

# Microeconometric Evaluation of Job Creation Schemes - Part I: Individual and Regional Heterogeneity

## 5.1 Introduction

In this chapter we evaluate the employment effects of JCS on the participating individuals in Germany. Given the very informative administrative dataset at hand described in section 4.4, we base the analysis on the conditional independence assumption. Basically, we presented in chapter 1 two approaches which use this assumption: matching and regression. Our decision to prefer matching is based on the discussion in subsection 1.5.4 where we have shown, that matching estimators have some favourable properties regarding common support issues and also provide a very flexible way to allow for heterogeneity in treatment effects. As outlined in section 4.5, we will focus in this chapter on individual (group-specific) and regional heterogeneity, whereas in the following chapter we will concentrate on programme (sectoral) heterogeneity. The importance of individual (group-specific), regional and sectoral heterogeneity for the evaluation of JCS in Germany has been well documented in previous empirical research. The studies of Caliendo, Hujer, and Thomsen (2003) and Hujer, Caliendo, and Thomsen (2004) examine the effects of JCS with respect to these three sources of heterogeneity and find large differences in the effects. Basically there are two shortcomings to these studies. The first one refers to the used outcome variable which allows only to monitor if the individual is registered unemployed or not. This is the same information used by the FEA to calculate the ‘Verbleibsquote’, but does not allow to draw conclusions about the re-integration success into regular (unsubsidised) employment. A second restriction relates to the relatively short observation period after programme start, namely two years. This chapter extends the previous analyses in four directions. First, we are able to evaluate the re-integration effects of JCS into regular (unsubsidised) employment. Second, we can monitor the employment status of participants and non-participants nearly three years after programme start. Third, we also test the sensitivity of the results with respect to various decisions which have to be made during the implementation of the matching

estimator, like the choice of the matching algorithm or the estimation of the propensity scores. Finally, we also test if a possible occurrence of ‘unobserved heterogeneity’ or ‘hidden bias’ distorts interpretation of our results.

Previous empirical findings have shown that the effects of JCS differ with respect to region and gender. There are basically two ways to put greater emphasis on specific variables. One can either find variables in the comparison group who are identical with respect to these variables or carrying out matching on sub-populations (see subsection 3.2.1 for details). We choose the second approach and separate the analysis by these characteristics, i.e. we estimate the effects separately for men and women in West and East Germany. These four groups will be the ‘main groups’ of our analysis. Since it can certainly be assumed that the effects are not homogeneous for sub-populations of these main groups, we estimate group-specific effects, too. Thereby we will not only focus on groups defined by age and unemployment duration (as in Hujer, Caliendo, and Thomsen (2004)), but also on specific problem-groups with disadvantages on the labour market. To be specific, we estimate the effects for individuals without professional training or professional experience, with a high degree, with placement restrictions, for rehabilitation attendants and individuals with health restrictions.<sup>1</sup> This leaves us with eleven ‘sub-groups’ for whom the effects are estimated separately. The situation on the regional labour market might be an additional source of effect heterogeneity. The effects of JCS might differ in regions with high underemployment when compared to prospering regions. To account for that, we additionally evaluate the programme effects with respect to regional differences by using the classification of similar and comparable labour office districts which has been described in section 4.4.

The remainder of this chapter is organised as follows. Since we have already presented the institutional background of ALMP in general and of JCS in specific in section 4.2, we will start with a presentation of the groups we want to analyse and show some selected descriptive statistics for them in section 5.2. The general framework for evaluation analysis has been discussed already in chapter 1, and in chapter 2 we have described matching estimators at length. Hence, section 5.3 of this chapter focusses on the actual implementation of the matching estimator. Since the number of covariates in our data makes the use of covariate matching unfeasible, we rely on propensity score matching. In particular we discuss the justification of the matching estimator (subsection 5.3.1), the estimation of the propensity scores (subsection 5.3.2) and the choice of the proper matching algorithm (subsection 5.3.3) for our situation. Section 5.3.4 deals with common support issues, whereas section

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<sup>1</sup> Clearly, people with a high degree are not individuals with disadvantages on the labour market per se. Nonetheless, we estimate the effects for them, too, out of two reasons. First, they can be seen as the opposite of people without professional training. Second, it might be the case that those people who have a high degree and nevertheless participate in JCS are a special problem group.