

14 The Microeconomic Estimation of Treatment Effects - An Overview*

Marco Caliendo¹ and Reinhard Hujer²

¹ DIW Berlin, Abteilung Staat
mcaliendo@diw.de

² Institut für Statistik und Ökonometrie, J.W.Goethe Universität
hujer@wiwi.uni-frankfurt.de

Summary: The need to evaluate the performance of active labour market policies is not questioned any longer. Even though OECD countries spend significant shares of national resources on these measures, unemployment rates remain high or even increase. We focus on microeconomic evaluation which has to solve the fundamental evaluation problem and overcome the possible occurrence of selection bias. When using non-experimental data, different evaluation approaches can be thought of. The aim of this paper is to review the most relevant estimators, discuss their identifying assumptions and their (dis-)advantages. Thereby we will present estimators based on some form of exogeneity (selection on observables) as well as estimators where selection might also occur on unobservable characteristics. Since the possible occurrence of effect heterogeneity has become a major topic in evaluation research in recent years, we will also assess the ability of each estimator to deal with it. Additionally, we will also discuss some recent extensions of the static evaluation framework to allow for dynamic treatment evaluation.

14.1 Introduction

The need to evaluate the performance of active labour market policies (ALMP) is not questioned any longer. Even though OECD countries spend significant shares of national resources on these measures, unemployment rates remain high or even increase. The ideal evaluation process can be looked at as a series of three steps (Fay, 1996): First, the impacts of the programme on the individual should be estimated (MICROECONOMETRIC EVALUATION). Second, it should be examined if the impacts are large enough to yield net social gains (MACROECONOMIC EVALUATION). Third, it

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should be answered if this is the best outcome that could have been achieved for the money spent (COST-BENEFIT ANALYSIS). In this paper we focus on the first step. The main question in microeconomic evaluation is if the outcome for an individual is affected by the participation in an ALMP programme or not. We would like to know the difference between the value of the participant's outcome in the actual situation and the value of the outcome if he had not participated in the programme. The fundamental evaluation problem arises because we can never observe both states (participation and non-participation) for the same individual at the same time, i. e. one of the states is counterfactual. Therefore finding an adequate control group and solving the problem of selection bias is necessary to make a comparison possible.

Depending on the data at hand, different evaluation strategies can be thought of. Since in most European countries - unlike in the US - experimental data are not available, researchers have to use non-experimental data. A lot of methodological progress has been made to develop and justify non-experimental evaluation estimators which are based on econometric and statistical methods to solve the fundamental evaluation problem (see e. g. Heckman *et al.*, 1999). The aim of this paper is to give an overview of the most relevant evaluation approaches and provide some guidance on how to choose between them. Thereby we will also discuss the possible occurrence of effect heterogeneity, which has become a major focus of evaluation research in the last years, and the ability of each estimator to deal with it.

Two broad categories of estimators can be distinguished according to the way selection bias is handled. The first category contains approaches that rely on the so-called unconfoundedness or selection on observables assumption. If one believes that the available data is not rich enough to justify this assumption, one has to rely on the second category of estimators which explicitly allows selection on unobservables, too. We will discuss different approaches for both situations in Section 14.3 where we also present some recent extensions of the static evaluation framework to dynamic concepts. Before we do so, we are going to introduce the evaluation framework in Section 14.2, where we especially present the potential outcome approach, discuss parameters of interest, selection bias on observable and on unobservable characteristics as well as heterogeneous treatment effects. Finally, Section 14.4 concludes.

14.2 The Evaluation Framework

14.2.1 Potential Outcome Approach and the Fundamental Evaluation Problem

Inference about the impact of a treatment on the outcome of an individual involves speculation about how this individual would have performed in the labour market, if he had not received the treatment. The framework serving as a guideline for the empirical analysis of this problem is the potential outcome approach, also known as the Roy (1951) – Rubin (1974) – model.

The main pillars of this model are individuals, treatment (participating in a pro-