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PES to PES Dialogue

**The European Commission Mutual Learning Programme
for Public Employment Services**

DG Employment, Social Affairs and Inclusion

Making the business case for Public Employment Services

*Cost-benefit analysis and
productive efficiency analysis*

(September 2013)

Employment,
Social Affairs
and Inclusion

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Making the business case for Public Employment Services:
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European Commission

Authors: Dr. Lars Behrenz, Dr. Lennart Delander and Dr. Jonas Månsson.

In collaboration with ICF GHK and the Budapest Institute

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Executive summary

The purpose of the report is to give an outline of how cost-benefit analysis and productive efficiency analysis can help PES make the case for the use of different interventions (measures such as ALMPs) and service delivery models (including the deployment and training of staff). These methodologies can assist in assessing the cost efficiency and effectiveness of PES services and measures at a time when calls for an improved evidence base for public expenditure is growing.

Based on a survey of PES (conducted by the European Commission), a review of existing research and PES stakeholder interviews, it can be concluded that while the momentum behind the use of CBA is growing, more remains to be done in exploiting the potential of such analyses to make the business case for PES. Where CBA has been used as an approach, this has primarily focussed on the impact of active labour market policies, with some examples of highly pertinent studies looking at, for example, the impact of increasing counsellor numbers on placement rates. A better understanding of PES approaches can assist in increasing the use and familiarity of PES with the monitoring requirements to facilitate the preparation of CBAs.

The other main subject of the report is the measurement of productive efficiency which occurs when at a given cost the largest possible output is produced. Inefficiency can be measured in the increase in production that could be attained without increasing the use of inputs. As an alternative, inefficiency can be measured as how much production resources could be reduced without altering the level of production of services, i.e. a measure of the savings potential. Such measurements make it possible to compare the productive efficiency of individual employment offices. Therefore, measurements of productive efficiency can be the basis of actions to improve production and managerial processes. For this report a survey has been conducted of existing literature on this subject. The predominant method used is Data Envelopment Analysis (DEA) and the results of studies that have been performed indicate an average inefficiency, or savings potential, in the range of 5 to 30 % of the budget spent on production of PES activities. So far, these studies are limited to the national level and focus on defining and quantifying the degree of efficiency, whereas it would be equally relevant to compare the performance of different countries and to ascertain causes of inefficiency and how these might be overcome. There are few studies that try to go further and target the question of causes of the existence of inefficiency, and there is still an ongoing academic debate of how such studies should be conducted. The present report proposes a method for evaluating efficiency between countries targeting best-practice in Europe rather than best-practice in a specific country. Benchmarking in a European perspective could help national PES to exchange ideas on how to improve their productive efficiency.

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Introduction

The PES EU2020 working group points to change processes in EU PES that have been called for by social evolutions (PES EU2020, no date A). The note emphasises that PES operations will be profoundly influenced by changes on both the supply and the demand side of the labour market and by structural impediments such as, for example, mismatch between labour demand and supply and low participation rates among vulnerable disadvantaged groups. Rapid and targeted mediation is considered to remain essential for PES, but it has to be combined with support for transitions for individuals facing redundancy as well as career building throughout working life. PES should help job seekers adopt long-term career perspectives, stimulate them to enhance their competencies, provide career, as well as employment guidance, give workers support to make smooth career transitions, as well as working with employers to ensure they meet their requirements and encourage and support them to provide career opportunities for more disadvantaged individuals.

PES are required to develop their organisation and methods to efficiently and effectively respond to the changing needs in society and the labour market. Far-reaching changes in the tasks, organisational structures, and service concepts in PES present corporate governance with important challenges in a context of reduced budgetary resources. The pathway of change that has to be managed will be dotted with demands on decision-makers to choose between alternative courses of action. One of the main thrusts of this paper is to describe cost-benefit analysis, CBA, as a tool to assist decision-makers in making effective and efficient decisions. **CBA is a tool that judges alternatives in terms of their efficiency as regards the realisation of social objectives, which means that CBA allows policy makers to judge alternatives by their *allocative efficiency***. This requires taking into account the costs and benefits of the alternatives under consideration. As well as looking at CBA methods and their use more generally, this paper presents approaches to measuring *productive efficiency* which occurs when at a given cost the highest possible output of one service is produced within a given operational framework. Such measurements make it possible to compare the productive efficiency of individual employment offices or to make comparisons in this respect between PES in different countries. Therefore, measurements of productive efficiency can be the basis of actions to improve production and managerial processes. Examples of cost-benefit analyses of PES projects and productive efficiency analyses of PES are provided in the paper.

The remainder of the document is organised as follows: Section 1 opens with a brief sketch of changes in the governance in EU PES during the last decades which has necessitated greater attention to the effectiveness and efficiency of measures and services. This is followed by an accounting framework addressing both efficiency and distributional aspects of employment services (or the 'cost of no PES services'). Section 2 begins with a condensed description of basic principles of cost-benefit analysis which is followed by a summary of and a comment on the results of a survey on the use of CBA in EU countries carried out by the Commission. Finally the section reviews a number of economic analyses concerning employment services that have been carried out in EU countries. Section 3 is devoted to methods to measure the productive efficiency of individual employment offices and of the PES in one country in relation to productive efficiency of PES in other countries. This includes a brief overview of the theory of production and of methods to measure efficiency. It then goes on to provide a review of previous studies and a description of the production of employment offices. This section concludes with the development of a benchmarking model for European employment offices. Section 4 provides concluding remarks.

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1. The impact of New Public Management oriented reforms in European PES on the need to measure effectiveness and efficiency and an accounting framework for benefits and costs

Section 1.1 discusses changes during the past decades in the governance of EU public employment services. These changes have brought with it the need to use performance management as a means for PES to become more effective and more efficient. When it comes to studying the efficiency implications of alternative courses of action as regards PES operations, CBA is a tool at hand. Before giving a condensed description in section 2 of the principles upon which CBA rests, section 1.2 shows what costs and benefits can be associated with a PES activity (or indeed the cost of not providing these services). This will serve to demonstrate the type of items that can be included in a cost-benefit calculation and to show both the differences and the connections between real resource effects, i.e. costs and benefits, and financial effects, i.e. effects on public expenditure and revenue.

1.1 New Public Management practices and Management by Objectives brought a greater need to develop methods to measure performance, effectiveness and efficiency

Rising unemployment in the 1980s and 1990s contributed to generating **gradual changes in the governance of European PES—changes that were influenced by New Public Management (NPM) ideas**. The central message of this public sector governance philosophy which has its roots in the 1980s is that public administrations should emulate private business practices to achieve effectiveness and efficiency. In Europe, the UK and Sweden spearheaded NPM-oriented reforms, and as early as 1985 the Swedish PES, for example, introduced Management by Objectives (MBO) based on a system of performance targets and indicators (Weishaupt 2010, p. 473).

In the 1990s the OECD propagated NPM ideas in public management and its Jobs Study (1994) also suggested the elimination of the monopoly position of the PES, as there was considered to be a complementary role for private placement agencies and temporary work agencies.[1] The development since the 1990s has meant that competition and the need to prove allocative efficiency in the provision of employment services has come to play an increased role. Reforms to the organisation of publicly funded labour market training with new actors entering the sector have been followed by reforms in placement and reintegration services. The roles of the PES as purchaser and provider of services have been partly separated and market type procedures such as tendering and subcontracting have been introduced in many countries. The inclusion of contracted, private actors in employment services has, in accordance with the NPM philosophy, been justified with reference to effectiveness and efficiency gains and quality improvement (cf. Fay 1997).

Besides this development towards contestability in employment service delivery, **the use of performance management as a management practice belongs to**

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[1] In a case in 1991, the European Court of Justice (ECJ) had to decide if a state monopoly in executive recruitment services was compatible with EU competition law. The ECJ ruled that a public employment agency violates this law if it is manifestly incapable of satisfying the demand on the market for such activities. This was judged to be the case in the legal dispute in question. In 1997, the ILO's Private Employment Convention, which entered into force in 2000, recognised a role on the labour market for private employment agencies. The convention confirmed a trend towards dissolution of state monopolies in employment service—such monopolies were abolished in the 1990s in several European countries.

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the core trajectories with respect to changes in PES governance (Grubb 2004, OECD 2005, Weishaupt 2010, Ecorys 2012, European Commission 2011 (Author: Mosley), 2012a (Author: Nunn), 2012b (Authors: Stijs and Thaes), 2013 (Author: Nunn). Public management reform in the spirit of NPM has been particularly important for the spread of MBO (European Commission 2011 (Author: Mosley), p. 24). After the Swedish PES had introduced performance targets in 1985, MBO was also initiated in the PES in the UK and in the Flemish region in Belgium in the late 1980s. Since then, other EU countries have followed suit and the MBO approach with performance management through operational targets and indicators has been widely introduced in PES (for further information see the Peer Review on Performance Management in PES). Efforts to improve PES performance through performance management has been a major driver of change for publicly-financed employment services (Grubb 2004, p. 352). Reductions in PES resources have resulted in increased demands that PES performance management practices should be able to demonstrate the impact of PES activities and value for money from the resources used in PES activities.

In addition to providing support for the achievement of management objectives, performance management also serves as part of an evaluative approach to management by enhancing operational insight into the link between processes and inputs on the one hand and goal related effects on the other (European Commission 2012a (Author: Nunn), p. 6). Obtaining such insight has the dual role of promoting accountability for performance in the use of public funds and of improving management and allocation of resources (Sanderson 2001, pp. 301–302).

Access to measurements of inputs and outputs is indispensable to such evaluations of efficiency of PES activities that will be dealt with in sections 2 and 3 of this paper. Prior to exploring these methodologies, the next section develops how an accounting framework based on performance data can be used to allocate costs and benefits of PES actions to different stakeholders. The framework rests upon the condition that the PES has the explicit objective of promoting employment among its jobseeker clients.

1.2 An accounting framework makes it possible to visualise the costs and benefits of PES to individuals, families, society, and the public sector

Employment service activities that result, for example, in increased transition out of unemployment and reduced skill mismatch are associated with monetary and non-monetary benefits and costs.[2] Such effects are listed in Table 1.1 showing for each item whether it is a benefit (+), a cost (−), or neither (0). Benefits and costs are considered from three perspectives: (1) society as a whole which is here made up of (2) job seekers that transition from unemployment to employment and (3) the rest of society outside of the said group of job seekers. **A cost-benefit analysis of a project is about effects of the project on the welfare of all individuals on the community or on society as a whole**. The arrangement of items in the table can be seen as a framework that summarises the benefits and costs of a project that is about placement services. Conceptually, however, an accounting framework of this kind could also be used to outline the value of active labour market measures such as labour market training, wage subsidy programmes, start-up subsidies, etc. It can also be adapted to assess the diverse effects of measures directed towards employers, for example, with the goal of increasing the speed of filling vacancies or of better satisfying the competences required by employers. We choose to use a concrete measure rather than a more

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[2] Increased outflow from unemployment implies, *ceteris paribus*, reduced unemployment periods.

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general description to demonstrate how the effects of PES activities can be traced and allocated to stakeholders. The reason is that this paper is about the practical use of CBA in PES which entails dealing with questions about identification, estimating and valuing impacts of actions taken or contemplated. The account in section 2 below will give occasion to return to the accounting framework described here. To make the demonstration concrete we illustrate in Table 1.1 using an imaginary measure which results in shortened unemployment duration and/or more sustainable employment and/or higher productivity.

Table 1.1   Benefits and costs of a placement services programme for unemployed job seekers.

	(1) Society	(2) Job seekers that transit from unemployment to employment	(3) Rest of society
A. Output produced by job seekers who find Employment			
1. Increased production of goods and services through shortened spells of unemployment, more sustainable employment, and/or higher productivity	$+^a$	$+^b$	$+^c$
2. Increased payments of:			
a. income tax	0	–	+
b. payroll tax	0	–	+
Note. Value added tax is accounted for Under A.1(3) and the amount is included in A.1(1)			
B. Transfers to/from job seekers who find Employment			
1. Reduced payments of unemployment benefit and social allowance	0	–	+
2. Reduced payments of income tax on unemployment benefit	0	+	–
C. 'Incommensurables'			
1. Increased well-being for job seekers who get jobs for example because of development of personal abilities and potentials or greater career security	+	+	0
2. Increased well-being for other Individuals	+	0	+
D. Operating expenditures			
1. PES operating costs	–	0	–
2. Operating costs of other actors engaged by PES for integration activities	–	0	–
Total	S(1)	S(2)	S(3)

[a] Valued at market price including value added tax.
[b] Gross wage earnings + payroll tax.
[c] Value added tax.

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This framework distinguishes between economic efficiency and distributional implications (cf. Long et al. 1981). The social perspective addresses the efficiency issue and concerns changes in the amount of resources available to society and in 'incommensurables' such as the well-being of those who get jobs, their families, and other individuals. Jobseekers and the rest of society include everyone in society and, therefore, these two perspectives pay attention to how improvements accruing to society are divided between the two groups. Transfers between jobseekers and the rest of society cancel each other out and do not appear as components in the column for society as a whole. Most of the items in column 3 (Rest of society) correspond to increased/decreased payments to/from the public sector. Therefore, disregarding the intangible effect suggested by C.2, the sum S(3) of the entries in column 3 represents a financial effect for the public sector—an effect that individuals in the community benefit by through its consequences for central and local governments' decisions on spending on public consumption and investment. The sum S(1) = S(2) + S(3) of the entries in column 1, ignoring 'incommensurables' C.1 and C.2, represents a real resource effect, the efficiency aspect, of the PES action under consideration. An excess of benefits over costs, S(1)>0, implying that the positive variation of the consumption possibilities of the members of the community is greater than the negative variation, represents a social net benefit of the action.[3]

The following example gives a further hint on how the thinking behind the accounting framework can be a basis of summarising the distribution of the effects of PES actions among directly affected individuals, other individuals/the public sector, and society as a whole:

Implementing a course of action in the PES that results in a more efficient allocation of resources through, for example, reduced skill mismatch will lead to higher disposable incomes for individuals concerned [entries under heading (2) in an analogue to Table 1.1] since they obtain higher productivity jobs and their probability of future unemployment will be reduced. These effects are correlated with production impacts—the total production of commodities and services available for consumption will increase [entries under headings (1), (2), (3)] and real resource costs for participation in labour market programmes can be expected to be reduced [entries under headings (1) and (3)]. Reduced skill mismatch can also reduce turnover and recruitment costs for employers [effects to be entered under headings (1) and (3)]. Reduced future unemployment will affect transfer payments [entries under headings (2) and (3)]. Furthermore, there will be effects on 'incommensurables'—higher job satisfaction and self-confidence, etc. [entries under headings 1, 2, 3]. The project's cost effects are to be entered under headings 1 and 3.

To the extent that it is feasible to assess the impacts on different stakeholders of contracting out employment services to other actors, or even delegating services to the market, it will be possible to enter impacts that can be monetised as well as 'incommensurables' into an accounting framework like the one shown here. To evaluate, for example, a change in job search service for certain categories of job

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[3] For PES actions that yield time streams of effects, future benefits and costs are translated into present values by using the technique of discounting. The net present value (NPV) of an action that is being evaluated will then be expressed as the discounted present value of the annual net benefit, $S(1)_t$, generated over T years (t = 1, 2, …, T). NPV>0 indicates that the action under consideration improves allocative efficiency—it will leave the community on a higher level of welfare. If considered informative, present values of net benefits of an action can be calculated for both shorter and longer time periods. When the action under consideration is associated with an initial cost for capital investment its contribution to social welfare is measured by the net present value of future benefits and costs less investment outlay. Entries in column (3), disregarding the effect suggested by C.2, are relevant to analogous computations of financial effects for the public sector.

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seekers which would replace face-to-face job search assistance by electronic services would involve estimating effects for jobseekers on, say, unemployment duration and productivity—estimates that would be used as a basis for calculating amounts to be entered in A and B in Table 1.1. Estimations of effects of the change on real resource costs would be entered in D. The evaluation may also involve efforts (through, for example, a customer satisfaction survey) to find out such 'incommensurable effects' as are alluded to in C.

The approach in this section has been to show how the diverse effects of PES projects can be considered in terms of both economic efficiency, column (1) in Table 1.1, and distributional implications, columns (2) and (3). With this objective in mind we made use of an analytical list of effects from a hypothetical project but stopped short of monetary valuation, a stage in evaluating PES actions that will be included in the following section.

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2. Cost-benefit analysis is a proven method to evaluate PES activities

Cost-benefit analysis can be seen as an instrument that aims at the identification of actions that are best suited (and most efficient) to achieve specified targets. Commercial profitability calculation is its analogue in the world of business. What distinguishes CBA from private analysis is that the former also adopts a social perspective. This is the topic of section 2.1, which gives a condensed account of the reasoning that lies at the heart of CBA and of its application when it comes to the valuation of PES projects. Section 2.2 reports responses to questions in a survey carried out by the Commission to find out the use of CBA in the public employment services in EU countries. Examples of cost-benefit analyses concerning employment services in EU countries are presented in section 2.3.

2.1 CBA as a way of reasoning about decision-making seeks to take account not only of financial costs but also seeks to quantify a full range of societal and individual benefits

An aim of CBA is to judge non-market *actions* from the viewpoint of efficiency. The word 'actions' is in italics to emphasise the fact that CBA is a method to form an opinion about an intervention that is either realised or under deliberation—a choice between alternative ways of using resources. **CBA requires the specification of a genuinely comparable scenario (or a no-change scenario) to the specific course of action under examination.** Differences between the alternatives being compared are effects of the transition from one course of action to the other (in what follows such a transition is, for the sake of brevity, often designated as a 'project'). It is these effects that are the basic components of a CBA. **This means that a CBA will always necessitate an assessment of outcomes of alternative courses of action.**

CBA has its analogue in the world of business

'Efficiency' denotes optimality which means that available options are used in the best possible way. An efficiency analysis of an activity therefore means studying alternative ways to model and implement the activity with regard to its goals. For a private firm the goal, simply stated, is to maximise profit. If a change in its activities results in increased profit it is associated with increased efficiency. **As regards decision-making in the public sector the efficiency concept is more complicated since the goals of public operations are often difficult to define accurately and are sometimes also controversial. Similarly, many of the outcomes are more difficult to monetise.** However, one can use the seemingly simple formulation that the fundamental goal is to make society as good as possible for its members. In CBA then, the decision maker has as her/his core objective an increase in social welfare or 'social profit'. **Performing a CBA therefore requires reducing outcomes of the alternative courses of action that are being compared to a common yardstick, the obvious one being money.**[4] This means that the value of the gains (benefits) of a transition from alternative A to alternative B is estimated as the sum of money individuals are willing to pay for them, and the value of the losses (costs) that they are willing to pay to avoid them. The principle of CBA is that changes in welfare resulting from a transition from one course of action to another are measured as how they are valued by members of

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[4] "There is absolutely no need for money to be the numeraire (i.e., the unit of account) in such valuations. It could equally well be bushels of corn but money is convenient." (Layard and Glaister 1994, p. 2) This book covers theoretical issues of CBA, such as shadow pricing, discount rates, and problems of risk, uncertainty and income distributions. It also covers a number of case studies.

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society. **If a CBA concludes that the benefits of going from A to B exceed the costs, such a transition would result in increased allocative efficiency.** A transition from A to B would in that case mean that scarce resources would be allocated in a way that would increase social welfare. For an evaluation of a PES project to be undertaken, the abstract, idealised statement of the fundamental goal mentioned above (to make society as good as possible for its members) has to be redefined and operationalised into specific objectives such as, for example, to reduce unemployment durations in target groups of the project, to contribute to the faster filling of vacancies, or to improve matching of jobseekers to vacancies.

The valuation of a PES project

To the extent, for example, that an expansion of a particular activity performed by the PES results in shortened unemployment spells, it will give rise to an addition to the output of goods and services. The market price can be taken as a fair reflection of individuals' willingness to pay for another unit of this output. Furthermore, wage costs for employers represent a reasonable estimate of employees' contributions to the value of the output of firms. Therefore, wages of jobseeker clients of the PES that transit from unemployment to employment can be used as the basis of the valuation of the additional output at market prices, i.e., of estimating the value which individuals place upon it. Expanding an activity of the PES would mean an increase in its use of means of production that could alternatively have been made use of elsewhere in the economy. The expansion will, therefore, be associated with alternative production not forthcoming—an opportunity cost, a social cost of implementing the expansion. Wage costs for the related increase of staff and other operating costs connected with the expansion can be used as plausible estimates of the value of the output that the resources in question alternatively could have produced. Thus, the expenditure on an expansion of a PES activity can, in a CBA, be used as an estimate of individuals' valuation of the alternative output that is lost—a social cost related to the expansion.

The described procedure amounts to arriving at a valuation of a PES project on the basis of prices that are specially calculated, 'shadow prices'. The social value of the result of a change in PES activities, for example shorter spells of unemployment, cannot be directly observed but is derived from reasoning about pricing indicated above. All consequences of reduced unemployment duration are, however, not susceptible to being valued in money terms. The entry C 'Incommensurables' in Table 1.1 represents such non-market items for which reasonably credible shadow prices cannot be worked out. This applies to most effects of employment services that are not represented on the market for goods and services. CBA of policy interventions in the labour market, therefore, usually evaluates interventions exclusively in terms of effects on the amount of goods and services available. This is clearly evident in the examples in section 2.3 representing applications of CBA in evaluations of employment service projects in EU countries.

Quantifiable objectives

A circumstance that facilitates carrying out CBA in the field of PES is that objectives of PES activities to a high extent are expressed in measurable terms or lend themselves to quantification. Increased rate of transition from unemployment to employment and reduced length of time that job seekers are registered at the PES as unemployed are examples of effects that can be estimated on the basis of outcomes that can be observed. On the other hand, assessing achievement of a goal such as improved matching of job seekers to vacancies may require the use of proxies like outcomes as regards sustained employment and/or wages. Positive effects in terms of speedier transition out of unemployment and/or better matching result in the "cake" at the disposal of members of society becoming larger. The addition to the "cake" can be appropriately valued in monetary terms. As a matter of fact, the valuation of improvements in PES performance meets with less difficulty

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than the valuation of benefits in a number of other fields. Projects in public health services and programmes affecting the environment, for example, pose considerably greater challenges in this respect.

A fundamental question

That is not to say that it is an easy task to estimate what is to be the subject of valuation in a CBA of a PES project, i.e. to estimate its goal related effects. It amounts to estimating differences between outcomes that are caused by the transition from one course of action to another. This is a matter of finding the answer to a fundamental evaluation question: **How do outcomes change relative to what would have occurred in the absence of the project concerned?** There is a vast amount of literature on methods to tackle this challenging evaluation problem.[5] CBA of changes in PES activities generally use such methods as tools to identify effects only on individuals that are targets of a project. Such a partial equilibrium framework suffices to answer questions of interest in cases where it can be assumed that the analysed project has/does not have negligible effects on the labour market outcomes of other individuals. When this assumption is violated, performing a CBA can be markedly more difficult. A project that aims at promoting the chances for specific groups of unemployed people to find a job can, for example, result in displacement of other job seekers. It can be a demanding task for an evaluator to find a way to capture and measure such an effect.

Incorporating distributional effects

A common objection to the use of CBA as a vehicle in the decision-making process is that it does not take into account the distribution of the benefits and costs of the action that is evaluated. The accounting framework in Table 1.1, however, goes some way towards doing this. In this table it is column 1 (Society) that represents a CBA, i.e. an analysis of efficiency that reports benefits and costs to society as a whole. The addition to the framework of columns 2 (Jobseekers that transit from unemployment to employment) and 3 (Rest of society) separates the cash flow to and from public authorities from the cash flow to and from the jobseekers directly affected by the examined project. Thereby, the net benefits are split up between individuals that belong to the project's target group and the rest of society that can be thought of as the 'taxpayers'.[6] Disregarding 'Incommensurables' the sums of the entries in column 2 and 3 show how effects on disposable incomes are distributed between targeted unemployed and the rest of society. Entries in the accounting framework in Table 1.1 that represent effects on the production of goods and services, tax payments and transfer payments can, in cases where it is warranted from the point of view of decision-making, be calculated for subsets of jobseeker clients (men/women, immigrants/natives, etc.). The project's effect on the disposable income of subgroups of clients can then be calculated on the basis of entries in column 2.

A tool to improve the basis for decisions

"CBA may be seen as an information system relevant for allocative efficiency; obviously **the purpose of CBA is to aid collective decision making, not to determine it**" (Battiato 1993, p. 37, emphasis added). As an aid to decision-makers a CBA can include a list of effects of an action as regards objectives to which decision-makers are committed but that cannot appropriately be valued in monetary terms. In Table 1.1 item C 'Incommensurables' is a comprehensive concept for such effects. Since a choice has to be made between the alternative

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[5] Cameron and Trivedi (2009) is an example of a publication that can be used as a reference work.

[6] The job seekers concerned are of course also tax payers but they are a small group in comparison with the rest of society.

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courses of action that are considered, the decision-maker must make a judgement about effects that are merely listed. The act of making a decision completes the CBA, the purpose of which is to improve the knowledge on which to base a decision.

Decision-making means thinking in terms of advantages and disadvantages of different courses of action. To make up her/his mind, the decision-maker cannot evade the problem of weighing pros and cons of the alternatives under examination. In that sense cost-benefit analyses are in practice inevitable. But then we speak of CBA as something that goes on in the decision-maker's head. Conducting a CBA is an effort to systematically and consistently describe pros and cons of an action and, as far as possible, to make them comparable by using a common yardstick - money. Such an effort aims at being "explicit and systematic about the factors involved in the particular choice under investigation." (Williams 1993 p. 73) That is a respectable aim but, nevertheless, **the use of CBA in the PES of EU countries is**, as will be seen from sections 2.2 and 2.3, albeit increasing, **not done on a systematic basis and tends to focus on the assessment of measures rather than service planning and delivery, which is also an important aspect to support the business case. The use of evaluation, rather than full CBA remains more widespread and further efforts could be encouraged by showing the added value and providing better guidance on carrying out CBA**. It could often be a question of difficulties in obtaining the appropriate data needed to estimate effects and to calculate the corresponding benefits and costs. In this respect it is, however, important not to let the best be the enemy of the good. The best is complete and faultless cost-benefit analyses. The good is improvements of the bases for decisions.

2.2   Use of CBA in PES of EU countries

The Commission has approached the PES in EU countries via email to find out what information they could provide about the role of CBA in the PES in their own country, and if CBA is indeed applied, what types of activities are or have been subjected to CBA. The responses to questions in the survey indicate that the degree to which CBA is involved in decision-making processes in the PES appears to be very limited in practice.

CBA is easier to employ the more the options to be examined are similar to those that are the subject of commercial profitability assessments. It is therefore to be expected that CBA is rather more prevalent as regards clearly-defined public investment projects. This matches quite well with the actual facts since, for example, investments in transport and infrastructure projects are often the subject of CBA. It is a more demanding task to apply the fundamental principles of CBA on activities that, in broad terms, have socio-political and socio-economic aims. This and the fact that the initiation and use of CBA in PES depend on the institutional settings and the corresponding structure of inducements to decision-makers in all probability helps to explain the variance of the answers to the survey.

The survey consisted of questions about: (1) whether CBA is used in the PES, (2) if so, in which areas, (3) whether information about results from CBA is available. Responses have been received from seventeen countries and nine of them report that their PES does not carry out CBA.[7]

Question 1: Is a concept for cost-benefit analysis in place in your PES (regarding individual, organisational, labour market and economic, societal dimensions)?

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[7] PESs reporting use of CBA: Belgium Actiris, Bulgaria, Germany, Lithuania, the Netherlands, Poland, Spain, Sweden. PESs not using CBA: Austria, Belgium Le Forem, Croatia, Hungary, Italy, Latvia, Luxembourg, Slovakia, Slovenia.

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Eight countries have answered in the affirmative to this question and their answers to the attendant questions will be summarised below. From most of the answers from the PES that do not do CBA it is not evident whether this is due to the information provided by CBA not being seen as relevant for decision-making in PES or if there are other reasons such as, for instance, perceived difficulties in gathering information about impacts of alternative courses of action. The response from one country, Austria, however, points out that decision-making in the PES is based on "political ideas and concepts on what a society should be, how a good life should look like and which kind of life a society wants to provide to its weakest members." The PES in question evaluates active labour market programmes in terms of integration rates and calculates the impacts that programmes have on public expenditures and revenues but stops short of a fully developed CBA.

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Question 2: In which areas is the use of CBA most progressed?

Representatives of the PES in eight countries have answered in the affirmative to the first question about whether CBA is a concept that is in place in the organisation. With the second question they were asked to specify the use of CBA. The following summary shows that CBA is being used very modestly.

Country

Bulgaria	An evaluation has been performed of net impacts of different types of mediation services.
	Unemployment duration and a number of quality aspects based on jobseekers' personal assessments are examples of outcome variables in the study, which showed no statistically significant effect of mediation services on the average length of unemployment. The study does not estimate budgetary effects and does not amount to a full CBA method.
Germany	CBA primarily used in the management of specific projects, as a decision-making tool and as an input in the monitoring process.
	A current example includes a project to use additional personnel in counselling activities for the specific target group. The impact of this increase in staffing numbers on off flow rates will be assessed and it will be calculated whether any savings and societal benefits gained (through reduced unemployment)t can offset the additional staffing cost.
Netherlands	One pilot study and two experiments with assessments of effects on unemployment duration and payments of unemployment benefits, including an assessment of the move to increasing e-service provision and of the reduction in re-integration budgets.
Spain	Most progressed in evaluation of vocational training. PES also analyse the **cost-effectiveness** of its activities. This means that activities are judged in terms of their **costs per unit of output** (job placements for example) which makes possible comparisons among activities generating output of the same type. However, this does not include efforts to place monetary values on the achievement of beneficiary goals. Basically, the approach seeks to single out courses of action that maximise goal achievement within a predetermined budget or, similarly, that minimise expenditure to realise a specified goal.
Sweden	In its Labour Market Report 2011 the PES presents results of its calculations of benefits and costs of three active labour market programmes.
Belgium (Actiris)	*No special areas are mentioned*
Lithuania	*No special areas are mentioned*
Poland	*No special areas are mentioned*

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It can be assumed that assessments of cost-effectiveness of employment service activities (as described by Spain) are also performed in other EU PES but that in their responses to the survey they have not thought of analysis of cost-effectiveness in addition to the main meaning of CBA.

Three of the countries that have reported CBA being in place in their organisation have not specified areas where concrete analyses have been or are being performed (Belgium Actiris, Lithuania, Poland). Their responses to the survey can be interpreted as reflecting a more general approach to the issue of benefits and costs of the PES in the sense that these are variables that guide their behaviour and actions, whereas the actual application of CBA is not a modus operandi in the organisations. (Cf. our discussion at the end of section 2.1 where we contrasted CBA as something that goes on in the decision-maker's head with CBA on paper with words and figures.)

To sum up: only the Spanish PES has singled out a special area, vocational training, in which CBA is most progressed. References to applications of methodologies other than CBA dominate the answers to Question 2. A role of CBA as informative support is illustrated by the Swedish PES having presented results of CBA of three active labour market programmes in one of its annual reports. It can be assumed that other PES also carry out impact evaluations, without conducting a full analysis of all costs and benefits of a measure or delivery model. Furthermore, section 2.3 below summarises examples of CBA which can be found in the literature but were not mentioned by respondents in the survey, which shows that other examples exist which were simply not reported in the survey exercise.

<u>Question 3: Are there reports with results from analysis?</u>

As regards the third question in the survey the PES in Germany mentions that there will be an account of the project with an increase of counselling staff. The results, but not the calculations, of the cost-benefit analyses of three labour market programmes that were performed by the PES in Sweden are briefly presented in one of its annual reports. That presentation demonstrates that **CBA can not only be used as a tool to guide decision-making but can also be employed as a way of communicating observed or expected results of projects to policymakers, politicians, and the general public.** Some of the remaining six respondents have left a blank and some have answered to the third question by referring to reports that present results of either assessments of labour market outcomes of PES activities or of financial evaluations of projects but not of valuations in terms of efficiency benefits and costs.

<u>According to the survey CBA is less prevalent than financial appraisal in EU PES</u>

The responses to the survey demonstrate decision-makers' interest in the impacts that alternative ways of using resources have on public expenditures. Such project evaluation as is referred to in some of the answers has only been or will only be concerned with entities that are registered in public financial accounts. This applies not only to projects that entail comparisons between alternative ways of providing services, but also in one case to an increase and in another to a cut of budgets for certain activities (answers from the PES in Germany and the Netherlands respectively). **Choosing between alternative courses of action on the basis of financial evaluations means following objectives that are narrower in scope than the social objective of increased allocative efficiency with which CBA is concerned.**[8] **To be able to follow objectives that are broader**

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[8] It can be worth noticing that although an objective with respect to the financial outcome of a project does not capture all of the dimensions of the public interest, "it has the countervailing advantage of making it relatively easy to monitor the decision-maker's success in pursuing the public interest in those dimensions that it does capture." (Sugden & Williams 1978, p. 6)

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in scope than financial objectives, for example to secure efficient use of resources, decision-makers need to procure more information about pros and cons of projects than can be found in public accounts. The goal of CBA is precisely to provide knowledge that enables decision-makers to take budgetary decisions that move society towards a better allocation of resources in a way that takes account of all costs and benefits for all stakeholders concerned. From the point of view of allocative efficiency it can matter greatly whether spending is on programme A or B or if spending on programme C is changed by x or y per cent. This proposition is not to undermine the value of financial evaluation, in actual fact the calculation of impacts on public expenditures and revenues should be regarded as an important element of CBA. An accounting framework like that shown in Table 1.1 demonstrates that the financial effects for the public sector of a project are embedded in or can be calculated from the real resource effects, i.e. from the costs and benefits for society as a whole.

Interviews with PES officials confirm that CBA is currently being used on a modest scale alongside evaluation and other performance measurement approaches

We have seen that according to the responses to the survey **practical applications of CBA to guide decision-making in EU PES, albeit growing, remains limited and need to be seen in the context of a wider spectrum of evaluation and performance measurement approaches**. In section 2.3 we present results of our search for cost-benefit analyses of PES activities in EU countries that have been performed by parties outside of the PES. First, however, we will briefly report information obtained through telephone interviews with representatives of PES in four EU countries: Austria, Germany, Spain, Sweden.

Our interviewees were asked to judge the following three types of evaluation of an action, a project, etc. as an aid in decision making in the PES: Evaluation of its (1) impacts on the labour market, (2) effects on public expenditure and income, (3) real resource effects for society as a whole, i.e. CBA. A common view seems to be that evaluations of type (2) are of great value as a decision aid but that evaluations of type (1) are of more frequent occurrence since reliable data can often be procured from available records. It is a more exacting and arduous task to obtain information about a project's effects on public revenues and expenditures. One respondent, however, made a strong point of the need for financial assessments in times when consolidation of public finances is needed. Evaluations of type (3) are unusual. This can be because knowledge of the required methods is not yet widespread or because it is felt that a broader evidence base would be required to achieve meaningful results. Nevertheless, the respondent from the German PES judged that CBA of a certain project at a certain time can be very useful.

The answers indicate that in decision-making processes regarding PES activities the dominant role of evaluation is to assess the impact of activities on the labour market. Therefore, identification and estimation of these impacts does not seem to be what restricts the use of CBA but rather valuation of less tangible costs and benefits and the comparison of the full set of pros and cons. Methodological approaches are available to help achieve this, but need to become more widely used. As regards estimation of impacts our Swedish interviewee pointed out that application of statistical matching methods on available information in the PES's data warehouse can be used for *ex post* estimations of effects of activities and projects under consideration (This procedure was used to perform the above-mentioned CBAs of three Swedish labour market programmes). One of our respondents indicated that 'incommensurables' are often considered to be an important element in desired outcomes of many PES actions. In such cases there can be crucial effects which are more difficult to quantify and require more advanced methods to estimate. The Spanish official called attention to the fact that PES activities can have significant effects on the labour market outcomes of non-

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participants. In such cases methods that consider only effects of programmes on their participants do not suffice to answer evaluation questions of interest.

2.3 Limited examples of cost-benefit analyses carried out in EU countries

Cost benefit analysis is also currently not widely used in the evaluation of European labour market projects (where evaluation continues to be the prevalent approach). We have searched in well-reputed international journals for studies where effects of such projects have been valued in monetary terms and have found only a few examples. We start with presenting the main conclusions of four studies in which the authors, after having estimated labour market impacts of the projects under investigation, took a second step and calculated some of the effects on public accounts. Among these studies there is, however, no full-blown cost-benefit analysis of effects for the society as a whole*.*

UK: Restart programme cost-effective for unemployed men

Dolton and O´Neill (2002) estimated the effects of the British so called 'Restart programme' in the late 80s. The British Restart programme consists of a compulsory interview for the long-term unemployed with an employment officer at the Employment Office. The main aim of the programme is to reduce welfare dependency. The programme combines counselling and encouragement with tighter enforcement of the conditions necessary to qualify for unemployment benefits (UB). Starting out from the observed positive impact of the programme as regards its goal to reduce unemployment, the authors calculate its effect on payments of unemployment benefit. In what has to be judged as a financial analysis of effects for the public sector rather than a cost-benefit analysis for the society as a whole, the authors compare the positive effect of lower unemployment benefit payments with the administrative costs of the programme. According to their results the Restart programme was cost-effective for the public sector, at least with respect to the labour market outcome for unemployed men.

NL: Uncertain effects of counselling and monitoring

Van den Berg and van der Klaauw (2006) study effects of a social experiment of counselling and monitoring that is provided by unemployment insurance agencies in the Netherlands. In the Netherlands counselling and monitoring are provided by the local unemployment insurance agencies. The programme consists of monthly meetings with an employee from the unemployment insurance agency. Unemployed people were randomly assigned to treatment and control groups. The impact on participants' unemployment duration is used as the basis of calculations of the programme's effect on public budgets. The programme is found to be cost-effective for the public sector but the results are not statistically significant, therefore the authors could not reject the hypothesis that the net effect is zero.

DE: Negative effects on duration of unemployment of training and subsidised jobs

Lechner and Wunsch (2008) study labour market policy programmes in Germany. The authors evaluate seven types of training, which differ considerably in the extent of the human capital investment, as well as subsidised non-market jobs (so-called employment programmes) that were conducted in West Germany in the period 2000–2002 after the first large reform of German ALMP in 1998. The results indicate that as regards the duration of unemployment the participants of the programmes were worse off than the unemployed that were used as a comparison. Participants' unemployment periods were 2–13 months longer. This induces net costs for unemployment benefit payments and costs for wage subsidies to employers amounting to, on average, EUR 1,500–7,000 per participant. Then there are direct programme costs which were not taken into account in the study.

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SE: Estimation of cost per added job-year of a programme for immigrants

Åslund and Johansson (2011) evaluated a Swedish immigrant introduction programme. The authors evaluate an immigrant workplace introduction program aimed at helping individuals considered employable but at the same time expected to experience substantial difficulties in finding work. The authors calculate costs per additional "job-year" attributed to the programme under different assumptions on how long the jobs will last. Under the most reliable assumptions the number of created full-year jobs was 466 and since the annual costs of the introduction programme was SEK 126 million, the cost per added job-year could be estimated at SEK 270,000.

For all countries, except for Spain, **the largest share of the cost of unemployment is induced by the potential loss of revenue and not by the public intervention**. In the UK, the potential loss of revenue represents an amount of EUR 12,702, 71 % of the total cost. The potential loss of revenue is also high in Belgium, where it represents an amount of EUR 22,267, 67 % of the total cost. In Sweden, Germany and France, the potential loss of revenue represents around 60 % of the cost. In Spain on the contrary, it represents only 45 % of the total cost.

These are the findings of a recent study carried out by Idea Consult on behalf of the European Federation for Services to Individuals (EFSI).

For more information see http://www.efsi-europe.eu/fileadmin/MEDIA/publications/Cost_of_unemployment_report/English_Study_on_the_cost_of_unemployment_January_2013.pdf

Now we present two studies which, unlike the preceding ones, represent fully developed cost-benefit analyses.

SE: CBA of an increase of staff

In 1987 the Swedish government decided to grant the National Labour Market Board extra funds to be used for increasing the number of personnel in the PES by 250 placement officers and counsellors (an increase of about 5 % Analysis of the impacts was performed as a quasi-experiment and was based on before-and-after comparisons of three employment offices where the staff were increased by roughly 20 % and three offices with either unchanged or only slightly increased number of case workers (Behrenz 1998, 2002). The cost-benefit analysis in this study had the objective to estimate whether the staff increase resulted in a net increase in the value of goods and services produced and if this increase was higher than the costs for the increased number of case workers at the employment offices in the study. The impact on the labour market was measured by the increase in the number of production days estimated on basis of the effect of the increase in staff on the speed of filling vacancies. A comparison between these estimates for the before-and-after periods, respectively, indicated a significant effect on the duration of vacancies of about one day on average.

According to the results the costs exceeded the benefits. A reduction in the duration of vacancies as an effect of the personnel increase would have needed to be 2.5 days on average for the costs to be covered by the benefits.

SE: Intensified placement activities beneficial to society and the public sector

Hägglund (2009, 2011) studies five experiments in four different regions of Sweden in 2004 where intensified placement activities were tested on unemployed registered at the PES. Participants and non-participants were selected through randomisation. The author studies the causal effect of intensified placement

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activities on gross earnings, employment status, and number of weeks as unemployed between 2004 and 2006. Cost-benefit analysis is performed following Meyer (1995) and the author does some rough calculations of the costs and benefits from three perspectives: (i) the unemployment insurance system, (ii) the public sector as a whole, and (iii) society. Changes in payments of unemployment benefits due to the different experiments' impact on unemployment are compared with the public financial costs associated with the experiments. After having added the tax revenues due to the increased earnings, the authors arrive at a total public financial result. The benefit for the society is calculated on basis of the change in earnings resulting from participating in the experiments. The difference between the benefits and the financial costs, which correspond to real resource costs, gives the result for society. Four of the five studied experiments of intensified placement activities ended up with positive impacts both for the public sector and for society as a whole. From this study we can conclude that intensified placement activities seem to be cost-effective both for the society and the public sector.

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3. Measuring productive efficiency of employment offices

The CBA framework presented in sections 1.1 and 2 focuses on the costs and benefits of alternative courses of action in PES activities with regard to their realisation of social objectives, their allocative efficiency. Another important aspect of efficiency is the productive efficiency, the production of maximum output at a given input of production resources (staff, premises, technical equipment, etc.). This type of analysis focuses on efficiency within the employment offices rather than on the efficiency as regards the contribution of their actions to the economic welfare of a community. Section 3.1 outlines shortly the theory of production. Previous studies of productive efficiency in PES are presented in 3.2. Section 3.3 presents an approach for evaluating a PES's efficiency in relation to that of other PES. A description of methods to measure productive efficiency is included in the Appendix.

3.1 The theory of production can be used to measure the productive efficiency of individual PES offices[9]

In contrast to the previous chapter the overall question to be analysed here is how well different PES handle the transformation of their resources to output. In production theory there are two dominating views of objective functions for a decision-making unit (DMU).[10] In our case the DMUs are different employment offices. One view is that DMUs have the objective to minimise its use of resources in order to meet a fixed demand for its products or services. Models based on this view are denoted input based models. The other view is that the objective for DMUs is to maximise production given a fixed amount of resources. Models that are based on this perspective are called output based models. The objective function to be assumed for a specific study is determined by the setting in which the analysis is carried out. For a public authority like the PES it is reasonable to assume that the allocation of resources is more or less outside its control. Therefore a reasonable assumption is that PES has the objective to maximise its production at given resources, which means the application of an output based model; see Figure 1 that illustrates a method to measure productive efficiency that is called Data Envelopment Analysis, DEA.

Figure 3.1   Output based model of production

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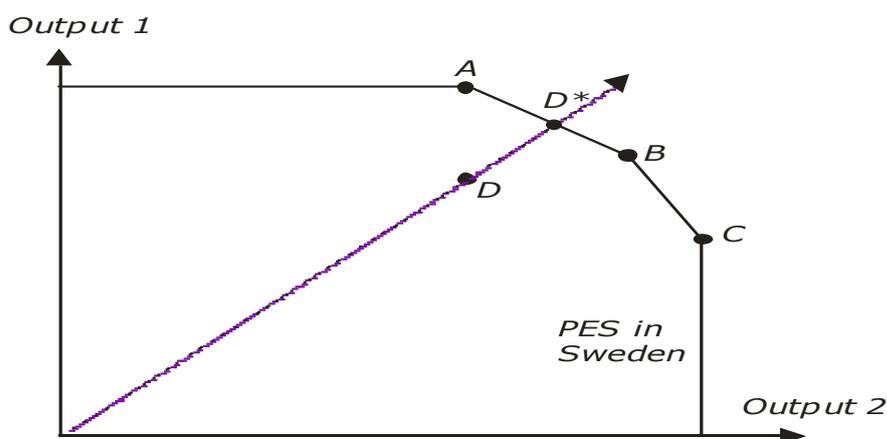
[9] For a detailed description see e.g. Färe 1989.

[10] In some cases the objective function could be mixed. For example when studying environmental efficiency the objective is to maximise the production while at the same time minimise pollution. (See e.g. Färe et al. 2007)

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For simplicity of illustration we use two outputs which are measured along the two axes.[11] In the case of employment offices the outputs could be the indicators or a subset of indicators, developed by the PES-benchmarking group (see e.g. http://www.pes-benchmarking.eu/); for example output could be number of transitions from unemployment to full-time job and number of transitions from unemployment to part-time jobs. Points A, B, C, and D are four different observed employment offices which are assumed to have the same amount of resources. The line that passes through employment office A, B, and C is called the production frontier or production possibility frontier/curve. The production frontier illustrates observable combinations of outputs that are efficient, i.e. it is not possible to increase for example, the number of job placements, without increasing the amount of resources. This production frontier is also sometimes labelled the reference technology. One assumption made in standard analysis of production is that if production can occur as in A and B then it therefore is a possibility to produce according to combination of A and B.[12] Employment office D, however, is not located on the frontier although D has the same amount of resources as employment offices A, B, and C. It should therefore be possible for employment office D to increase its production without adding resources. This could be done by either increasing only output 1 or only output 2, however, the standard procedure in production analysis is to simultaneously increase all final outputs.[13] This is illustrated by the line passing through the origin, point D, and D*. The potential increase in production, or inefficiency, is illustrated by the distance between point D and D* and reference units for D (benchmarking units or 'best practice') are in this illustration employment offices *A* and *B*.

3.2 Findings from previous studies indicate that individual PES offices can take significant strides to improve productive efficiency[14]

When reviewing different studies on the productive efficiency of PES offices, it is important to note that the model specifications of the services delivered by these offices varies and there is also variation in the definitions of inputs and outputs used. More information on the methodological background to these studies can be found in table A.1 of the Appendix. It must also be stressed that **none of the reviewed studies have a comparative approach; it is therefore impossible to make statements about, for example, best practice in Europe.** We address this question as well as practical requirements for this type of analysis in section 3.4.

- One of the first efficiency studies of employment offices is Cavin and Stafford (1985). 51 American employment offices were studied between 1977 and 1982. The results showed large differences in efficiency between the studied employment offices. Comparing with a reference employment office the authors could show that the most inefficient had a cost **savings potential of 27 %** and that the most efficient office was 38 % more

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[11] It should be noted that the model is not limited to two outputs or two inputs. The number of outputs that can be used is more limited by the number of observations available.

[12] The formal term is convex combinations of A and B. If it can be argued that this assumption does not hold, a slightly different model can be used. In the literature it is called a "Free disposable hull" technology. (See e.g. Deprins, Simar and Tulkens (1984).

[13] If intermediate outputs are used they are not to be a part of the objective function but will enter the model as a restriction. For example if output 1 in figure 1 is assumed to be intermediate and output 2 is assumed to be a final output we would only try to maximise the production of final output going from point D and vertical to the production frontier.

[14] This section is based on Andersson et al. (2013).

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efficient than the reference office. In Calvin and Salford (1985) the PES's output is defined as placement in jobs and difference is made between placements of adult and young unemployed.

- Sheldon (1999), Vassiliev et al. (2006), and Ramirez and Vassiliev (2007) all study the efficiency of employment offices in Switzerland using different methods. The results show **average inefficiencies of 5 %**. One interesting aspect of Sheldon (1990) is that quality adjustment is made on the output side. This is done by taking quality of the job into consideration and distinguishing between permanent placements and other placements.

- Torgersen et al. (1996) and Torp et al. (2002) are two studies that use the DEA method on data for Norway. Data for 1990 and 1998 are used. The results show **average inefficiencies of between 10 and 13 %**. One difference between the two studies is the definition of outputs. In Torgesen et al. (1996) output is defined as what is done in the employment office, e.g. number of counsellings, while Torp et al. (2002) use different aspects of placements, but also include inflow into unemployment as an output, something that can be questionable.

- Kthiri and Emrouznejad (2010) study efficiency of employment offices in Tunisia using the DEA method. They find **average inefficiencies of between 16 and 21 %** during the time period 2006–2008. Kthiri et al. (2011) study the productivity of employment offices in Tunisia during the same period and find a negative productivity development.

- In Althin and Behrenz (2004) the authors use data from 1993 and study the efficiency of 297 Swedish employment offices and a DEA model. The inputs used included staff (divided into assistants, placement officers, and counsellors), office space, and computer grid connections. The outputs used included jobs in the open market, jobs with wage subsidies or sheltered employment, and placements in labour market policy programmes. The study used two attribute measures to take differences in labour market conditions between different employment offices into account. These attribute measures were average unemployment duration and average vacancy duration. The results showed an **average inefficiency of about 30 %**. The results also revealed that the attributes could only explain a small part of the inefficiencies.

- The same data was used by Månsson (2006) who focuses on scale efficiency, using a DEA model. In that study the author shows that technical as well as scale efficiency changes depend on whether the two said quality attributes were included or not. If these are included in the specification, the optimal scale of production decreases. Thus, **including quality seems to have small effects on efficiency but significant effects on optimal scale**.

- In Althin and Behrenz (2005) efficiency and productivity for 253 Swedish employment offices during 1992–1995 are studied, using a DEA model. The inputs used included staff (divided in assistants, placement officers, and counsellors) and office space as an approximation for capital. The output variables included open market jobs, placements in labour market programmes, placements in part-time work, placements in temporary work, and placements in permanent work. Also this study used average unemployment duration and average vacancy duration as attributes. The results showed an average inefficiency of between 22 and 26 %.

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- ▪ Althin et al. (2010) studied the efficiency for 265 Swedish employment offices between 1992 and 1998. The study used a DEA model with both intermediate and final outputs. The inputs in this study were: staff (measured as full time equivalents divided into assistants, placement officers, and counsellors), office space, and a variable for expected workload. The expected workload variable is intended to show the amount of work that the employment office has to do to produce one final output and should, thereby, correct for differences between employment offices when it comes to differences in local labour market conditions and also to differences in the attributes of the unemployed individuals at different offices. The variable is estimated yearly using duration analysis. The intermediate outputs can roughly be divided into placements in non-matching jobs, placements in training programmes, and sustained unemployment. The final outputs were job placements, other education than labour market training, and de-registration from the employment office for other reasons. The results showed that the average inefficiency was relatively stable during the studied time period and that the employment offices could double their output without changing the amount of inputs.

- ▪ Finally, Andersson et al. (2013) study efficiency of Swedish public employment offices. The authors use repeated cross sections for the period 2004–2010. This study use a DEA approach and follow in its design Althin et al. (2010). In the analysis both final and intermediate outputs are included and input quality is controlled for. The final outputs are placements in jobs which also means that the unemployed is deregistered from the PES, and transition from unemployment to education. Intermediate output is transition to jobs where the unemployed still are kept in the register of the employment office, e.g. transition from full-time unemployment to part-time employment/unemployment. The result of the study **revealed inefficiency in the range of 8% to 15%**. In terms of cost savings potential this would correspond to a saving of between 0.48–0.90 billion SEK.[15] In the development of the model the Swedish PES provided continuous input.

The overall picture given by previous studies is that the DEA approach has been found to be the most suitable method for studying PES productive efficiency. Even if it is not possible to compare results between countries in terms of efficiency the results indicate, with few exceptions, an average within country inefficiency, or output increasing potential, of around 15%. That is, it would be possible to increase production by 15% without increased input of resources.

Despite the studies described in present literature we have little evidence that this type of framework is used in monitoring the performance of employment office services. After publication of the study conducted by Andersson et al. (2013) the Swedish government has, however, instructed the Swedish PES to further develop the model and make it a part of its present tool for monitoring performance.

3.3 Developing a benchmarking model for European employment offices

The studies reviewed above have one thing in common and that is that they are country specific. Thus, the analyses of employment services in Sweden show what

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[15] Based on a cost for the employment office services of 6 billion SEK (Statskontoret 2012).

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is the best that can be achieved by Swedish employment offices. From a European perspective and for improving the PES production this result might have little relevance (beyond providing some indication of how efficiency might be improved more generally). Instead of getting information about which office performs best in each country, i.e. a national champion, we need to develop a model that allows us not only to compute efficiency in a European perspective, i.e. to pick out a European champion, we need also a model to allow us to compare PES between countries. The model extension that we propose to that effect has previously been used by e.g. Grosskopf and Valdmanis (1987) and Månsson (1996) to investigate efficiency differences between publicly and privately owned service providers. The approach is illustrated in Figure 3.2.

Figure 3.2   Conceived production frontiers of PES in two regions
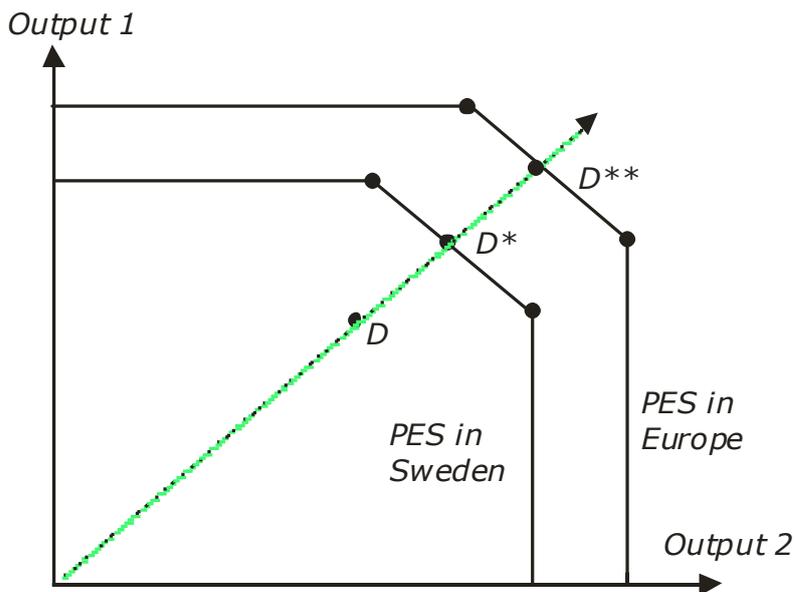

Figure 3.2 illustrates the approach. On the x- and y-axis different kinds of empirically defined outputs are measured. In the figure there are two production frontiers indicating maximum production at given resource level—one representing all PES in Europe and one representing a specific country e.g. Sweden. As in Figure 3.1 employment office D is not located on the frontier. To evaluate efficiency we can either use the European frontier or evaluate against the Swedish frontier. Evaluating against the Swedish frontier shows that it is possible to increase the production to output combination D* and inefficiency is interpreted as above. Since we are evaluating against the Swedish frontier we know that there are employment offices in Sweden that are producing employment services in a more efficient way than D, i.e. reducing inefficiency at employment office D is feasible. We call this inefficiency 'within country inefficiency'.[16] However, evaluating against the European frontier does not necessarily indicate that it will be possible for a Swedish employment office to reduce inefficiency. In other words, the distance D* to D** is inefficiency due to the fact that the production takes place in Sweden using a Swedish production system. This part of the inefficiency is called the 'between countries inefficiency'.[17] The overall technical efficiency can be computed as 'within inefficiency' x 'between inefficiency'.

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[16] In Månsson (1996) this part is denoted managerial inefficiency since management can actually take actions to reduce inefficiency within the existing context.

[17] In studies on private vs. public ownership the corresponding inefficiency is denoted 'organisational inefficiency'. This inefficiency exists for example because a company is publically owned and its management does not have scope for actions that would reduce inefficiency.

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Developing an approach for benchmarking employment offices in a European perspective makes it possible to compare not only offices in a single country to what is best in Europe but the analysis can be disaggregated to comparisons with, for example, country groups or even regions. Further, rather than evaluating different employment offices the approach can also be used to evaluate different systems of providing employment office services. The requirement for using the approach is that production is defined in a similar way across the countries that are included in the comparison and that data are measured in the same way. A starting point for this type of analysis could be the indicators developed by the PES-benchmarking group.

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4.   Summary and concluding remarks

One object of this report is to describe CBA as an instrument to assess alternative courses of action in PES in terms of their contribution to the net economic benefit to the community, i.e. in terms of their **allocative efficiency.** The other object is to describe and discuss the use of measurements of **productive efficiency** in PES— measurements of whether output of services could be increased at a given input of resources or, alternatively, if a given volume of output could be attained at a decreased input of resources (a savings potential).

<u>Practical applications of full CBA in EU PES remain rare, but show a clear value</u>

The Commission has sent a survey to EU PES about the role of CBA of PES activities. Responses were received from the PES in 17 countries. Eight of them state that CBA is a concept in place in their PES (Belgium Actiris, Bulgaria, Germany, Lithuania, the Netherlands, Poland, Spain, Sweden) while the PES in nine countries state that they do not use CBA (Austria, Belgium Le Forem, Croatia, Hungary, Italy, Latvia, Luxembourg, Slovakia, Slovenia). Only five of the eight countries that answered in the affirmative to the question about their use of CBA answered an attendant question about areas in which CBA is applied. The Spanish PES singles out vocational training, the German PES is less specific and states that CBA is primarily used as a tool to evaluate specific projects, the Swedish PES does not separate out any particular areas but mentions that it has performed CBAs of three of its active labour market programmes (self-employment subsidies, work experience placements, labour market training). The answer from the PES in Bulgaria refers to an evaluation of mediation services' effects for job seekers and the answer from the PES in the Netherlands mentions assessments of impacts of three activities on public expenditure. In these two answers, however, the attainment of allocative efficiency, which is the object of CBA, is not explicitly referred to.

Interviews with PES officials in four countries (Austria, Germany, Spain, Sweden) performed by the authors of this report confirm the picture given by the survey that practical applications of CBA in EU PES remain rare, with evaluations and performance measurement tools being used more frequently. Answers to a question about the relative merits of different types of evaluation as an aid to decision-making reveal that evaluations of impacts of activities, projects, etc. on the labour market are of most frequent occurrence, that assessments of effects on public expenditure and income are considered to be of great value but are less frequent, and that CBA is unusual because further guidance is needed on suitable methods, including ways of quantifying impacts which may be more difficult to measure.

Responses to the survey do not give evidence of the contribution of the placement and counselling activities of PES to the social objective of allocative efficiency. Such evidence is, however, found in an evaluation of five Swedish experiments with intensified placement activities for unemployed job seekers. According to CBAs performed, benefits exceeded costs in four of these experiments. Therefore, in these cases intensified placement services represented efficient allocation of resources. Section 2 of the present paper reports this finding but observes also that CBA is not only rare in EU PES but is also, in general, uncommon as an instrument for evaluating European labour market policy measures. Among a number of assessments performed by other parties than the PES described in section 2 CBAs are represented only by the said evaluation of some Swedish experiments and an earlier study of an increase of PES staff.

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Measuring productive efficiency can create organisational learning between countries

Productive efficiency, that is the subject of section 3 of the present report, is defined as attaining the largest production at a given level of input of resources, or as using the least amount of resources to produce a given level of output. Measuring PES productive efficiency at the level of separate offices has been on the research agenda since the early 1980s. The main objective of all studies has been to identify the existence of inefficiency rather than explaining the causes of its existence. In the studies that have been performed the inefficiency, i.e. the production increasing potential or savings potential, lies in the majority of cases between 5 and 30 per cent.[18] Interpreted in production increasing terms this means that it would be possible to increase production by 5–30% without increasing the budget for PES activities. Each study has aimed at measuring efficiency within the PES of a specific country. By utilising homogeneous data from several countries, however, it would be able to benchmark European PES and create an instrument for organisational and management learning between countries.

Explanations for the limited role of CBA in practice

To be of practical importance, CBAs should be related to policy formation and implementation processes within the framework of existing institutional settings. An evaluation culture should therefore be fostered at all levels of the organisation. The PES EU2020 working group points out in a briefing note (PES EU2020 no date A, p. 1) that EU states "show huge differences as to the institutional embedding of public employment services." Such circumstances can help to explain the fact that nine of the seventeen PES that have given answers to the Commission's survey reported that they do not currently use a CBA approach. As is described in section 2.1 of this report, initiation and use of CBA presupposes that decision-makers engage in explicit thinking in terms of alternatives. It is conceivable, however, that socio-political and institutional settings can be such that they rather give rise to more of a reactive kind of decision-making governed by different kinds of signals, control instruments, and rules of thumb. The importance of making a business case on the base of qualitative and quantitative evidence (which CBA can provide) is not only relevant within the PES but also among relevant ministries and political decision makers. It could also mean that CBAs performed by analysts outside the PES need to be further integrated into decision making processes wherever possible (Delander & Niklasson 1996). This is best achieved by demonstrating the added value of such approaches.

Another often proposed explanation for the modest role played by CBA in practice is that real-world applications related to well-defined problems of choice often entails severe difficulties as regards estimating effects on labour market outcomes of projects under consideration. Decision-makers and analysts are confronted with the problem of incomplete, uncertain and perhaps difficult to interpret information about alternative courses of events. Moreover, they have to tackle the complication that impacts do not all occur during the same period. These are problems, however, that cannot be conjured away by using other methods of evaluation or appraisal and may require the design of better monitoring and systems and data availability. In PES EU2020 (no date A, no date B) it is repeatedly stressed that EU PES need to work as efficiently as possible. Implementing the way of thinking that is represented by CBA can contribute to reducing or, at the best, avoiding

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[18] What causes this inefficiency has yet to be explored, however, one can think of at least three different possibilities. One is slack in the production. The other is that it would be possible to increase the matching accuracy so that the measure most suitable always is chosen. A third factor might be related to what type of programme that is used – is it always those programmes that deliver the highest impact for the group of unemployed at a specific employment office?

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inefficiencies as a consequence of **CBA's insistence on explicitness: policy alternatives shall be clearly stated and the corresponding reasoning in terms of the mutual advantages and disadvantages shall be made visible**. These steps of a CBA, that precede the actual calculations, can play a vital role in illuminating consequences from the point of view of efficiency of alternative ways to model and implement PES activities.

<u>Two suggestions: Prepare a non-technical paper on CBA. Promote measuring productive efficiency</u>

A proposal from our side is that a concise, non-technical paper be prepared that describes the *aim* of and the *way of thinking* represented by CBA and its possibilities to make *fruitful contributions* to provide a basis for choices between alternative courses of action in PES. When it comes down to it, decisions have to be made and at the end of the day decision-making means weighing pros and cons of the alternatives under consideration. **To weigh pros and cons is the cardinal point in CBA and the explicitness that is required by CBA in that process can help to steer clear of inconsistencies in public decision-making and contribute to implementing employment policy in an efficient way.** The target group for such a paper should be decision-makers in PES whose role it is to choose between alternative courses of action. Their role is, however, not to make CBAs which is a task for analysts. But for cost-benefit analysts to become engaged in the process, decision-makers have to see advantages of CBA as an aid in decision-making.

A second suggestion put forward here is to **promote measuring productive efficiency of public employment offices** by the approach outlined in section 3 of this report. **By measuring both within country and between countries efficiency it will be possible to not only identify inefficient use of resources at offices in a specific country but also to obtain information for organisational learning from other countries.** Those public employment offices that are used as references for a specific office can serve as models as regards the utilisation of production resources and the organisation of production of employment services. It deserves to be pointed out that comparisons between national PES necessitates not only measurements based on a common theoretical framework, like the one drafted in section 3, but also the application of shared definitions of outputs of PES.

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Appendix 1

Methods to measure efficiency

As will be seen in section 3.3 the DEA method, described in section 3.1, is the most used method for assessing productive efficiency. In this section we give a short overview also of other methods. Interested readers can use the references in this section to get increased knowledge of the different methods. The main point of the section is that there are alternatives to DEA and the choice of method is strongly linked to what question is the focus of the analysis.

There are at least three ways to compute the production possibility frontier. One of the ways is the so called deterministic non-parametric approach, due to Farrell (1957). This method is also called Data Envelopment Analysis (DEA). This label was introduced by Charnes, Cooper and Rhodes (1978). As seen in section 3.3 almost all studies of productive efficiency in PES use a DEA approach. In DEA analysis the inefficiency is computed by solving a linear programming problem, however, no functional form is assumed. The frontier is constructed by using combinations of observed employment offices, as illustrated in Figure 1. A drawback with all deterministic approaches is that they do not provide any information about the statistical certainty.

Another approach to computing the frontier that uses statistical techniques rather than linear programming is the Stochastic Frontier Approach (SFA). This approach was independently developed by Aigner, Lovell and Schmidt (1977) and Meeusen and van den Broeck (1977). The idea is to estimate a production function, but assuming that the "error"-term can be divided into two parts, one part consisting of random error and one part that measures inefficiency. The random error part is assumed to be normally distributed with an expected value of zero, while the inefficiency part of the error term is assumed to have a specific statistical distribution e.g. to be half normally distributed.

A third approach would be to use a deterministic parametric approach, due to Aigner and Chu (1968). Even in this case a functional form is used to model the production but in contrast to the SFA, all deviation from the frontier is seen as inefficiency and the problem is solved with the use of linear programming techniques.

The choice of method is in most cases determined by the question to be answered by the study. **If it targets some kind of marginal analysis, e.g. marginal productivity, shadow prices, etc., a functional form is required which excludes the non-parametric method. However, if inefficiency is the target for the study all methods can nowadays be used.**[19] The main advantage with the SFA approach is that this method produces information on uncertainty that makes it possible to make inferences. The drawback is that the SFA-approach needs an assumption about the functional form. A practical drawback is that it sometimes fails to converge. A second alternative will be to use a deterministic approach and make use of bootstrapping re–sampling techniques to produce information that makes inference possible.

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Table A.1 Previous studies on employment office efficiency

Author	Country	Units	Data year	No. of Inputs	Intermediate outputs	No. of Final outputs	Quality adjusted input	Quality adjusted output	Average inefficiency	Method	No. of Efficient units
Cavin and Stafford (1985)	USA	51	1977–82	1	–	3	–	Yes	–27 to +38%[a]	COLS	n.a.
Torgersen et al. (1996)	Norway	40	1 week 1990	1	–	7	–	–	10%	DEA	21
Sheldon (1999)	Switzerland	126	1997–98	7	–	2	–	–	24%	DEA	55
Torp et al. (2000)	Norway	164	1998	2	–	6	–	–	13%	DEA	47
Althin and Behrenz (2004)	Sweden	297	1993	3	–	3	Yes	–	30%	DEA	48
Althin and Behrenz (2005)	Sweden	253	1992–95	2	–	5	Yes	–	22–26	DEA	50–62
Månsson (2006)	Sweden	297	1993	3	–	3	Yes	–	n.a.[b]	Parametric distance function	14
Vassiliev et al. (2006)	Switzerland	132	1998–99	5	–	1	–	–	15%	DEA	15
Ramirez and Vassiliev (2007)	Switzerland	66	2000	3	–	1	Yes	–	16%	SFA	n.a.
Althin et al. (2010)	Sweden	265	1992–98	5	Yes	3	Yes	–	50%	DEA	n.a.
Kthiri et al. (2011)	Tunisia	82	2006–08	3	–	1	–	–	16–36%	DEA	12–16
Andersson et al. (2012)	Sweden	185	2004–10	7	Yes	2	Yes	–	7–10%	DEA	67–84

[a] This study compares the cost efficiency of different employment offices with that of an average unemployment office.

[b] This study focuses on scale efficiency and scale elasticity.