The effectiveness of active labor market policies: Evidence from a social experiment using non-parametric bounds

Johan Vikström [a,b,*], Michael Rosholm [c,d,e], Michael Svarer [c,d,e]

[a] Institute for Evaluation of Labour Market and Educational Policy (IFAU), Uppsala, Sweden
[b] Uppsala Center for Labor Studies (UCLS), Uppsala, Sweden
[c] Department of Economics and Business, Aarhus University, Denmark
[d] Centre for Research in Active Labour Market Policy Effects (CAFE), Denmark
[e] IZA, Bonn, Germany

HIGHLIGHTS

• Re-analyze the effects of a Danish active labour market program social experiment.
• Non-parametric bounds used to study the dynamics of the treatment effects.
• The experimental treatment decreased average unemployment duration.

ARTICLE INFO

ABSTRACT

We re-analyze the effects of a Danish active labor market programme social experiment, which included a range of sub-treatments, including meetings with caseworkers, job search assistance courses, and activation programmes. We use newly developed non-parametric methods to examine how the effects of the experimental treatment vary during the unemployment spell. Non-parametric techniques are important from a methodological point of view, since parametric/distributional assumptions are in conflict with the concept of experimental evidence. We find that the effects of the experiment vary substantially during the unemployment spell.

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1. Introduction

We analyze the effects of a social experiment in active labor market policy conducted in two counties in Denmark during the winter of 2005–6. All individuals in the two counties who became unemployed during this period were randomized into either a treatment or a control group. The treated experienced a dramatic intensification of labor market policies in terms of early and mandatory participation in a job search assistance course, very frequent meetings with employment officers, and programme participation after a few months in open unemployment.

This experiment has been analyzed in several previous studies. Graversen and van Ours (2008a) studied the overall effects of the experiment and concluded that the experiment had large positive effects in terms of shorter average unemployment duration. Using mixed proportional hazard (MPH) models, Graversen and van Ours (2008b) found that the experimental policies increased the average re-employment rate with about 30%, and that the treatment effect is rather constant throughout the unemployment spell. Rosholm (2008) as well as Graversen and van Ours (2008b) go beyond the experimental variation and study the effects of the individual elements in the treatment package by taking selection into actual treatments into account within a mixed proportional hazard framework, where they model the re-employment rate and the programme entry rate jointly. Blasco and Rosholm (2011) study how the experiment affects the subsequent employment duration. Gautier et al. (2012) shows that the experiment has general equilibrium effects.

* Corresponding author at: Institute for Evaluation of Labour Market and Educational Policy (IFAU), Uppsala, Sweden.
E-mail addresses: johan.vikstrom@ifau.uu.se (J. Vikström), rom@asb.dk (M. Rosholm), msvarer@econ.au.dk (M. Svarer).

In this paper, we use newly developed non-parametric methods to examine how the effects of the experimental treatment vary during the unemployment spell. Our contribution is to apply the non-parametric bounds developed by Ridder and Vikström (2011) (RV henceforth). Besides the illustrative example in RV, this is the first real application of these bounds. The identification problem leading to bounds arises because we are interested in how the dynamics of the treatment effects are realized during the spell. Analyzing such dynamics of the treatment effects requires identification of the effect on the hazard rate out of unemployment at different stages of the unemployment spell. This leads to identification issues, because of the so-called dynamic selection problem. Specifically, the random assignment only ensures comparability of the treatment and control groups at the start of the unemployment spell. At later times treated units with characteristics that have a positive/negative interaction effect with treatment on the transition probability leave the initial state first/last, so that these characteristics are under/over represented among the treated relative to the controls. This selective outflow from unemployment confounds any simple comparison using observed hazard rates for the treated and controls.

One approach to correct for the dynamic selection problem is to rely on semi-parametric models. As shown by Elbers and Ridder (1982) the mixed proportional hazard (MPH) model is semi-parametrically identified, so that if the multiplicative structure is maintained, identification does not rely on arbitrary functional form or distributional assumptions. However, any estimated effects using the MPH model are only valid if the parametric assumptions underlying the model are correct. Particularly, in the case of a social experiment, where the aim is to provide non-parametric evidence, one may argue that parametric assumptions are especially troublesome. Ideally, we would prefer to rely solely on the experimental variation to estimate the treatment effects of interest.

This is the main reason why we avoid parametric assumptions and instead apply the non-parametric methods provided by RV. They derive non-parametric bounds on the effect on the hazard rate in each time period that are solely based on the random assignment and not on arbitrary parametric assumptions. This enables us to study the dynamics of the treatment effects in detail. RV also provide bounds under additional assumptions. We show that these bounds are highly informative on how the effects of the experiment vary over the unemployment spell. We also relate the non-parametric bounds to other commonly used methods. This includes a theoretical comparison of the RV bounds and Kaplan–Meier survival rate estimates, and a direct comparison of our empirical bounds and MPH estimates.

Understanding the dynamics of the treatment effects is relevant for several reasons. First, it shows how quickly the effects emerge and to what extent the effects persist beyond the period with intensified policies. If there are substantial effects already before the start of the actual policies this point in the direction of important pre-treatment/threat effects. Any effects beyond the period with intensified policies provide insights into the persistence of the effects. Second, the experimental protocol dictated that the experimental policies should be applied at specific unemployment durations. This means that the dynamics of the treatment effects might provide some evidence of the relative importance of the separate policies. Third, we perform detailed heterogenous effect analyses in order to explore to what extent the dynamics of the treatment effects differ between men and women as well as between two age groups of unemployed workers. Hence, we contribute in several ways to the scarce literature on experimental evidence on the effect of training programmes, particularly in Europe.[1]

We find significant treatment effects during periods with intensified job search assistance, frequent meetings with caseworkers, and immediately before scheduled programme participation. The bounds on the programme effect during participation in activation programmes are wide since dynamic selection at that stage is large. We have also tested for heterogeneous treatment effects by age and gender. These results, based on a social experiment, and make less restrictive assumptions than have been used in the past to study the dynamics of the treatment effects, provide important insights that differ slightly from what has been found earlier.

The remainder of the paper is organized as follows; Section 2 describes the social experiment, and Section 3 presents our data and reports descriptive statistics. In Section 4 we discuss the identification of the dynamics of the treatment effects, our non-parametric bounds and relate our bounds to the effect estimates based on survival functions. Section 5 presents the results and Section 6 concludes.

2. The experiment

The social experiment considered in this paper was carried out in the Danish counties of Southern Jutland and Storstrøm. Workers eligible for unemployment insurance (UI) benefits, who became unemployed during the period from November 1, 2005 to February 28, 2006, were randomly assigned into a treatment and a control group. Those born on the 1st to the 15th were assigned to the treatment group, while those born on the 16th to the 31st were assigned to the control group.[2]

The experimental protocol dictated that a sequence of policies should be applied at specific stages of the unemployment spell. Those in the treatment group received a letter after approximately 1.5 weeks in open unemployment telling them about the new policy regime. They were not told explicitly of the randomized experiment, rather they were told that they were taking part in a 'pilot study' regarding a new labor market policy regime. They were also told about the contents of the new labor market policy regime. We label the period before the letter as the 'pre-treatment' period, and the period after the letter the 'new policy letter' period.

After 5–6 weeks of unemployment, the treated were enrolled into a two-week Job Search Assistance (JSA) programme, intended to determine the capabilities of the unemployed worker and helping her to search for jobs. Thereafter, they should meet frequently with a caseworker in order to ensure that they are searching actively and in order to assist them in their job search.[3] We divide this part of the treatment into two time periods; the 'JSA programme' period and the 'frequent meetings' period.

After four months of unemployment the unemployed had to participate in a programme lasting for at least three months. Caseworkers had some discretion in how to allocate workers to programmes. There were 5 types of programmes; the JSA programmes described above, private sector temporary employment subsidy jobs, temporary employment within the public sector, classroom training programmes ranging from IT courses to courses in brick-laying and truck drivers license courses, and finally vocational training programmes in firms.

These programmes may have different effects. Full-time programme participation implies a great loss of utility from leisure. Some of the unemployed workers may therefore perceive programme participation as a threat, which gives them incentives to increase their job search efforts prior to enrolment into the programme. While enrolled, the unemployed have less time to search for employment, in many cases leading to well documented locking-in effects. If the programme provides the unemployed with new abilities, we expect a positive effect once

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[1] The surveys in Kluve (2010) and Card et al. (2010) show that experimental evidence on training programs is scarce. Job search assistance and monitoring experiments have previously been analyzed by e.g. Meyer (1995), Ashenfelter et al. (2005), Dolton and O'Neill (2002) and van den Berg and van der Klaauw (2006). Experimental evidence on pre-programme effects is found in Black et al. (2003) and Hägglund (2006).

[2] It was not possible to escape treatment by leaving unemployment for a short period, since unemployed in the treatment group who return to unemployment during the period of the experiment will re-enter the experiment at the stage where they left it.

[3] In the country of Southern Jutland, meetings were supposed to take place every fortnight, and in the county of Storstrøm meetings would take place each week.