) augmented the model to include a quadratic term in work experience to allow for returns to on-the-job training.

This 'Mincerian' wage equation has been the topic of much empirical work, and has generated a fair bit of controversy. Psacharapoulos (1985, 1994) and Psacharapoulos and Patrinos (2002), provide a set of rate of return calculations for most countries of the world. The latest data point to declining rate of return as one goes from developing to developed countries. The estimates do not vary widely, though, with mean rate of return of around 7 and standard deviation of 2.2, the maxima and minima being 15.4 and 2.2 percent respectively. The rate of return for India has been estimated at 10.5 (from Kingdon, 1995), nearly similar to that of the US. However, this estimate is based on only one study of a semi-rural area, and therefore the possibility of generalisation is limited. Among regions, Latin America has the highest rate of return, followed by Africa and Asia, with OECD countries having the lowest return to education on average.

The calculation of RORE *per se*, as well as at the level of aggregation of a country or a continent has been criticised by several authors (Bennell, 1996; Behrman and Birdshall, 1987; Schultz, 1988). The major drawback is that the inference was drawn using meta-analysis of studies with questionable data quality. Moreover, no adjustments were made *vis-à-vis* school quality or differences in ability and social condition. Recent advances in RORE calculation, therefore, use longitudinal datasets that can control for such factors over a long period of time (Blundell, Dearden, and Sianesi, 2004). For UK, which follows a similar education system as India, Blundell *et.al.* (2004), find that compared to stopping at or before 16 years of age with no qualifications, the RORE is 18 percent for secondary school finishers, 24 percent for higher secondary, and nearly 48 percent for university and higher education. No comparable studies on a nationwide scale have been done for India due to lack of longitudinal dataset such as, the National Child Development Survey of the UK.

A major drawback of the micro-Mincer estimations is that they fail to take into account the social return to education. The social return can be higher if an increase in education leads to technological progress, or positive externalities such as, reduction in crime, unemployment, or better governance. Evidence points to the beneficial effect of education in terms of reducing fertility and improving maternal and child health (Glewwe, 2000). On the other hand, social return can be lower if education is only a screening mechanism, or when returns to physical capital are higher than human capital. In such a case, increasing education may lead to misallocation of resources and lower social returns (Krueger and Lindahl, 2001).

2.2 Human Capital and Economic Growth

The aggregate effect of human capital has been the subject matter of a lively debate in growth theory. The neo-classical growth model (Solow, 1957) sought to explain differences in per capita incomes between nations and regions through differences in productivity. Using constant returns to scale Cobb-Douglas production function with capital and labour as inputs, several studies have estimated the following growth accounting equation:

$$\frac{\dot{y}}{y} = a\frac{\dot{k}}{k} + \frac{\dot{A}}{A} \quad (2)$$

where y and k are per capita income and capital-labour ratio respectively, A is the technology term and α is the share of capital in the production function. The productivity growth, $\dot{A}/A$, is calculated as the 'residual' of per capita income growth and growth in the capital-labour ratio. Most growth accounting studies for the US and other developed countries have indicated high total factor productivity (TFP) growth of around 2 percent per annum for the post-war years until about the mid-1970s (Jorgenson and Griliches, 1967; Denison, 1974). The TFP growth rate diminished substantially thereafter, in what has been termed as 'the productivity slowdown' in the developed world. However, cross-country studies indicated that the gap in productivity between the developed and the developing countries showed no signs of narrowing, although the neo-classical model predicted convergence in TFP growth over time due to diminishing marginal returns to capital.

This empirical observation led to the development of models of endogenous growth (Lucas, 1988; Romer, 1990a,b) to try to explain such differences by means of differences in human capital. In the Lucas (1988) framework, the production function is specified as:

$$y = Ak^{a}(uh)^{1-a}(h_{a})^{g} \quad (3)$$

where y is output, k is physical capital, u is the fraction of time devoted to productive activities (and the rest to accumulation of knowledge), h is the human capital input, and h_a is the average human capital in the economy.

The human capital variable increases the rate of growth either through direct accumulation (uh) or through existing stock of knowledge (h_a) that lead to innovation and spills over to the rest of the economy. Moreover, if the coefficient $g > 0$, then the production function becomes increasing returns to scale, where the productivity growth is endogenised in the human capital input. The general consensus of the large body of empirical growth literature (Mankiw, Romer and Weil, 1992; Barro and Lee, 1993; Benhabib and Spiegel, 1994; Young, 1995; Temple, 1999;

and others) is that most of the variation in productivity can be explained by the initial stock of human capital, where a measure of schooling is included as a proxy in the cross-country regressions.

Recent work has also highlighted the possibility of reverse causality between schooling and growth. Bils and Klenow (2001) calibrate a neo-classical model and report that only one-third of the correlation between education and growth can be explained by high level of education in 1960, the initial period. Simulations show that higher expected growth induces more schooling by lowering the effective discount rate. The aggregate data therefore is consistent with a strong response of schooling to growth. Foster and Rosenzweig (1996), report that the returns to education increased in those regions of India where Green Revolution induced faster technological change. There is a substantial difference in the enrolment rate in primary schools in areas that had above average yield growth compared to those where the growth was below average. The response to schooling of expected growth in macro-simulation seems to match empirical results for India.

2.3 Policy Implications

At a policy level, the implication is that for long-run growth, it is necessary to increase the stock of human capital through investment in education. For developing countries, the gains from education and its spillover effect into other sectors will mean that the social return is likely to be more than to private return (Banerjee and Duflo, 2004). However, rather than being an amorphous quantity, different levels of education – elementary, secondary, tertiary – have different rates of return for the individual and the society.

As Sen (1999) points out, education has both intrinsic and instrumental value. Basic literacy and numeracy benefits the whole society. Elementary and to a lesser extent, secondary education, have substantial externalities, necessitating public policy intervention for universalising access and availability. Returns to tertiary education accrue mostly to individuals in terms of accumulation of skills, and consequently higher wages. University and technical education can therefore be seen as screening mechanism in the labour market, and public intervention is needed more in terms of ensuring equity when labour markets are imperfect (Kochhar, 2003).

Therefore, in terms of financing of education, equity and market failure implies that public expenditure priority should be such that the greatest benefit should go to lower tiers of education – elementary and secondary. However, a comparison of South Asian and OECD countries indicate that expenditure per tertiary student as a ratio of expenditure per student in primary stage is 5.6 as compared to 1.8 for OECD. The comparable figures for secondary education are 3.3 and 1.5 for South Asia and the OECD respectively (UNESCO, 2003). From a public policy perspective, therefore, there is some evidence of misallocation of public expenditure favouring higher education levels, which is detrimental to the equity objective. Reforms in public spending on education would need to take into account the rates of return to different levels of education from the individual and social perspective, which clearly leans in favour of public financing of primary and secondary education.

Financing of education in the context of economic growth can be analysed both from demand and supply sides. The new growth literature reviewed above indicates that accumulation of human capital would increase the long-run economic growth. This growth process leads to a rise in the demand for schooling (Bils and Klenow, 2001). Empirically, Foster and Rosenzweig (1996) found that the rise in the demand for schooling is broad-based, coming from individuals who benefit directly (landowners), and indirectly (farm labourers) from this growth. Historically, the pattern in developed countries has been to increase expenditure on basic education to cater to this increased demand for education from all sections of the society.

This expansion in basic education systems has been financed through the increase in the tax revenues of the government by a tax-transfer system, either at the central or local level. Tertiary education is left to the choice of individuals to determine whether the returns to higher education justify the costs of acquiring such skills. The government facilitates higher education in case individuals for whom access is restricted due to income constraints (scholarships, contingency grants), or in cases where the free-market allocation will be sub-optimal (eg. basic and social sciences).

Higher economic growth may also lead to a change in the structure of occupations and the returns to education (Banerjee and Newman, 1993). Depending on the nature of the growth process, the returns to certain types of skills increase. The supply of such skills,

however, may be constrained on two grounds —– the income level of the individual (or the family) and imperfections in the credit market. This is manifested through increases in the wage rates, because of the lower-than-optimum supply of labour, and a higher-than-optimum rate of return. The degree of access to education and skills, therefore, may be crucial in determining the path of development in the long run.

From the supply side, therefore, public intervention can fulfill two roles: first, it can ensure access through reducing the cost of education and correcting credit market imperfections; and second, provide incentives to expand capacity to cater to the increase in demand. If these objectives can be aligned harmoniously, both equity and efficiency considerations can be taken care of. The challenge is to ensure that such expenditure is effective in achieving the economic (higher rate of growth) and social (better distribution of income, lower poverty) objectives, and is allocated and delivered efficiently. The rest of the review is structured around these considerations of public expenditure in education.

III. Effectiveness and Efficiency of Government Expenditures

3.1 Asian Experience in Human Development Financing

As noted above, the dual nature of education and health, and their impact on economic growth and development calls for a significant role of the government in the provision and delivery of these social services. The nature and scope of the interventions vary, depending on the stage of development and the characteristics of the society.

International experience in social sector development can provide some pointers to what a successful policy framework should look like. One example that has often been cited is that of the Asian economies, such as Japan, Korea, and South-east Asian nations. Most of them have been able to achieve high levels of economic growth in the post-war period, and have also attained comparatively greater social development than countries in South Asia or Africa.

This experience has been reviewed in Rao (1998) for public expenditure policies, Mundle (1998) for health and education

expenditure, while Mingat (1998) focuses only on education in East, Southeast, and South Asian countries. The broad conclusions are as follows. Several lessons can be drawn from the High-Performing Asian Economies (HPAEs) including Japan, Korea, and Taiwan regarding how the efficiency and equity aspects of public expenditure were harmonised leading to several decades of high growth and social development. These include: (i) fiscal prudence in overall government budget, which 'accommodated' expenditure in social sectors[1]; (ii) appropriate allocation of public expenditure, initially focusing on compulsory elementary education; (iii) high priority for primary education, (iv) significant role of the private sector in both provision and delivery of social services, especially in tertiary education and healthcare; and (v) scale efficiency of high pupil-teacher ratios combined with high teacher salaries.[2] Mingat (1998) highlights the role that equitable distribution of educational resources across regions and communities played in avoiding the problem of disparity in educational provision and attainment. Although replication of country experiences is not suggested, the East Asian countries can be an example of best practice experience in financing social sector expenditure.

3.2 Effectiveness of Public Expenditure in Social Sectors

From around the mid 1990s, a number of studies have investigated the effectiveness of public spending in education (and health) on social development outcomes, such as enrolment rates, infant mortality, life expectancy, and other outcome indicators (Anand and Ravallion, 1993; Appleton *et.al*.1996; Filmer and Pritchett, 1997; Mingat and Tan, 1998; Gupta *et.al*. 2002; Baldacci *et.al*. 2004; among others). As we have seen in section 2, the main justification of public spending on education is based on the social rate of return, with higher levels of basic and secondary education increasing the rate of return and creating conditions conducive for long-run growth. Similarly, public spending on primary health care is justified by increases in welfare that accrues from a reduction in the burden of disease, particularly because of large spillover benefits. However, in both cases, the effectiveness of government spending goes down if allocations are skewed towards higher education and curative (tertiary) rather than preventive (primary) healthcare.

Most of the studies mentioned above use cross-country datasets for their analysis. Due to the fact that the basic objective of public

expenditure policies changes as national income increases, most studies either concentrate on a sub-sample of developing/transition economies or on a particular region such as Africa (eg. Appleton, *et.al*.).

The results of these cross-country regressions are mixed. Most studies report that the direct impact of public investment on measures of education attainment is weak. Other variables such as per capita income, age distribution of the population as well as income inequality also turn out to be statistically significant in cross-country regressions. However, after correcting for quality, Gallagher (1993) finds that public spending has a positive impact on educational attainment. Similarly, using instrumental variable technique, Gupta *et.al.* (2002) report positive effect of public spending on education as a percentage of GDP and of the share of primary education in total expenditure. Urbanisation also seems to play an important role in educational attainment in their results.

A similar analysis at the state level in India has been carried out by Kaur and Misra (2003). For 15 non-special category states, their empirical findings from a panel data analysis of social sector expenditure and attainment indicates that public expenditure on education has been more productive as compared to health, and this relationship is stronger for relatively poorer states. However, the estimates are not robust to alternative functional specifications and hold only for random-effect in the panels. These estimates therefore, may not be very reliable.

In sum, the literature on the effectiveness of public expenditure in the social sector indicates a larger impact on education compared to health in cross-country or panel studies. Other socio-economic variables such as per capita income and its distribution, the demographic profile, urbanisation also influence the effectiveness of such expenditure. Variations in econometric estimates also reflect the choice of the indicator used in the analysis.

These studies can be extended by normalising the control variables for different states, and then to examine the impact of government expenditure on outcome indicators. Moreover, the literature does not separate out the impact of private expenditure largely due to lack of comparable cross-country data. This can also be considered explicitly to determine a more realistic impact of government expenditure on education and healthcare. Differentiating between output and

outcome indicators of government expenditure would also enable us to improve on studies mentioned above.

3.3 Efficiency of Public Expenditure

The discussion of the effectiveness of public expenditure on social sectors leads to an evaluation of the efficiency of such expenditure *vis-à-vis* an improvement in human development outcomes. Several papers have attempted to address this issue both in the context of developing and developed countries. The debate on the appropriate methodology and interpretation of the findings is still ongoing.

Studies on efficiency of public expenditure on human development have utilised both parametric and non-parametric methods, borrowed mostly from production theory. There are essentially four types of studies that have been undertaken in this regard. First, some studies focus on comparing changes in efficiency associated with reform programmes in the public sector in specific countries. The comparability is limited, but they do provide some examples of best practices at the policy level.

Second, government efficiency has been investigated using data on inputs of government spending. In developed countries, these studies have dealt with health sector and social security reform, where the government expenditure is the highest among the social sectors.

Third, some empirical research has been carried out to explain cross-country differences in social indicators which are used as proxies for government output, after netting out the effects of income levels and distribution, as well as rate of economic growth (Anand and Ravallion, 1993; Aturapane *et.al*. 1994; Karras, 1996; Bidani and Ravallion, 1997; Tanzi and Schuknecht, 1997). Differences in social indicators among developing countries have been attributed to variation in both the level and also the efficiency of public expenditure (Kakwani, 1993).

Some recent papers use information on both inputs and outputs (or outcomes) to calculate non-parametrically the efficiency of government expenditure in the social sector (Gupta and Verhoeven, 2001; Afonso *et. al*. 2003; Afonso and St. Aubyn, 2004). Previous examples of this approach are found in the analysis of cost efficiency in

health services, especially hospitals. (Wagstaff, 1989; Zuckerman, 1994). These studies try to measure the efficiency of public expenditure in the social sector using Data Envelopment Analysis (DEA) or Free Disposable Hull (FDH) techniques that have been borrowed from production theory of the firm. Most of these studies are concentrated on OECD countries, while Gupta and Verhoeven (2001) try to extend the analysis to the case of education in developing countries in general, and Africa in particular, for three time periods. The study utilises the FDH analysis taking government expenditure on education as the input and literacy, primary, and secondary enrolment as output. Their results show that there was an increase in efficiency in expenditure over time in Africa. However, it still lags behind compared to countries in Asia and Latin America. They also report that efficiency in public spending on education has increased in India between 1991 and 1995 according to their criterion. This claim however has not been investigated in detail in the paper.

Afonso, Shuknecht, and Tanzi (2003) construct measures of both public sector performance (PSP) and efficiency (PSE) with regard to social sector outcomes in evaluating 23 countries of the OECD. PSP aggregates economic and administrative indicators to rank the sample countries, while PSE weights the performance indicator with public expenditure. Using FDH methodology for 1990 and 2000, their rankings on the basis of PSP and PSE indicate that countries with smaller public sectors do better both in terms of performance and efficiency in achieving social outcomes.

The use of government expenditure as input has come under criticism in cross-country analysis due to the fact that teacher salaries and cost of school inputs vary across countries. Afonso and St.Aubyn (2004) uses non-monetary inputs such as hours in school and teachers per 100 students for a study of OECD countries. Moreover, they utilise both the FDH and DEA for efficiency evaluation, and note that the results differ for lower income countries such as Mexico, Hungary, and Poland. They note that this may be due to the imposition of convexity assumption in DEA, whereas the FDH imposes no restriction on the shape of the frontier.

This recent literature on efficiency of public expenditure in the social sector has been critically reviewed by Ravallion (2005). He raises the question whether FDH or DEA techniques that are borrowed from

production theory of the firm are suited for application to the social sector. Ravallion's major criticism is focused on the lack of theoretical foundation for the empirical exercises, and the incomplete accounting of interdependencies between various types of government spending that are related to improving social sector outcomes. The exercises of efficiency analysis need to consider (i) the appropriate sectoral allocation of total government expenditure taking into account the complementarities between the outcomes; and (ii) efficiency within a particular type of expenditure, to account for the complementarities in inputs. Ravallion also suggests that the error term in regression analyses are likely to be highly correlated with both inputs and outputs, and proposes the use of lagged values as instruments.

Therefore, the literature on measuring the performance and efficiency of government expenditures is varied, and new techniques and methods are being tried out with various databases for cross-country analysis. Our survey did not find any study on the efficiency aspect of public expenditure in India[3] using either parametric or non-parametric methods, although some work on determinants of private expenditure has been undertaken using household level datasets (Tilak, 2002a, b; Shariff *et.al*.2003).

IV. Delivery of Public Services and Public-Private Partnership

Recent research has extended the previous discussion on effectiveness and efficiency of public expenditure. Government intervention in the social sector is not limited only to the financing but also in the provision and delivery of social services. This research discusses the inefficiency in service delivery as a major cause of the low impact and efficiency of public expenditure *vis-à-vis* social indicators (Filmer, Hammer and Pritchett, 2000; World Development Report, 2004; and others).

There are basically two directions in which the literature has proceeded. In terms of returns to the education debate, the scope of the discussion has widened from the quantity to the quality of schooling in explaining difference in labour market outcomes and economic growth. (Behrman, Ross, and Sabot, 2004; Hanushek, 2003; Hanushek and Kimko, 2000). The evidence points to an increase in wages linked to

higher test scores in school, which is used as an indicator of school quality after controlling for innate student ability. Moreover, from cross-country studies, a strong relation emerges between quality of labour force and economic growth, in line with the endogenous growth literature.

On the other hand, in most countries there is a preponderance by the government in the provision of schooling, and in the management of the education system. One of the empirical facts highlighted from developing countries is that of dysfunctional or non-functional publicly provided school system, especially in the rural areas (Chaudhury *et.al*., 2006). While the rationale for public intervention in education is to ensure that opportunities for education are equitable across all socio-economic groups, the reality is far from it. The publicly run schools are plagued by inadequate infrastructure and teacher absenteeism mainly because of inadequate incentives and weak monitoring mechanisms, leading to lower quality for those who cannot afford private schools (Banerjee and Duflo, 2005; Duflo and Hanna, 2005; Das, 2005). The effectiveness of public expenditure on outcomes, therefore, is visibly reduced.

Devarajan and Reinikka (2004), investigate this mismatch between government spending and social sector outcomes, and identify four possible causes:

- Governments may be spending on wrong goods or the wrong people.
- Public expenditure may not reach the frontline service providers due to corruption and mismanagement.
- Incentives to provide services as well as the monitoring mechanism are weak.
- Even if services are provided, there is a lack of demand on the part of the household.

In federal states, a number of problems may arise if sub-national governments are responsible for the financing and delivery of social services, as is the case with India. There may be (i) significant variation in quality of social services across the federal units; (ii) better-off states may allocate a larger quantum of resources due to high correlation between state income and social sector expenditure, which may be inefficient from a national perspective; and (iii) state-level allocations may not reflect national priorities. The financing problem therefore

becomes more nuanced than the generalised prescriptions that are put forward in cross-country analyses.

Devarajan and Reinikka (2004), argue that a decentralised service delivery through cooperative partnerships with voluntary organisations and local community can improve incentives and monitoring. The overall effectiveness and efficiency of public resources invested in the social sector is also likely to be higher in this new institutional setup.

Bardhan (2004), however cautions against following a policy of decentralisation as an end in itself. While agreeing that decentralisation can play a vital role in improving service delivery, he argues that the process should not be used for the government to withdraw from the responsibility of provision altogether. More importantly, decentralisation has to be used to fix accountability for the delivery of social services, and in monitoring of the impact of such devolution of service provision. Moreover, empirical studies need to be conducted on the change in impact using some baseline. In one example of decentralised programme implementation, Dreze and Kingdon (2001), have examined the contribution of mid-day meals in increasing school participation in rural India, especially among girls. Community involvement in implementation and monitoring seems to enhance the impact of the programme. However, impact of financial decentralisation on school quality and attainment has not been studied until now.

The final point relates to the possibility of having a symbiotic relationship between public and private financing schemes related to education. The dichotomy between public provision and private gain in education has been highlighted in section 1. India's education sector especially at the school level reflects the 'state *vs* market' paradigm (Kothari, 1999). Kothari argues that a voucher system similar to one in the United States[4] is unworkable in the Indian context given the levels of poverty and underdevelopment. His argument is for the direct provisioning of elementary education, and to stress on improving the quality in government schools.

More recently, the Planning Commission (2004) has explored the potential for public-private partnership (PPP) in improving access and ensuring quality of education at the elementary level. The report notes that 'PPP is a suitable method for services commonly provided by local

governments and is generally applicable for most components of service delivery. The types of services that can be provided through PPP will however vary from one local government to the other, based on their needs and priorities' (p.12). It lists out several schemes[5] where the private sector has been involved mostly in improving the quality of infrastructure and service, along with involvement of the local communities. While evidence is still anecdotal, the broad direction of policy in this regard is one that has to be studied carefully in exploring financing options for the social sector, especially education.

V. Financing of Education in the Perspective of the Review

Whether education in general and human development in particular is looked upon as a right, or from the goals of a social contract between the state and its citizens to enhance the well-being of all individuals in the society, it is evident that there is a significant role for public intervention. The responsibilities enjoined upon the state in this regard necessitate expenditure on the provision and delivery of public services of a certain minimum quality. This is especially true in developing countries that suffer from high levels of poverty, inequality, and market imperfections. Public interventions in education can lead to an improvement in the future income stream of individuals, enabling equitable distribution of wealth and help reduce poverty.

While the welfare-enhancing view of public expenditure on education is well-recognised, the complexity of the nature of education in terms of increasing both social and individual returns to investment makes the implementation of a financing framework very difficult. It is seen in the review that as one progresses from the basic to higher levels of education, private returns increase faster compared to social returns. However, in most developing countries of the world, governments allocate significantly more public resources per student in university and higher education than in elementary or secondary levels. These large differences cannot be explained fully by scale economies in the provision of publicly funded school education system. Such differences are negligible for developed countries, indicating that possibilities for reallocation exist as a country moves from the low-income to the high-income group.

During the process of economic growth, there is a possibility of a gap opening up between the demand and supply of education. Growth processes have been seen to have increased the demand for schooling, and the nature of growth determines the structure of employment and labour-market demand for particular types of skills. In this dynamic framework, substantial gains to society can be had if access to education can be enhanced, and if credit and labour market imperfections are reduced through public intervention. Policies to expand scholarships and remove distortions in wages will help to redistribute the fruits of growth. Second-round gains are then likely to be had though increased investment, both public and private, in education arising from an increase in tax revenues and personal incomes. Public expenditure on education can be in the nature of direct provision (elementary) or as a facilitator (secondary, higher, and technical education).

The literature on the effectiveness of public expenditure on education shows that there is variable impact across regions, as well as within countries at a similar stage of development. The efficiency literature points to institutional factors that affect the level and quality of public services. Recent research highlights the positive role that decentralisation can play in ensuring accountability and to undertake proper monitoring, especially involving the community. Community-based initiatives are also being explored as alternative mechanisms for financing education through effective Public-Private Partnership.

There is inadequate work done in India on the efficiency and effectiveness of public expenditure in different states and in India as a whole. There is one instance of a study examining the effectiveness of social sector expenditure for a subset of Indian states mentioned above, but its findings are open to debate. On the efficiency aspect, recent research has introduced non-parametric techniques for social sector expenditure. However, such studies have still not been conducted for India at the state level. Another contribution in this field would be to separate out the private from public expenditure in social sectors, and differentiate between output and outcome indicators in evaluating efficiency of public expenditure, although unbundling the data may be a difficult exercise. This however would give us a better picture of the effectiveness and efficiency of public expenditure in the social sectors.

What emerges from the review of literature is also a point that has not been researched fully – that the efficiency and quality of public service delivery are important from the equity perspective as well. In a mixed system such as India where education is provided both by the government and the private sector, large differences in quality between government and privately-run schools and universities might not be effective in achieving an equitable distribution of the fruits of economic growth. The scope of the discussion of the impact of public expenditure on education therefore, goes beyond resource mobilisation. Utilisation of resources, its efficiency and its outcome in the form of quality of service delivery is crucial for achieving higher levels of human development both in India, and other countries of the developing world.

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Endnotes

[1] Rao (1998)

[2] This is contrary to the usual prescription of lowering the wage bill in education, together with reducing the class size. The point that needs to be noted in the context of the East Asian economies is that after WWII, this strategy made economic and social sense due to the shortage of teachers and educational facilities. As per capita incomes started rising, the student-teacher ratio fell, and class sizes became smaller.

[3] Except for a passing mention in Gupta and Verhoeven, 2001

[4] Families with children are given vouchers that can be used to send them to school, which in turn encashes the vouchers from the government. The choice of school is left to the parents, and public as well as private schools can charge a premium over and above the value of the voucher. Competition between schools is supposed to ensure quality, and the voucher ensures access by subsidising the major part of the cost of school education.

[5] Programme of Mobilising Local Support to Primary Schools (PLUS); Computer Aided Learning at Elementary School (CAL); Improvement in School Curriculum and Infrastructure in Karnataka etc.