

*Fiscal Studies* (1997) vol. 18, no. 1, pp. 73–85

# ***A Cost–Benefit Approach to the Evaluation of Regional Selective Assistance***

KIM SWALES\*

## ***Abstract***

The ‘Green Book’ and the recent EGRUP report support exchequer cost per job as a key input in the *ex-ante* appraisal of individual applications for Regional Selective Assistance (RSA) and the *ex-post* evaluation of the RSA scheme as a whole. In this paper, following a recommendation in the House of Commons Trade and Industry Committee’s report on regional policy, the merits of an alternative, explicitly cost–benefit, framework are outlined. This approach incorporates the administration and compliance costs of the subsidy, costs at present ignored in RSA evaluation studies. An optimal *ex-ante* appraisal rule is developed. This takes the form of a cost-per-job ceiling, and a representative value is calculated for this figure.

*JEL classification:* H20.

## **I. INTRODUCTION**

In 1988, Regional Selective Assistance (RSA) became the main instrument of UK regional policy. Since 1990, government guidelines have been issued for both the *ex-ante* appraisal of individual applications for RSA and the *ex-post* evaluation of this type of assistance programme. These guidelines have been published in the

---

\*Fraser of Allander Institute and Department of Economics, University of Strathclyde.

This paper is part of ongoing work on selective subsidies which has benefited from discussion with, and comments and criticism from, Darryl Holden, Neil Jackson, Bill McNie, Jonathan Slow, Julie Warnock and participants at presentations of this paper and related papers to the Scottish Economic Society Annual Conference, Aberdeen, April 1995; to the Industry Department for Scotland, August 1995; and to the ESRC Urban and Regional Seminar Group, Downing College, Cambridge, January 1996. The author would also like to acknowledge valuable comments from three anonymous referees.

'Green Book' (HM Treasury, 1991) and the report of the interdepartmental Evaluation Group on Regional and Urban Programmes (EGRUP) (HM Treasury, 1995). In addition, there have been two government-financed *ex-post* evaluations of the operation of the RSA programme for the time periods 1980–84 and 1985–88 (King, 1990; PA Cambridge Economic Consultants Ltd, 1993) and a further evaluation is under consideration. It is therefore timely to review the appraisal and evaluation criteria that have been adopted.

There is some ambiguity over the official rationale for UK regional policy in general, and RSA in particular. The statutory authority for the RSA scheme comes from section 7 of the Industry Development Act 1982. Whilst subsection 2 gives a number of 'purposes' for which RSA can be used that have a developmental aim, King (1990, p. 11) argues that the 'principal objective of the scheme has come to be seen as being defined by the *constraint* imposed by Subsection (1)', which is that RSA is restricted to situations where it is likely 'to provide, maintain or safeguard employment in any part of the assisted areas'. Therefore, although there is some uncertainty concerning the underlying problem that RSA is attempting to alleviate, a primary aim is the generation of additional assisted-area jobs, and it is on this basis that RSA is evaluated.

## II. PRESENT *EX-ANTE* APPRAISAL CRITERIA

The Green Book gives four *ex-ante* criteria for a project's eligibility for RSA: 'project additionality; project viability; national efficiency; and cost effectiveness in achieving policy objectives' (HM Treasury, 1991, p. 69). Project additionality is the requirement that the project would not go ahead without assistance,<sup>1</sup> and project viability that both the recipient firm and the project should be viable once subsidies are taken into account. The national efficiency requirement is essentially a cost–benefit hurdle, meaning '... that if all inputs and outputs could be correctly valued and discounted at an appropriate rate the project should have a positive NPV [net present value]' (HM Treasury, 1991, p. 70). Finally, the cost-effectiveness condition is simply the enforcement of an exchequer-cost-per-job limit.

The additionality and national efficiency criteria together make up a coherent cost–benefit appraisal scheme for a selective subsidy. These rules imply that the government should only subsidise projects that are not viable when valued at market prices but that are viable when all relevant inputs and outputs are valued at the appropriate shadow prices.<sup>2</sup> Essentially, a cost–benefit evaluation of a

---

<sup>1</sup>A degree of additionality also applies if the project would have gone ahead but on a smaller scale or at a later date.

<sup>2</sup>One function of RSA is as a flexible source of aid for attracting inward investment. This form of investment can be both profitable and additional, in that without the aid the firm would have located outside the UK. The appropriate extent and form of aid for these types of project are an interesting topic, but one that raises rather different issues from those tackled in this paper.

particular project is similar to a commercial evaluation in that the project's initial costs should be set against the stream of future net benefits that the project will produce, where the future net benefits are discounted back to the present using an appropriate discount rate. The net present value (NPV) of a project is then the difference between the discounted future net benefits and initial costs.<sup>3</sup> However, cost-benefit differs from a commercial appraisal in the following ways. First, the market prices for some inputs or outputs will be replaced by so-called shadow prices where it is thought that the market does not properly value those inputs or outputs.<sup>4</sup> Second, effects that are associated with the project that are not captured through an existing market should be incorporated into the evaluation.<sup>5</sup>

The fact that the joint imposition of the additionality and national efficiency criteria implies a consistent cost-benefit evaluation is encouraging because the EGRUP guidelines maintain that regeneration programmes should offset some form of market failure (HM Treasury, 1995, p. 4) and cost-benefit is the appropriate technique to use where market failure is present. It is precisely under conditions of market failure that shadow prices will diverge from market prices. However, the Green Book does not detail how shadow prices might differ from market prices for the type of project aided by RSA and therefore does not specify the nature of the market failure that RSA is designed to tackle. But one form of market failure is ruled out explicitly in the Green Book: 'Because of crowding-out at the macroeconomic level, effects on employment ... should not be included as benefits of projects in an efficiency test' (HM Treasury, 1991, p. 70). This recommendation appears to be based on the notion that market wages provide the best measure of the opportunity cost of labour.

That a cost-benefit appraisal of a project designed to create regional jobs cannot count these additional jobs as a benefit in their own right appears internally inconsistent. In its *ex-post* evaluation of the RSA scheme as a whole, PA Cambridge Economic Consultants Ltd (1993, p. 70) argues that 'The market failure which RSA is aiming to address is essentially the failure of regional labour markets to adjust', though its evaluation is undertaken following the Treasury assumption that no additional UK jobs are created. The rationale for this Treasury view is unclear. The official position on regional and urban regeneration programmes is that crowding-out at the national level should be set at 100 per cent, unless there are supply-side improvements (HM Treasury, 1995, p. 29). But surely a central aim of RSA is to bring about such supply-side improvements.

---

<sup>3</sup>This is on the assumption that costs occur at the start of the project and the benefits flow over the project's life. However, where costs are distributed over time — for example, where RSA is delivered in stages — these costs should be similarly discounted.

<sup>4</sup>A special case of this involves the rate of time discount where the intertemporal shadow price can differ from the intertemporal market price.

<sup>5</sup>For more detail on the cost-benefit technique in general, see Layard and Glaister (1994). For the use of cost-benefit in the evaluation of spatial issues, see Schofield (1989) and Wiewel, Persky and Felsenstein (1994). Also, much of the Green Book concerns the operation of cost-benefit principles in public sector evaluation (HM Treasury, 1991).

Again, if there is no labour market failure, what is the identity of the market failure that RSA is designed to counteract? There is a hint in the Green Book (HM Treasury, 1991, p. 70) that failure in the capital market can be used to support RSA applications, though the spatial aspect of this market failure is not identified. Even if one did not believe that national employment gains could be made through the application of regional policy, the notion that the government has a policy to redistribute employment regionally implies that, at the margin, it values jobs in some parts of the country more highly than jobs in others. These differential weights should be incorporated in the cost–benefit calculation.

The additionality and national efficiency criteria amount to a cost–benefit requirement; the viability and cost effectiveness criteria yield an additional cost-per-job condition. This is that the RSA payment should be the minimum consistent with the project’s viability and that, with the subsidy at this level, the project’s exchequer cost per job must fall below some unspecified ceiling. Project cost per job is calculated as the gross public expenditure per net job created. At face value, this is a very partial measure as it only incorporates the public sector cost of the subsidy. No explicit account is taken, for example, of private sector compliance costs, and no attempt is made to discover the resource costs of the subsidy. Of equal importance, there is no discussion of the way in which the cost-per-job limit is fixed. Clearly, the lower the cost-per-job ceiling, the fewer projects will be aided, but there is no consideration of the determination of the optimal number of aided projects.

### III. A CONSISTENT COST–BENEFIT APPROACH

In short, at present, an aided project must clear both a cost–benefit and a cost-per-job hurdle. As currently formulated, both of these measures are flawed. Also, there is normally no possible trade-off between them: a project with a high NPV will be rejected if it does not generate enough jobs, and similarly a project that generates jobs at a low exchequer cost will be rejected if it does not yield a positive NPV.<sup>6</sup> However, elements of these two measures can be combined to form a consistent, coherent and operational method that could be used as a basis for both the *ex-ante* appraisal of individual RSA applications and the *ex-post* evaluation of the RSA programme as a whole. The central aim of this paper is to trace out the implications of adopting such a strategy. This strategy is to maintain the broad cost–benefit approach, but to amend it in two ways. First, additional employment should be valued directly as a benefit or, equivalently, some or all labour should be costed at a shadow wage below the market wage. Second, the private compliance, public administration and tax-raising costs involved with conducting and financing the policy should be incorporated explicitly in the evaluation

---

<sup>6</sup>The Green Book argues that there may be trade-offs at the margin but refers to these as exceptional (HM Treasury, 1991, p. 69).

(Swales, 1989, 1995a and 1995b). This is an extension and refinement of the way in which cost–benefit techniques are used at present in the appraisal and evaluation of regional policy and is offered as a response to a recommendation of the House of Commons Trade and Industry Committee in its recent report on regional policy (House of Commons, 1995).<sup>7</sup>

A project uses capital and labour,  $K$  and  $L$ , to produce an output,  $Q$ , per period for  $n$  periods. Taking the output price as numeraire and the market rentals for capital and labour as  $w$  and  $r$ , the additionality condition implies that, for the project to attract a subsidy,

$$(1) \quad Q - Lw - Kr < 0 .$$

If the project passes this criterion, it will not go ahead without the subsidy, and the viability condition is that this subsidy,  $S$ , should be the minimum required for the project to be profitable for the firm. Thus

$$(2) \quad S = (Lw + Kr - Q)R_n + C_c$$

where  $C_c$  is the firm's total compliance costs (the initial cost of the subsidy application and the costs of subsequent compliance with the subsidy regulations)<sup>8</sup> and

$$R_n = \frac{(1+i)^n - 1}{i(1+i)^{n-1}}$$

so that  $R_n$  is the NPV of £1 per period discounted over  $n$  periods at a discount rate  $i$ . The viability condition therefore sets the subsidy level equal to the discounted value of future losses plus the firm's compliance costs. Finally, the national efficiency (cost–benefit) criterion can be identified. This should be based upon the net increase in activity in the region. This is made up of three elements: the direct, displacement and multiplier effects. The direct effect is the increase in activity in the aided project. Displacement is where regional activity in existing plants is reduced as a result of competition from the aided project. Such competition can occur in either the commodity or factor markets. Third, the multiplier effect

---

<sup>7</sup>The recommendation was that 'the DTI examine how the techniques and concepts of cost benefit analysis could be incorporated into the evaluation of regional policy' (House of Commons, 1995, p. lxxi). The official response is given in Department of Trade and Industry (1995, p. 18).

<sup>8</sup>I assume here that if the government wishes to support the project, it will make an offer of RSA that covers all the firm's compliance costs. Given that some of these costs are sunk, the government does not strictly need to do this. However, if it fails to cover the sunk costs, no firm that requires the subsidy would apply because the firm would never recoup its initial compliance costs. I am therefore effectively assuming that the government can successfully overcome this moral hazard problem (Swales, 1995b).

measures any increase in regional activity through intermediate input linkage and Keynesian consumption multiplier processes.<sup>9</sup>

Before moving to the full cost-benefit appraisal, it is necessary to confront a potentially troublesome issue. This is that civil servants make mistakes when appraising the profitability of applicant projects. The most recent *ex-post* evaluation of the RSA programme estimates that the degree of ‘additionality’ associated with RSA is only 48 per cent. That is to say, 52 per cent of the employment in assisted projects would have gone ahead anyway without RSA payments (PA Cambridge Economic Consultants Ltd, 1993, p. 46). There is a clear problem of asymmetric information with discretionary subsidies which is difficult to analyse fully (Rasmusen, 1994). The approach I adopt is extremely simplistic. For all projects judged by the civil service to require a given subsidy, a proportion,  $a$ , will be additional and will require the precise estimated subsidy to proceed, whereas the remaining proportion,  $1-a$ , are non-additional and would have gone ahead anyway without any subsidy. Under these conditions, the cost-benefit condition becomes

$$(3) \quad NPV = a(\bar{Q} - \bar{L}w^* - \bar{K}r)R_n - b_a C_a (1 + t) - b_c C_c - St \geq 0$$

where  $w^*$  is the shadow wage,  $\tau$  is the proportionate cost of raising taxation,  $C_a$  is the government’s project administration costs,  $\beta_a$  and  $\beta_c$  are the proportions of the administration and compliance costs that are related to monitoring the project’s progress, rather than presenting and evaluating the initial project submission, and

$$\begin{aligned} \bar{K} &= K + K_m - K_d, \\ \bar{L} &= L + L_m - L_d \\ \text{and } \bar{Q} &= Q + Q_m - Q_d \end{aligned}$$

where the subscripts  $d$  and  $m$  identify inputs and output associated with the displacement and multiplier effects respectively. Expression (3) implies that the government should accept all projects that show a positive NPV using this procedure.

It will be useful to make a number of preliminary observations on the details of this approach. First, I have incorporated into the cost-benefit analysis the cost of raising the taxation to cover the direct subsidy payments and the government administration costs. This reflects the position taken in the Green Book that expenditure on non-additional projects ‘would be an unacceptable use of public funds, providing income transfers, the financing of which would impose distortionary costs on the economy’ (HM Treasury, 1991, p. 69). However, the

---

<sup>9</sup>More details on the nature of these indirect displacement and multiplier effects are given in Armstrong and Taylor (1993, ch. 1 and ch. 14).

incorporation of tax-raising costs is not standard procedure in UK public sector cost–benefit evaluation and, as we shall see later, there is no official figure for the administrative and distortionary effects of raising taxation. The reader can set the value of  $\tau$  equal to zero if he or she wishes and this has no qualitative effect on the analysis.

Second, equations (2) and (3) embody the assumption that all the various costs occur at the beginning of the project. This is not strictly true. For example, many projects receive RSA in stages, which clearly spreads all the administration, compliance and tax-raising costs more evenly over time.  $C_a(1+\tau)$ ,  $C_c$  and  $S\tau$  are therefore more properly thought of as the NPV of the stream of administration and compliance costs over the whole life of the project.

Third, in equation (3), the only input with a shadow price that differs from the market price is labour. In particular, the capital market is taken to be both perfectly competitive and integrated across space. Although this is a conventional assumption in regional analysis, its use might be more debatable in the appraisal of discretionary subsidies because of information asymmetries implicit in the capital market which a discretionary subsidy could be designed to counter (Milgrom and Roberts, 1992). Equation (3) can be adjusted in a straightforward way to incorporate as many inputs as are required and each can be entered with a shadow price different from its market price. However, later in this paper — where the cost–benefit appraisal is linked to the cost-per-job ceiling — the primacy of the shadow wage on labour is crucial.

Fourth, expression (3) includes only a proportion of the administration and compliance costs. This equation is used to determine the rules that civil servants should follow when deciding whether to accept or reject an application. At this point, the initial administration and compliance costs associated with making and appraising the application are sunk. They must be met even if the application is turned down and therefore should play no part in the *ex-ante* criteria. Only the proportion of administration and compliance costs related to monitoring the project are included in the NPV calculation.

#### **IV. THE COST-PER-JOB CEILING**

There are strong arguments in favour of adopting a cost–benefit approach. Cost–benefit is a practical evaluation technique that is firmly rooted in sound economic principles. It is not esoteric or obscure. It is routinely taught in undergraduate economics degrees and its strengths and weaknesses are therefore very well known. Moreover, as a framework generally recommended by the Treasury for the evaluation of public expenditure projects, it is familiar to administrators in the civil service. However, a counter-argument might be that such a procedure would be impractical to implement: civil servants do not have the time to undertake a full cost–benefit analysis on each project seeking support. However, for a standard project that runs unaltered for a fixed number of years and has labour as the only

input valued at a shadow price, it is possible to derive a very simple decision rule from the cost–benefit criterion outlined above. Perhaps surprisingly, this decision rule takes the form of an exchequer-cost-per-job ceiling.

I make the conventional assumption that the additional activity generated by the multiplier process and displaced activity in competing firms is unaided and makes no excess profits, so that

$$(4) \quad Q_j = L_j w + K_j r \quad \text{where} \quad j = m, d.$$

Substituting this expression, together with equation (2), into equation (3) gives the following decision rule:

$$(5) \quad NPV = aL(1-d)(1+m)(w-w^*)R_n - (1+t)b_a C_a - (b_c - a)C_c \\ -S(a+t) \geq 0$$

where  $d$  is the ratio of displaced to subsidised employment and  $m$  is the employment multiplier.

Expression (5) can be used to derive the welfare-maximising subsidy limit,  $S_{\max}$ , for any particular project. If this figure is divided by the net employment increase, the result is the exchequer-cost-per-job ceiling,  $\sigma_{\max}$ , which I wish to express as a proportion of the wage. For consistency with the present Green Book guidelines, the net employment increase in this context takes into account displacement but not multiplier effects (HM Treasury, 1991, pp. 70–1). Why the Treasury does not incorporate multiplier impacts in this calculation is unclear. It will also simplify the exposition, and allow a presentation that is consistent with data availability, if the administration and compliance costs are given as proportional to the total subsidy payment.

The marginal project is one in which the NPV equals zero. Rearranging the expression for the NPV (equation (5)) after imposing this equality generates the result

$$(6) \quad s_{\max} = \frac{S_{\max}}{Lw(1-d)} = \frac{a(1+m)(1-I)R_n}{a+t + (1+t)b_a c_a + (b_c - a)c_c}$$

where  $I = \frac{w^*}{w}$ ,

$$c_a = \frac{C_a}{S}$$

and  $c_c = \frac{C_c}{S}$ .



This means that a project should attract RSA if and only if the minimum subsidy consistent with viability produces an exchequer cost per job that is less than a proportion,  $\sigma_{\max}$ , of the wage. It must be stressed that this is not an *ad hoc* measure, loosely justified by the rationing of government expenditure. Rather, it is a decision rule, solidly based on cost-benefit principles, which takes into account the costs of the subsidy policy to both the firm and the taxpayer.

$\sigma_{\max}$  will vary across different types of project, so that civil servants would require some form of ready reckoner to determine the appropriate cost-per-job ceiling. However, it will be useful to venture an estimate of a representative value of  $\sigma_{\max}$  for assisted-area projects in the UK. It is perhaps surprising, given that there have recently been two major evaluations of RSA, that the values of many of the key parameters required for such a calculation are still a matter of conjecture.

The parameter values required to calculate the cost-per-job ceiling are given in Table 1. The calculation is made for a project that will run unchanged for 10 years, so that  $n = 10$ . This is the time horizon recommended by the EGRUP report (HM Treasury, 1995, p. 31) for assessing the final impacts of regenerative programmes. In the Green Book, the proposed rate of discount for public sector projects in general is 6 per cent, though for appraising industrial assistance cases, a rate of at least 8 per cent is recommended (HM Treasury, 1991, p. 70). However, in the most recent *ex-post* evaluation of the RSA programme, 6 per cent is used and, for consistency with this study, I adopt  $i = 0.06$ , which gives a value for  $R_n$  equal to 7.80.<sup>10</sup> There appear to be no recent figures for the public administration costs of RSA. King (1990, p. 17) reports values taken from a DTI exercise for the financial year 1981–82 (Coates and Appleton, 1983), suggesting a public administration cost for RSA of 5 per cent of the value of the grant, so that  $c_a = 0.05$ . There are apparently no estimates of the firm's compliance costs,  $c_c$ , for RSA. However, Sandford, Godwin and Hardwick (1989) claim that, for general taxation, the private compliance costs are, on average, twice the size of the public administration costs. In the absence of more reliable information, this is the assumption adopted here. Therefore  $c_c = 0.10$ . The proportion of the administration cost that is spent on monitoring, rather than on the initial appraisal, is estimated by King (1990, p. 17), using data from Coates and Appleton (1983), as 40 per cent, and again, lacking other information, I have

---

<sup>10</sup>For  $i = 0.08$ ,  $R_n = 7.25$ .

TABLE 1  
**Parameter Values Required for Calculating the Optimal  
 Exchequer-Cost-Per-Job Ceiling,  $\sigma_{\max}$**

<i>Parameter</i>	<i>Value</i>	<i>Source</i>
$a$	0.48	PA Cambridge Economic Consultants Ltd, 1993
$\beta_a$	0.40	Coates and Appleton, 1983
$\beta_c$	0.40	Coates and Appleton, 1983
	0.65	Ashcroft and Swales, 1982 Hare, 1975
$\tau$	0.20	Sandford et al., 1989
$c_a$	0.05	Coates and Appleton, 1983
$c_c$	0.10	Coates and Appleton, 1983 Sandford et al., 1989
$i$	0.06	HM Treasury, 1991 PA Cambridge Economic Consultants Ltd, 1993
$m$	0.30	PA Cambridge Economic Consultants Ltd, 1993
$n$	10	HM Treasury, 1995

used the same proportion for compliance costs:  $\beta_a = \beta_c = 0.40$ . As argued already, PA Cambridge Economic Consultants Ltd (1993) estimates that only 48 per cent of RSA expenditure is on ‘additional’ projects, giving a value of  $a = 0.48$ . The employment multiplier is made up of two parts: backward linkages and consumption multiplier effects. PA Cambridge Economic Consultants Ltd (1993) estimates that the linkage effect increases employment by 20 per cent and that the consumption multiplier increases it by a further 10 per cent, so that  $m = 0.30$ . The cost of raising taxation,  $\tau$ , is more difficult to determine. In the Green Book, there is no discussion of the incorporation of the cost of raising public revenue into appraisal decisions. On this basis,  $\tau$  should equal zero. However, I set  $\tau = 0.20$ , which reflects the sum of the estimated collection costs (0.04) and distortionary costs (0.16) of general taxation given in Sandford et al. (1989). Finally, and perhaps most speculatively, a value needs assigning to the shadow wage,  $w$ . Ashcroft and Swales (1982) and Hare (1975) give estimates of the regional shadow wage for the 1970s for Development Areas and Scotland respectively of between 60 and 70 per cent of the market wage. Therefore my ‘best guess’ is  $w = 0.65$ , though this figure is clearly dated and subject to much uncertainty. These parameter values taken together give a cost-per-job ceiling of 2.45. That is to say, with a discretionary regional policy, the government should be prepared to pay a

maximum subsidy per employee of over twice the annual wage for a project that will operate unchanged for 10 years.<sup>11</sup>

If exchequer cost per job is a key criterion for the *ex-ante* appraisal of individual RSA applications, then it is important to argue over the appropriate level of the cost-per-job ceiling. At present, this ceiling is not public knowledge.<sup>12</sup> The value of the cost-per-job ceiling is critical because, as  $\sigma_{\max}$  increases, the number of projects accepted for RSA will rise: the minimum necessary subsidy required for commercial viability will lie below the cost-per-job ceiling for a larger number of projects. As we have seen, setting this ceiling at a sensible level requires knowledge of the value of a number of parameters, some of which, such as the multiplier, displacement level, duration of the project and shadow wage, vary across plants and locations and all of which are subject to a degree of uncertainty. The parameters used in equation (6) can be separated into three sets. First, the four parameters associated with the administration and compliance cost ( $c_a$ ,  $c_c$ ,  $\beta_a$  and  $\beta_c$ ) have a minimal role in determining the cost-per-job ceiling. Second, the value of the additionality rate, the multiplier, the discount rate and the cost of taxation ( $a$ ,  $m$ ,  $i$  and  $\tau$ ) all have a small but perceptible impact on the calculation of  $\sigma_{\max}$ . If we double the value of any of these parameters, the absolute size of the cost-per-job ceiling would change by an amount between 0.5 and 1.0. Finally,  $\sigma_{\max}$  is very sensitive to changes in the number of years over which the project runs ( $n$ ) and especially the value of the shadow wage ( $w$ ).

## V. EX-POST EVALUATION

The recent *ex-post* evaluations of the RSA scheme as a whole (King, 1990; PA Cambridge Economic Consultants Ltd, 1993) concentrate almost exclusively on identifying the average exchequer cost per additional assisted-area job generated by the programme.<sup>13</sup> However, a method similar to that outlined above could be used to develop a superior cost-benefit approach. The key difference between the discussion of *ex-ante* project appraisal and the *ex-post* programme evaluation is as follows. In considering *ex-ante* project appraisal, I have been concerned with identifying an optimal decision rule for civil servants to follow, whereas with *ex-*

---

<sup>11</sup>In the *ex-post* official evaluations, the employment gain is measured in terms of present value job years. This implies discounting the future stream of employment over 10 years back to the base year at a discount rate of 6 per cent. When this measure is used, the subsidy ceiling per present value job year is 31 per cent of the wage.

<sup>12</sup>A referee notes that to make the cost-per-job ceiling public knowledge would weaken the position of officials negotiating with companies for the minimum amount of assistance necessary to secure projects on a financially viable basis. However, a lack of a clear cost-per-job ceiling renders an application for RSA funding more uncertain for private firms, particularly those making their first application (Allen, Begg, McDowell and Walker, 1986; Swales, 1989).

<sup>13</sup>Surprisingly, the exchequer-cost-per-job measure used in the *ex-post* evaluations differs from that employed in the *ex-ante* appraisals in that the estimate of additional employment incorporates multiplier effects and the exchequer costs are adjusted for tax clawbacks.

*post* programme evaluation, one is attempting to assess an actual scheme that is likely to have been operated suboptimally. This means that the *ex-post* cost-benefit evaluation should incorporate all the administration and compliance costs associated with the programme. These include the initial application costs for both successful and unsuccessful firms and the civil service costs of the scrutiny of such applications. These costs play no part in the generation of the optimal cost-per-job ceiling for *ex-ante* project appraisals.

## VI. CONCLUSION

I wish to argue strongly that cost-benefit is the best existing framework for the evaluation of regional policy. It is a technique firmly based in welfare theory, is flexible to use and is specifically designed to deal with situations where market failure exists and where costs and benefits are distributed over time. Against this, the existing exchequer-cost-per-job approach has an instrumental, administrative basis and is arbitrary and inconsistent. However, the strength of cost-benefit is not that it can provide cast-iron decision rules for running regional policy. Rather, it is that it gives us a set of concepts, a coherent language, with which to constructively discuss such a policy. There is a low level of agreement about the way in which the UK economy operates over space, and, given the sparsity of spatially disaggregate data, differing viewpoints are likely to persist. Therefore discussion of regional policy should consist of broad and wide-ranging debate, not the minutiae of fine tuning. Cost-benefit draws attention to the key system-wide variables that are central to a rational discussion of regional policy. On the other hand, the recent cost-per-job evaluations of RSA, whilst strong on detail, fail to provide a comparable focus.

## REFERENCES

- Allen, K., Begg, H., McDowell, S., and Walker, G. (1986), *Regional Incentives and the Investment Decision of the Firm*, London: HMSO.
- Armstrong, H. and Taylor, J. (1993), *Regional Economics and Policy*, second edition, London: Harvester Wheatsheaf.
- Ashcroft, B. and Swales, J. K. (1982), 'Estimating the effects of government office dispersal: an application of demand constrained shadow wages', *Regional Science and Urban Economics*, vol. 12, pp. 81-97.
- Coates, D. R. and Appleton, M. J. (1983), *The Cost-Effectiveness of Selective Financial Assistance: The Raynor Scrutiny Programme 1982-83*, London: Department of Trade and Industry.
- Department of Trade and Industry (1995), *Regional Industrial Policy: Government's Response to the Fourth Report of the House of Commons Trade and Industry Select Committee, 1994-95 Session*, Cm 2910, London: HMSO.
- Hare, P. G. (1975), 'Regional investment criteria and shadow wage rates', *Scottish Journal of Political Economy*, vol. 22, pp. 305-20.

*Evaluation of Regional Selective Assistance*

- HM Treasury (1991), *Economic Appraisal in Central Government: A Technical Guide for Government Departments*, London: HMSO.
- (1995), *A Framework for the Evaluation of Regeneration Projects and Programmes*, London: HMSO.
- House of Commons (1995), *Regional Policy*, Fourth Report of the Trade and Industry Committee, Session 1994–95, HC 356-I, London: HMSO.
- King, J. (1990), *Regional Selective Assistance 1980–84*, London: HMSO.
- Layard, R. and Glaister, S. (1994), *Cost–Benefit Analysis*, second edition, Cambridge: Cambridge University Press.
- Milgrom, P. A. and Roberts, J. (1992), *Economics, Organisation and Management*, New Jersey: Prentice Hall International, Inc.
- PA Cambridge Economic Consultants Ltd (1993), *Regional Selective Assistance 1985–88*, London: HMSO.
- Rasmusen, E. (1994), *Games and Information*, second edition, Cambridge MA: Blackwell Publishers.
- Sandford, C., Godwin, M. and Hardwick, P. (1989), *Administrative and Compliance Costs of Taxation*, Bath: Fiscal Publications.
- Schofield, J. A. (1989), *Cost–Benefit Analysis in Urban and Regional Planning*, revised paperback edition, London: Unwin Hyman Ltd.
- Swales, J. K. (1989), ‘Are discretionary regional subsidies cost-effective?’, *Regional Studies*, vol. 23, pp. 361–8.
- (1995a), Memorandum to the House of Commons Trade and Industry Committee Fourth Report, *Regional Policy*, vol. 2, pp. 50–1, Session 1994–95, HC 356-II, London: HMSO.
- (1995b), ‘The efficiency of automatic and discretionary subsidies’, paper given at the Scottish Economists Conference, Aberdeen, April.
- Wiewel, W., Persky, J. and Felsenstein, D. (1994), ‘Are subsidies worth it?’, *Economic Development Commentary*, vol. 18, no. 3, pp. 17–22.