Social Rates of Return to Manpower Training Programs: The Policy Context

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Abstract

The paper stresses the importance of viewing social rates of return to training programs within their macro-economic and institutional context, in drawing policy conclusions from their measures. This context should not be taken as a datum, particularly in developing countries subject to economic and institutional change. Illustrations are given for externally effects, government macro-economic policies and institutional factors outside the government domain.
Social Rates of Return Measures to Manpower Training Programs:

The Policy Context

1. Introduction

The central message of this paper is that measured rates of return to manpower training programmes should not be regarded solely as a device for determining the redirection of investments in the training sector, but should also be seen as providing a framework for assessing appropriate measures that may be taken to improve training project profitability. We shall argue that rates of return measures initially at least, should constitute the first stage of policy analysis for the training sector, not its culmination.

Rate of return analysis is now well established as part of the toolkit for the appraisal of investments in the education sector. The general climate of opinion has changed markedly since the early days of the "human capital revolution" of the 1960s and the emergence of the economics of education as an independent field of study. The acrimony of the early debates between those economists that pressed for the use of rates of return in educational planning and policy formulation and those advocating a manpower requirements forecasting approach, has largely subsided. Most economists in the field today would give a positive role to educational rates of return, some a dominant one.

Educational practitioners, administrators and policymakers seem less convinced. Educators and educational administrators appear to remain generally antagonistic towards educational rate of return studies. Educational policy-
makers seldom seem to pay more than perfunctory attention to these studies, taking them into account when they offer support for policy decisions, ignoring them when they do not. Common to all of these groups is a feeling that the summary statistic embodied in an educational rate of return measure does less than full justice to the task of quantifying the benefits (net of costs) involved. While educational economists may be well aware of the strengths and shortcomings of the rates of return estimates they present, there is a tendency to offer the results in a rather cavalier fashion, not always sufficiently underlining the caveats that should accompany any policy conclusions to be drawn from rates return studies.

With the development of more comprehensive approaches towards human resource development, manpower training and development programmes too have increasingly become the subject of rates of return appraisals. How should administrators and policymakers in the training field react to such studies, particularly when they seem to have clear implications for training policy? Ignore them or under pressure, though possibly begrudgingly, implement the policy changes indicated? Clearly, neither approach is satisfactory. In particular, it is contended that the standard ceteris paribus framework underlining rates of return measures may be overly restrictive in societies subject to institutional change and centralized policymaking, with the result that the findings of the usual form of rate of return study may be an unsure guide for policy. Rather, measured rates of return should be scrutinized against the backcloth of on-going or possible macro-economic and institutional change. This may well be an important consideration for developing countries,
where training project investments are likely to be appraised alongside on-going institutional change, and where a more comprehensive focus is called for. Such changes may themselves have an impact on training project profitability and manpower training interests may be able to exert some influence on the course that they take.

In this paper we shall argue that measured social rates of return may require correction prior to use in policy formulation, for two very different sets of reasons. In section 2 we consider the effect on measured social rates of return of the general failure to incorporate externality effects (on third parties). Section 3 considers institutional, public policy and macro-economic factors that act as impediments, militating against higher rates of return. Some conclusions for policy are offered in the concluding section.

2. **Measurement shortcomings: omission of externality effects of training.**

Measured rates of return on education and training - both private and social rates of return - are usually confined to the direct effects on the individuals concerned. We will not rehearse here in detail the technical problems involved, such as the problems of converting cross sectional earnings data to lifetime profiles, or the failure to measure non-monetary direct benefits, and the question, for social rates of return measurement, whether in practice wages adequately measure the marginal productivity of workers. These issues have been well documented in the now voluminous literature on educational rates of return. Rather, emphasis will be placed on some of the deficiencies of these measures as they relate to policy.
Of the two measures, the private rate of return is regarded as the more robust. It is a straightforward measure that compares the individual's earnings gain from investment with the costs involved. Social educational rates of return purport to compare the benefits accruing to society as a whole, with the costs; they represent an application to the educational/training field of the wider discipline of social costs benefit-analysis (CBA). Yet the need for the CBA of a project (or institution, or legislation etc.) arises because of a divergence between the narrow, private profitability for those undertaking the project and the wider benefits and costs as they affect third parties (society as a whole). Thus to take two well-known British examples drawn from the transport field. The Victoria underground line in London was justified because of the size of externality benefits accruing to third parties (mainly travel-time savings) even though the London Transport Authority stood to lose financially from the project. Again, the decision on the siting of a third London airport centered on the question of noise and other environment costs.

Measured social rates of return to education and training, however, are a far cry from such full-bodied CBAs. Measured social rates of return differ from private ones essentially in the following regards: (a) on the benefits side, they utilize pre-tax earnings differentials (as a not always satisfactory measure of increased outputs) rather than post-tax earnings, and (b) on the side of costs, full resource costs of education (including imputed rents) are used rather than private expenditures (mainly fees) less scholarships and grants. Yet these differing procedures reflect the particular taxation methods, education financing and property ownership arrangements in
force rather than the more fundamental differences between the individual and
the societal viewpoints that lay at the heart of CBA.

Let us envisage, instead, a society that raised state revenues
through, say, a window tax rather than by income taxation, that did not
subsidize education, and in which all buildings and capital equipment used in
the education process were rented rather than owned. Under these particular
institutional arrangements, social rates of return as customarily measured
would equate to private ones; but are we to believe that they are really
equivalent? Those who do not believe so, must hold that externality effects
are both present and of quantitative significance: by implication rates of
return practitioners deny either or both of these propositions. Blaug, in his
new classic text on the economics of education, comes to such a negative
conclusion with regard to the externality effects of education, apart from what
he calls "atmospheric effects" (such as inculcating social values and the
passing on, from one generation to the next, a society's cultural heritage).
These, however, are unlikely to be significant for training programmes.

On the other hand, there may be certain externality effects, that are
lacking for general schooling, but which may be extremely relevant for
programmes of training, with their strong labor market orientation. Two rather
different forms of externality effects of training may be distinguished: we
may refer to these as job-related effects and more general macro-economic
effects.
Job-related effects

These have received considerable attention in the extensive literature relating to the evaluation of government training (and retraining) programs. Follow-up studies of individuals who have completed courses of vocational training seldom pay attention to the setting within which they are absorbed into employment. To the extent that these workers are placed in jobs that others held, or (more probably) fill vacancies that could have been filled by others in the absence of training, then a displacement effect occurs. This will result in either zero net benefits of training (since training does not result in any increase in output) or, at least, in reduced net training benefits (if the trainee has a higher marginal product than the non-trainee). Here, measured rates of return overstate the net benefits of training.

It is frequently found in a follow up studies that substantial numbers of trained workers fail to work in their training skill, a factor increasing the possibility of displacement, in this case of unemployed non-skilled workers who would otherwise be absorbed into jobs.

A parallel replacement effect occurs when the jobs held by trainees are now filled either directly by the unemployed or are taken by other employed workers, whose vacated jobs in turn create employment for hitherto unemployed workers. Replacement lowers the social (though not the private) costs of training and raises the benefits. In the case of instantaneous replacement, the social opportunity costs of training, in the form of output forgone, would be zero and the output benefits would be measured by total post-training
earnings of trainees, rather than by earnings differentials as is current practice. The presence of replacement effects would imply underestimated social rates of return to training.

An additional form of job-related benefits of training may result when training, in providing additional workers with relatively scarce skills, leads to the employment (or enhanced production) of complementary workers by the easing of these skill bottlenecks. These induced employment effects will be stronger in situations where the elasticity of substitution between skills is low; clearly they raise true social rates of return.

There can be little doubt about the existence of these job-related externalities; whether they are sizeable or not however (and this will depend on the particular situation), is a matter of empirical verification. There have been only a few attempts to probe these issues, either by direct estimation at the level of the firm or by sensitivity analysis for feasible values of these effects. On the other hand there will less agreement about the status of the more general macro-economic externalities of training programmes, to which we now turn.

Macro-economic externalities

The availability of a skilled labor force may make a contribution to the attainment of the macro-economic goals of society, or at least to those enunciated by the government as its representative: this will be over and above the direct output benefits stemming from (and mainly captured by) the trained
workers themselves. These macro externality benefits have been said to stem from such goals as:

(i) Improving the trade-off between inflation and unemployment. This is a controversial area, but two general points may be made. To the extent that manpower training programmes are pursued (as part of a general "active manpower policy") in order to obtain these stabilization goals, the question arises whether this is a cost effective method of doing so. Secondly, in many countries training programmes may not be sufficiently sizeable to have an impact here.

(ii) Strengthening export-related industries, thus contributing towards the mitigation of balance of payments problems, scarce foreign exchange and self-sufficiency objectives. Again, the caveats noted under (i) apply.

(iii) Providing reserves of skilled and technical manpower to engine the process of growth and industrial change, particularly in potentially fast growing high-technology sectors. Here there may be some evidence of market failure in the sense that firms as a whole may not always be willing (or farsighted enough) to ensure a sufficient intake of trainees in transferable skills vital to the economy, i.e. to meet national long-term needs rather than their own particular requirements.
A central point that must be emphasized with regard to all of the externality effects listed above is that their size is not a datum but is very much contingent upon pursuance of appropriate training policies (within the given institutional and macro-economic setting).

Take for example, displacement and replacement: since these two effects work in opposite directions for any given labor market situation some difficulty may arise in interpreting their net influence on the social profitability of training. In generally tight labor market conditions, low replacement coexists with low displacement, whereas when labor markets are slack, both replacement and displacement will be high. In order to raise the societal profitability of manpower training, such programmes should be directed to particular situations (spatial or temporal) where contrasting labor market conditions prevail: unskilled unemployment coexisting with a marked shortage of workers with particular skills. Then by concentrating training on these scarce-skill occupations, not only is production forgone during training low (because of low replacement) but also benefits are large (as displacement is minimal) and, possibly, induced output effects are present as well.

Similarly, the macro externality benefits are not just "out there", simply requiring measurement. Rather, deliberate action by policy-makers may be reeded, both to activate and augment these externalities, with a concomitant effect on the true rate of return to training. To improve the inflation-unemployment trade-off will require deliberate policies to deal with "mismatch", in particular to reduce inequalities in the extent of disequilibrium across various labor markets, differentiated in terms of skill
level, region, or industry. The strengthening of the export sector will require the provision of courses in the particular skill, levels and locations necessary. The provision of potentially short supply skills necessary for growth and change is contingent upon their identification sufficiently ahead of time and the taking of appropriate steps to ensure that the necessary training is undertaken.

Equity issues

The preceding discussion of the externalities of training has been concerned with some of the job-related and macro-economic effects (the list could, of course, be extended). No mention has been made thus far of the equity implications of manpower training programmes; yet, in some sense these too could be regarded as a form of externalities.

Consider two alternative investment projects, A and B, which yield equal net benefits (in terms of usual CBA measurement, including externalities). If the equity (income distribution) implications of A were deemed less desirable than those of B, it is clear that society would prefer project B. Now the direct beneficiaries of manpower training programmes (both participants and their families) may be largely drawn from various socio-economic groups that society deems to be particularly deserving. It might feel that an extra dollar received by a member of an underprivileged group would give greater social utility than the same sum accruing to the better off. Hence training programmes which may have significant, positive equity
implications (in comparison with some alternative programmes) offer a form of externality benefit to society as a whole.

Can these be incorporated into, and thus raise, measured rates of return on training programmes? Most CBA practitioners confine their attention to efficiency issues, leaving aside the distributional implications (equity effects) of projects and programmes under scrutiny. There is however a minority view that feels it to be both necessary and possible to integrate distributional considerations within CBA. This may be achieved by the use of appropriate distributional weights in summing the benefits (and losses) of all affected by a given manpower training programme, fixed according to how deserving (or undeserving) society (or the policy maker) regarded each group to be. Such adjustments would tend to raise the measured rates of return on training programmes vis-à-vis university education, though not necessarily in relation to primary education.

3. **Changing the macro-economic and institutional context.**

Thus far we have considered rates of return within a given institutional context and with macro-economic policy fixed exogenously. This is in line with conventional CBA practice of regarding these as given, though we have seen that training programmes may themselves impinge on this given economic and institutional environment.

Training however may be more effective in other alternative macro-economic, institutional, or policy settings. We now consider various external
constraints to the effectiveness of training programmes. In doing so, we reverse our line of argument; rather than looking at how training may impinge on the wider economic and social environment (e.g. externalities), we consider how changes in the latter may lead to more (or less) effective programmes of manpower training.

It may be useful to distinguish between those settings or factors militating against societal profitability of training, that relate directly to existing Government policy (or the lack of it) and those that are generally outside the Government domain. In both spheres there may exist a potential policy role that could lead to higher social rates of return to manpower training but which may not be feasible or desired in all situations.

**Government policies**

We consider first various Government policies that affect social rates of return to training. The most obvious relates to the overall management of the economy and, in particular, to the generation of unemployment. In general, unemployment negatively affects rates of return. Placement of trainees will be difficult, with consequent loss of potential output; if workers are pressed to accept non skill-related jobs, then the (incremental) output benefits of training are lost. In both situations, displacement may be high, leading to further output losses. Against this, output forgone during training, and therefore societal costs of training, will be low (though this may not offset the output losses). If unemployment was due to poor macro-economic management, then awareness of these negative effects on
the training sector may highlight further the desirability of achieving better macro management practice.

On the other hand, unemployment may be the result of deliberate Government policy, in the pursuance of other macro-economic objectives. In this case, documentation of these negative affects could lead to a policy reversal: at the least, the decision maker should be made aware of the implications (in the training sphere) of policies being pursued.

Where unemployment is cyclical, it might be possible to achieve a significant improvement in social rates of return by concentrating training more in periods of economic downturn (when costs are low), with training reaching completion at the start of the upturn (high replacement, low displacement). Such precision may not be achievable in practice, and new graduates of training programmes may find themselves without employment. Alternatively, as a means of lowering both unemployment and the social costs of training, training courses may be offered to the unemployed, even though no immediate job prospects are on the horizon. This policy of low cost "training for the shelf", however, may not prove to be socially efficient. Training skills, if not utilized, dissipate over time, so that when placement is eventually achieved training effectiveness may have been diminished, with consequently low realized rates of return on these programmes. Moreover, there are likely to be available alternative, more cost-effective measures for dealing with the unemployed.
Our discussion of the interface between unemployment policy and the social profitability of training serves to illustrate some of the main implications of situations where economic or social policies, established outside the manpower training framework, may affect the social profitability of training. There are those policies, not directly related to training, that serve to raise the social profitability of training and there are others that do the opposite.

As an example of the former, we may take legislation aimed at countering discriminatory hiring practices of employers: such policies are promulgated usually with equity considerations in view. In addition to the desired effect on minority employment, there will be very clear, and positive, implications for training profitability if trained minority workers are thereby able to secure jobs, hitherto denied them, that are commensurate with their acquired skills. Output will rise as will the social returns on this training. An awareness of the benefits in the training sphere stemming from anti-discrimination measures, will buttress the case for such legislation, which if enacted will raise the rate of return to the training programmes.

On the other hand, there are instances of the opposite tendency: here policies pursued by Government affect, negatively, the social profitability of training. An example is afforded by policies taken to engender a more rapid rate of technological change, as the engine of faster economic growth. To the extent that these policies may accelerate the rate of skill obsolescence, they will lead to lower realized social rates of return than if these policies were not being undertaken. It is possible (though, in
this case, unlikely) that a CBA reconsideration that included these negative effects could lead to policy reversal. If not, then the training sector should regard these external policies as a constraint and formulate appropriate responses to mitigate the negative effects (and raise social profitability): in this case, perhaps, by giving more attention to the need for flexibility and general skills in the training process.

Finally, alternative policies may be available to the Government in pursuing a given objective, which however exert differential effects (either negative or positive) on training profitability. Here, efforts should be made to persuade policy makers to adopt that alternative which minimizes the costs (or maximizes the benefits) accruing to the training sector. Returning to the anti-discrimination example: legislators may be vying between equal wage legislation and the equal job-opportunity measures considered above. The latter may be expected to raise social rates of return on training more than the former; if so, these differential benefits should be emphasized, and attempts made to steer legislation in the appropriate direction.

Factors outside the Government domain

We turn now to those institutions impinging upon training profitability, that lie outside the Government domain. The role of Government here is clear: to encourage those that lead to enhanced training profitability to society and to mitigate the negative effects stemming from those that do not. As an example of the latter, we consider the deleterious effects on training profitability of the restrictive practices of labor unions.
The maintenance of outmoded demarcation lines between traditional skills may give rise to sizable output losses as newly, more broadly trained workers are prevented from working in job situations that utilize their wider skills to the fullest. Union insistence on overlong apprenticeship periods of five years or more may raise training costs to employers (though this might be more than offset by low wages costs). Moreover, unions frequently oppose, successfully, the hiring of workers (so-called "dilutees") that have been trained in newer, external modes that are both cheaper and of shorter duration than the traditional apprenticeship. These various activities, stemming from a desire to protect union vested interests, lead to lower realized rates of return on training.

Unions exist primarily to protect and enhance the well-being of their members. This, frequently, can be achieved only at the expense of non-member groups, in the present case trainees, graduates of various training programmes and employers. The Government may play a role in lessening the negative impact of union activities on training profitability: certification, legislation, the encouragement of "responsible leadership" amongst union officials afford examples of such action. However, the efficacy of such interventions will be limited by such factors as the extent of the clash of interests between the parties involved and the political and industrial strength of unionized labor.

Finally, the general "climate of opinion" may act as a constraint on training profitability. We have discussed a number of instances where society is denied the full output potential of trained workers, thus lowering social
rates of return. But potential output itself may be unduly low, for two main reasons: the inputs to the training process may not be of high quality, and the training process itself, particularly in-service training, may be less than fully effective. We consider each in turn.

Potential output of trainees may not be high, simply because of low trainee quality. For a number of reasons, potential trainees of higher ability tend to shun courses of vocational training. Some of these are objective: in particular, expected private rates of return to such courses may be low, the result of inter-occupational and sectorial wage distortions, which in turn may stem from misdirected Government labor market policies. But they may also be subjective: negative attitudes of potential trainees (or their parents) towards blue-collar occupations, which may be corrected by appropriate Government interventions.

The training process itself may not be of high quality, again leading to low potential output of trainees. In many firms the personnel function does not carry high status, and within it training is often neglected and of low calibre. One of the merits of carrot-stick type training levy-grant schemes is that they do raise the level of training consciousness in the firm, leading to an upgrading of the training function, and a consequent raising of training quality. Training, to be effective, requires appropriate complementary inputs, which may be lacking. Finally the productive use of skills requires appropriate tools, efficient production processes and good management; again, these may not be in place.
4. **Policy implications of rate of return measures: some conclusions.**

There is a tendency for policy makers in the field of manpower training, if they do take training rates of return studies seriously, to overreact to these measures. If the measured rates of return on a training programme is lower than that available from alternative projects, this finding is normally taken to indicate that the programme should be dropped or contracted. This paper has argued that the policy implication of low measured rates of return on a given training project or facility, in relation to alternatives, is not necessarily contraction, let alone closure. (High rates of return, similarly, should be treated with caution). Rather, faced with low rates of return on an existing or planned training project, the policy maker should attempt to draw out the implications of this finding by ascertaining the answers to a series of questions:

1. Are the rates of return low because of unduly high costs or low returns, or because of inefficiencies in the training process itself? Probing along these lines, may indicate feasible areas for policymaker intervention to improve the overall economic effectiveness of training programmes.

2. Have externality effects been included in the rate of return measure? Is there scope for raising the contribution to training profitability of externalities, by appropriate measures, along the lines outlined above?
3. Has adequate account been taken of the full array of institutional and policy changes currently underway? What changes in the current policy menu can be made in order to raise training profitability. Are these feasible? Are they cost effective?

Probing these issues may help the policy maker to identify appropriate lines of action that could be taken to raise the rates of return or the training programme to acceptable levels. Such a process of positive feedback is likely to constitute the most cost-effective use of rate of return measures.