Zeitschrift für Wirtschafts- u. Sozialwissenschaften (ZWS) 118 (1998), S. 389 - 413
Duncker & Humblot, Berlin

Does Active Labor-Market Policy Affect Structural Unemployment?

An Empirical Investigation for West German Regions, 1986 to 1993*

By Thiess Büttner and Hedwig Prey**

1. Introduction

In recent years, interest in the effects of active labor-market policy (ALMP henceforth) has considerably increased. This is not only due to a closer look at policy options due to rising labor-market problems. Also, doubts have arisen, as to whether ALMP really contributes to combat unemployment or whether negative side-effects outweigh the benefits. In Germany ALMP is a policy tool dating back to 1969 when the Labor Promotion Law (Arbeitsförderungsgesetz) was enacted. The central instruments of ALMP in Germany are public job-creation schemes and the public support of training measures. When the unemployment rate rose to more than 9 percent in 1983 the scale of active labor-market policy was increased and since then has remained at a high level. And, in the aftermath of unification in 1990 ALMP has been extended substantially in order to deal with the unemployment problem in East Germany. The evaluation of active labor-market programs is therefore of central interest. Up to now the bulk of research on the consequences of ALMP is conducted at the microeconomic level, dealing in particular with the important problem of identification of program effects on the labor-market status of individuals. However, ALMP may have also labor-market consequences at the macroeconomic level, which justify the discussion of the aggregate impact of ALMP.

This paper focuses on the effects of training programs and public job creation on the labor-market matching efficiency in Germany. It is based on

---

* Verantwortlicher Herausgeber / editor in charge: F. B.

** For helpful comments and critical discussion we thank Wolfgang Franz and our colleagues from the University of Konstanz, the participants of a session at the annual meeting of the Verein für Socialpolitik in 1997, and two anonymous referees. We thank Bernhard Grötsch for the help with the data. However, all errors are our sole responsibility.

a disequilibrium approach of the labor market. This approach not only provides an operational concept of mismatch and the Beveridge curve, it may also be implemented into a general model-based macroeconomic analysis of active labor-market policy, where effects on labor demand, wages, and labor supply can be explicitly accounted for. However, the current paper deals with the more narrow issue of whether effects on the matching efficiency and, thus, on the labor-market mismatch can be found. The empirical analysis is based on regional data for West Germany, where the level of active labor-market policy as well as the mix of measures undertaken shows considerable variation. Regional disaggregation within a country has advantages compared to international cross-country studies, which are common in the literature, since unobserved heterogeneity is reduced and policy measures are comparable. Special attention is paid to the endogeneity of labor-market policy. Since the participation in labor-market programs depends on individual characteristics, the analysis makes use of differing regional compositions of the labor force in order to instrument the policy measures. In addition, because local authorities may also directly influence the implementation of programs, the empirical analysis employs as instruments regional determinants of the propensity of authorities to implement ALMP. We do not find a significant effect of training programs on the labor-market mismatch. Yet, our estimates show that job-creation schemes reduce the mismatch. This indicates that job-creation schemes contributed to a reduction in the structural rate of unemployment (SRU) in West Germany during the period under consideration.

The next section gives an overview over the current discussion of the macroeconomic evaluation of ALMP with an emphasis on the methodological problems involved. In section 3 we briefly introduce the disequilibrium framework the analysis is based on. This framework is then applied to data of West Germany's Planning Regions and the resulting regional SRU is discussed in section 4. Section 5 focuses on the endogeneity of the ALMP. Aiming to yield a set of instruments, the determinants of local labor-market policy are considered. Section 6 then presents results on the effect of ALMP on matching efficiency and structural unemployment in West Germany.

2. Macroeconomic Effects of Active Labor-Market Policy

As already mentioned in the introduction, the discussion of consequences of ALMP distinguishes between micro- and macroeconomic impacts. Whereas the former relate to the effects on the participants' labor-market performance like individual employment probabilities, earnings, or unemployment duration, the latter represent impacts of ALMP on macroeco-

nomic variables, like aggregate employment, wages, and aggregate unemployment. In the case of Germany there already exists a large literature on the microeconomic impacts of ALMP, in particular of training programs.[1] However, presumably because of differences in the datasets and in the methods used, still no consensus has been reached on the microeconomic effects of training programs and job creation schemes. Yet, even if a consensus would have been found, the aggregate consequences of ALMP cannot simply be inferred from the microstudies as micro- and macroeconomic impacts do not necessarily correspond to each other.

The central macroeconomic consequences of active labor-market policy are captured by the impact on labor supply, labor demand, wage formation, and the matching process. As this is intensively discussed e.g., in Calmfors (1994), Jackman (1995), or Bellmann and Jackman (1996a) a brief overview on the hypotheses with an emphasis on effects on the matching effiency may suffice. ALMP is supposed to affect the aforementioned aggregates through various channels which can be considered as productivity effects, competition effects, effects on the welfare level of the unemployed, and effects on the search behaviour.

The productivity of program participants increases if the labor market programs improve their qualifications – this may be obvious in the case of training programs, but it may also be a consequence of job-creation schemes when a worker's qualification improves by learning on the job or just by keeping contact with the working life. This may cause additional productivity effects in the sense that excessive loss of human capital during unemployment is prevented. At the macroeconomic level the average productivity of the labor force is increased. Workers may be substituted by more productive ALMP participants but labor demand itself may increase as the cost per unit of efficiency decreases on average. If, however, ALMP participation helps to adjust the participants' qualificational structure towards the demand of employers, matching efficiency improves and employment increases at constant labor demand.

ALMP might also affect the competition in the labor market, when the existence of ALMP programs encourages unemployed not to leave the labor force. Their number can therefore be higher than without the existence of

[1] See e.g., Pannenberg (1995), Lechner (1996a, 1996b, 1996c), Hübler (1994, 1997), Staat (1997), and Fitzenberger and Prey (1997) for microeconometric analyses of training programs in East Germany, and Pannenberg (1995), Pischke (1996), Pfeiffer and Brade (1995), Hujer and Maurer and Wellner (1997a, 1997b), Prey (1997), and Staat (1997) for evaluations of training programs in West Germany. Compared with training programs, micro-econometric evidence on the effects of other labor-market programs is quite rare and concentrates on employment programs in East Germany after unification, see e.g., Steiner and Kraus (1995), Kraus, Puhani and Steiner (1998), or Eichler and Lechner (1998).

ALMP. Employed workers, the insiders, might be forced to reduce their wage claims in order to save their jobs, cf. Layard (1990) and OECD (1993). On the other hand, there are effects on the welfare level while being unemployed, because the existence of ALMP might generate higher income security for the unemployed, or improve their social status. As the alternative state of being unemployed and the corresponding welfare level are important determinants of the opportunity wage of employed workers, ALMP would also lead to higher wage claims in wage negotiations.

ALMP may affect search behaviour, if training programs help participants to improve their job-applications and support their mobility.[2] Then, search duration may be shortened and the matching efficiency rises. Also, participation in ALMP may serve as a positive signal for potential employers of the motivation and qualification of the applicants. It might become easier to find and select the appropiate candidate for a vacancy which leads to lower hiring costs. This would reduce the need for employers to offer high wages for open posts to attract labor. Moreover, the change in the welfare level of unemployed and the resulting increase in the individual reservation wage reduces the probability that a match is formed. This results in an increase in the number of vacancies for a given number of non-employed persons in equilibrium, and, thus, the matching efficiency decreases.

The existing empirical studies analyze the impacts of ALMP on wages, employment, unemployment, and matching by means of reduced-form equations. When estimating the effect of ALMP expenditures on wages in a cross-country analysis during 1985 to 1990, the OECD (1993) found wage-increasing effects in the cases of Ireland and Spain, but only a small or even decreasing impact on wages for the majority of the countries (among them Germany). No clearcut wage effects could be assessed by Kraft (1994) for West Germany, but the results of Pannenberg and Schwarze (1996) revealed a small but significantly negative impact of training measures on East German wages. Employment is found to be positively affected by ALMP-expenditures in the studies of OECD (1993) and Kraft (1994), but the results of Calmfors and Skedinger (1995), on the other hand, indicate that job-creation schemes in Sweden significantly crowded out employment in the period 1966 to 1990. The results of Bellmann and Jackman (1996b) show that during 1975 to 1993 training measures in 17 OECD countries (among them Germany) could reduce the fraction of the long-term unemployed among all unemployed persons while direct job-creation increased the proportion of long-term unemployed. When estimating a matching function Burda and Lubyova (1995) found a positive relationship between ALMP spending and

[2] For a discussion of the effects of ALMP on the matching process, see also Bellman and Jackman (1996b), Layard (1986), OECD (1993), and Franz and Siebeck (1992).

outflows from unemployment into regular jobs for the Czech and Slovak republics. The results of Schmid (1995) also indicate a moderate but positive effect of ALMP on the matching efficiency for Germany, France, and Sweden in the period 1974 to 1989.

With the exception of the studies of Calmfors and Skedinger, Pannenberg and Schwarze, and Burda and Lubyova who use regionally disaggregated data, the results emerge from cross-country estimates and usually compare quite heterogeneous policy measures. Also, there is a serious endogeneity problem involved when evaluating ALMP on the macroeconomic level and different empirical results might stem from different treatment of the endogeneity of active labor-market programs. Especially when analyzing employment or unemployment effects of ALMP, there is a twofold relationship between these variables: ALMP may affect employment and unemployment, but it is also affected by them. Policy makers react to rising unemployment and decide to increase spending in ALMP in order to combat it. At the same time, employment and unemployment will be affected by the size and the implementation of labor-market programs. Thus, ALMP should not be treated as exogenous to (un-)employment. For a formal discussion of the endogeneity problem, see Jackman (1995) or Bellmann and Jackman (1996b).

We use regionally disaggregated data for 74 Planning Regions of West Germany. The policy measures under consideration are very similar as active labor-market policy in Germany is centrally financed and organized by the federal employment service (Bundesanstalt für Arbeit). However, the local administration of ALMP obliges the local employment service (Arbeitsamt) and there remains some space for variation in the local implementation of policies aimed at the unemployed. Among the determinants of regional program implementation we suppose some to be independent of the (current) local unemployment rate. These variables will be used as instruments for our indicator variable of ALMP. We will come back to these issues in section 5.

3. The Disequilibrium Framework

Our analysis is based on a disequilibrium framework which we think is a natural starting point for the study of aggregate consequences of labor-market policy. It is based on the notion that the aggregate labor market consists of several micro markets for individual qualifications and industries, which are in a temporary disequilibrium. Either labor demand, LD_i, or labor supply, LS_i, cannot be realized because of adjustment costs, because of institutional settings, or because of short-run price rigidities, see Smolny (1993) and Franz (1993). The aggregation of the micro markets indexed by i leads

to the existence of aggregate unemployment, because mismatch-effects prevent a complete offset of excess labor demand and supply that are found at the microeconomic level. It can be shown that – under reasonable assumptions – aggregate employment is formally represented by a CES-type function stating the following relationship between aggregate employment or labor transacted (LD), aggregate labor supply (LS), and aggregate labor demand (LT), see Lambert (1988):

$$LT = [LD^{-\rho} + LS^{-\rho}]^{-1/\rho} \,. \tag{1}$$

Figure 1 gives a schematic view on the labor market. Actual employment, LT , is always below the minimum of (LD, LS), represented by the bold part of the labor demand and the labor supply schedule. The parameter ρ determines the deviation of actual employment LS from the minimum condition of the micro markets. As we focus on ALMP we distinguish the regular labor market and the ALMP-supported labor market. Persons who are currently participating in an ALMP program (ALMP in Figure 1) are not part of regular employment, but merely belong to the distinct labor-market group of the non-employed. The difference between the labor supply schedule and the LT schedule in figure 1 therefore represents aggregate non-employment or joblessness which consists of registered unemployed persons (U in Figure 1) plus ALMP participants. The difference between regular labor demand and regular employment corresponds to the number of vacancies (V in Figure 1). The parameter $\rho > 0$ can be interpreted as an indicator of the matching

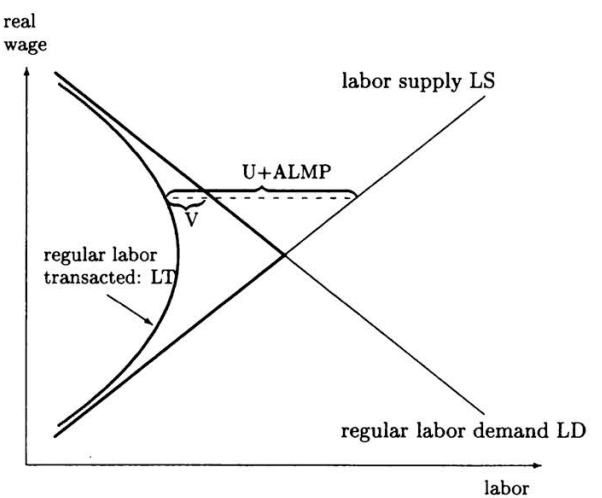

Figure 1: Labor Market in Disequilibrium

efficiency between labor supply and regular labor demand. For $\rho \to \infty$, the schedule is identical with the bold part of LS and LD in Figure 1 and the minimum condition of the micro markets is fully mirrored at the aggregate level. For $\rho \to 0$, the area between LT and the bold part of LS and LD is largest and mismatch is at its maximum.

From the estimated ρ the structural rate of unemployment (SRU) can be derived. It denotes the unemployment rate which would exist if labor demand and labor supply were identical in size. The SRU is derived from equation (1) when labor demand equals supply ($LS = LD$):

$$SRU = 1 - 2^{-1/\rho} . \tag{2}$$

As shown by Franz and Smolny (1994), the model can be represented by a Beveridge curve. The unemployment rate ur and the vacancy rate vr can be expressed by $ur \equiv (LS - LT)/LS$ and $vr \equiv (LD - LT)/LD$, respectively, and the following relationship between unemployment and vacancies emerges from equation (1):

$$1 = [1 - ur]^{\rho} + [1 - vr]^{\rho} . \tag{3}$$

Whereas this underlying specification of the Beveridge curve requires that unemployment and vacancies are always at their long-run equilibrium levels, the empirical Beveridge curve displays cyclical shifts (see Blanchard and Diamond (1989), Franz and Smolny (1994)). In order to capture those short-run dynamics the basic CES function can be extended to a formulation which controls for sluggish adjustment, see Franz and Smolny (1994) and Multhaupt (1996). The dynamic representation of equation (1) is given by:

$$LT_t = \left[LD_t^{-\rho} + LS_t^{-\rho} + \left((1 - \delta)LT_{t-1}\right)^{-\rho}\right]^{-1/\rho} . \tag{4}$$

Now, it is assumed that the minimum condition of the micro markets is not only subject to labor demand and labor supply but also to the employment of the previous period. Changes in employment take time and cannot exceed the rate δ. The long-run SRU for the dynamic case is defined as (cf. Franz and Smolny (1994)):

$$SRU = 1 - \left(\frac{1 - (1 + \delta)^{-\rho}}{2}\right)^{1/\rho} \tag{5}$$

As the parameter ρ represents a measure of matching efficiency, we focus on its possible determinants. In particular, we are interested in the question

whether programs of ALMP can contribute to a significant increase of ρ, that is a reduction of mismatch and, thus, a reduction of the SRU. To put it differently, we are interested in the question whether the programs increase aggregate employment at given labor demand and supply.

Before endogenizing the parameter ρ of equations (1) or (4) by making it a function of ALMP measures, the following sections present some results concerning the regional differences in the SRU, as defined by the disequilibrium concept, and deal with the endogeneity of ALMP measures.

4. Structural Unemployment in West Germany's Regions

In order to estimate the effect of ALMP on the matching efficiency regionally disaggregated data for West Germany in the years 1986 to 1993 have been collected from a number of sources. The regional units of observations are the 74 Planning Regions (Raumordnungsregionen). The 74 Planning Regions are aggregates of 327 districts (Kreise und kreisfreie Städte) designed to combine major towns and cities with their related hinterland and to give a reasonable approximation of regional labor markets.

The application of the disequilibrium framework as a precondition requires operational definitions of the three labor-market quantities labor supply (LS), labor demand (LD), and labor transacted (LT). For that purpose data on registered employment from the social-security statistics, on registered unemployment, on vacancies, as well as on program participation are used. However, there are conceptual difficulties, as registered employment may contain participants in labor-market programs. This is especially relevant for participants in job-creation schemes (so-called Arbeitsbeschaffungsmaßnahmen, ABM for short), as these are almost completely statistically treated as employed during the program, since they contribute to the social-security system. It is much less relevant for participants in training measures (so-called Fortbildungs- und Umschulungsmaßnahmen, FUU for short) as they are statistically treated as a distinct labor-market group – except for a few persons who are publicly supported while still being employed and who are covered by the social security statistics. Also, they are not regarded as part of the registered unemployed. Therefore, only ABM participants are subtracted from registered employment in order to obtain regular employment. Labor supply is defined as regular employment plus registered unemployment plus participants in both ABM and FUU. And total unemployment consists of registered unemployment plus participants in ABM and FUU.

The impact of these definitions of labor supply, labor demand, and regular employment on the measured rate of unemployment is displayed in Table 1.

Table 1

Unemployment Among the Planning Regions, 1986-93

	Average Rate of Unemployment		Structural Rate of Unemployment		
	uncorrected	corrected	uncorrected	corrected	
				static	dynamic
	(1)	(2)	(3)	(4)	(5)
Minimum	3.99	4.89	2.46	2.81	2.71
Maximum	13.46	18.14	5.09	6.21	4.77
Mean	7.58	9.77	3.40	3.88	3.51
Coeff. of Variation	0.34	0.34	0.19	0.19	0.13
Bottom Tenth	4.43	5.90	2.67	3.05	2.92
Top Tenth	11.18	13.97	4.22	4.87	4.11

Notes: Numbers in percent, uncorrected: employment, labor demand, and supply defined without active labor-market policy, corrected: employment, labor demand, and supply corrected for program participation (see text).

Column (1) reports statistics for the average rate of unemployment defined as the number of unemployed divided by the sum of registered employment and the number of unemployed, i.e. without taking program participants into account. In contrast to that, column (2) displays statistics for the average rate of unemployment, defined as the number of unemployed and participants in active labor-market programs divided by the sum of registered employment, unemployment, and FUU participants. Whereas the extreme observations and the mean increase, the coefficient of variation remains constant, indicating that neglecting ALMP participation leads to underestimation of unemployment but does not affect the distribution of unemployment.

In order to see the quantitative difference to structural unemployment as resulting from the CES approximation to labor-market disequilibrium consider a basic estimation including only regional and time effects:

$$\ln LT_{r,t} = -(1/\rho_{r,t}) \ln[LD_{r,t}^{-\rho_{r,t}} + LS_{r,t}^{-\rho_{r,t}}] + \varepsilon_{r,t} \,. \tag{6}$$

$$\rho_{r,t} = \alpha_0 + \alpha_r + \beta_t \,, \quad \text{with} \quad \sum_r \alpha_r = 0 \text{ and } \sum_t \beta_t = 0 \,, \tag{7}$$

where r is the regional, t is the time index, α_r is the region-specific effect, β_t is the time-specific effect, and $\varepsilon_{r,t}$ is the residual. Application to the

Planning Regions by means of nonlinear least squares in the eight consecutive years between 1986 and 1993 yields region-specific parameters ($\rho_r = \alpha_0 + \alpha_r$). The corresponding regional SRU estimates can then be calculated using equation (2). Column (3) of Table 1 displays some statistics for the regional SRU based on the definition of labor-market aggregates without ALMP. Compared to the average unemployment rate in column (1) the figures are much lower, indicating regional rates of structural unemployment to vary between 2.46 % and 5.09 %. Column (4) reports statistics for regular employment and regular labor demand and the extended labor supply definition. The estimated rates of structural unemployment are varying between 2.81 % and 6.21 % which is somewhat larger. However, the numbers are still much lower than the corresponding average unemployment rates as depicted in column (2). According to the coefficient of variation, also the dispersion of SRU estimates is much smaller than that of average unemployment rates. Therefore, differences in mismatch are not the only determinant of the regional dispersion of unemployment.

One might also apply the dynamic extension of the CES equation (see equation (4) above), which takes into account sluggish employment adjustment.

$$\ln LT_{r,t} = -(1/\rho_{r,t}) \ln \left[LD_{r,t}^{-\rho_{r,t}} + LS_{r,t}^{-\rho_{r,t}} + \left((1+\delta)LT_{r,t}\right)^{-\rho_{r,t}} \right] + \varepsilon_{r,t} \,. \tag{8}$$

where $\rho_{r,t}$ is given by equation (7), as above. Note that the adjustment parameter (δ) is assumed to be equal across the regions, which presupposes that the speed of employment adjustment is a national rather than a regional characteristic. Application to the regional data yields a similar set of region-specific matching parameters, which give rise to SRU estimates as defined by equation (5). Column (5) in Table 1 displays statistics obtained from an application to corrected labor-market quantities. As compared to estimates without dynamic adjustment in column (4) the figures are reduced and also show smaller dispersion. Further insights into the regional SRU estimates can be obtained from an inspection of figure 2.

It plots the SRU estimates obtained from the adjusted labor-market quantities using the static and dynamic CES approach, corresponding to columns (4) and (5) of Table 1. Both plots display a characteristic north-south disparity with lower rates of SRU in the south. The largest rates are found in the north-western area (Ostfriesland). The industrialized Ruhr and Saar regions also show larger values. Generally, the estimates seem to be in line with the common belief about the location of larger structural labor-market problems.

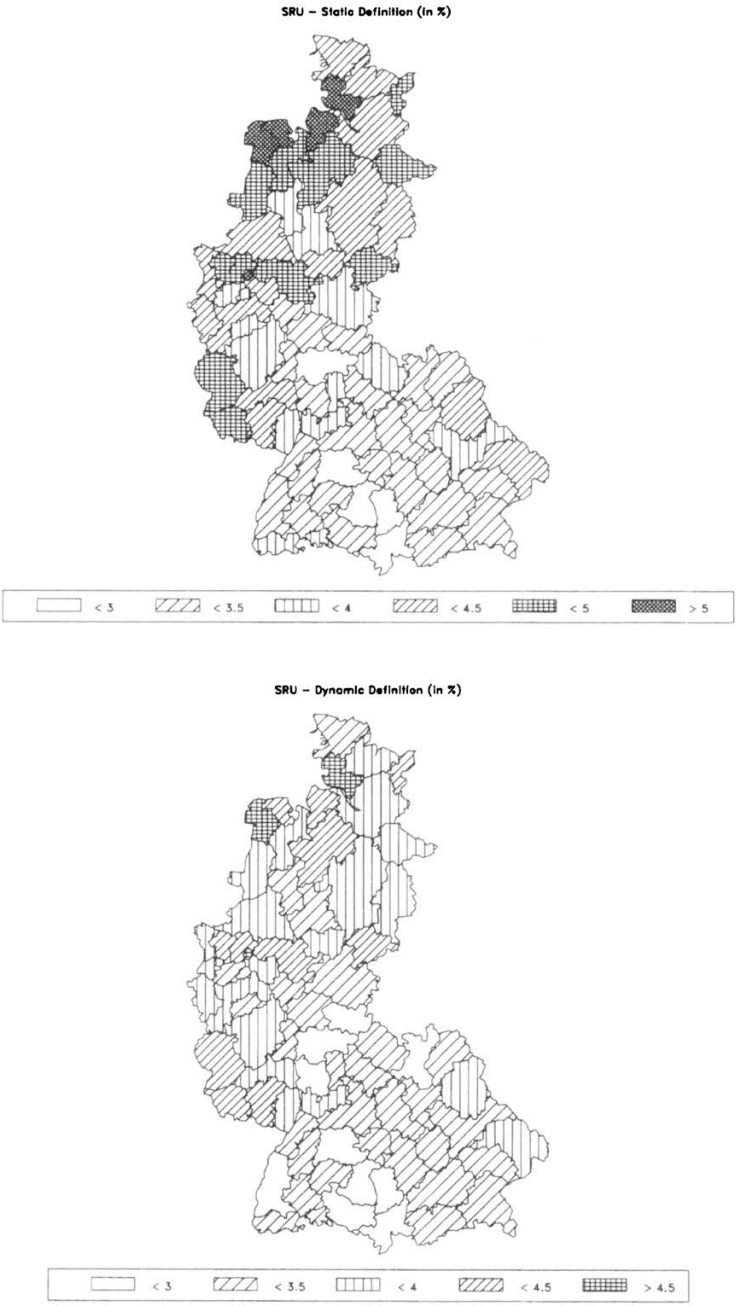

Figure 2: SRU in the Planning Regions, 1986 - 1993

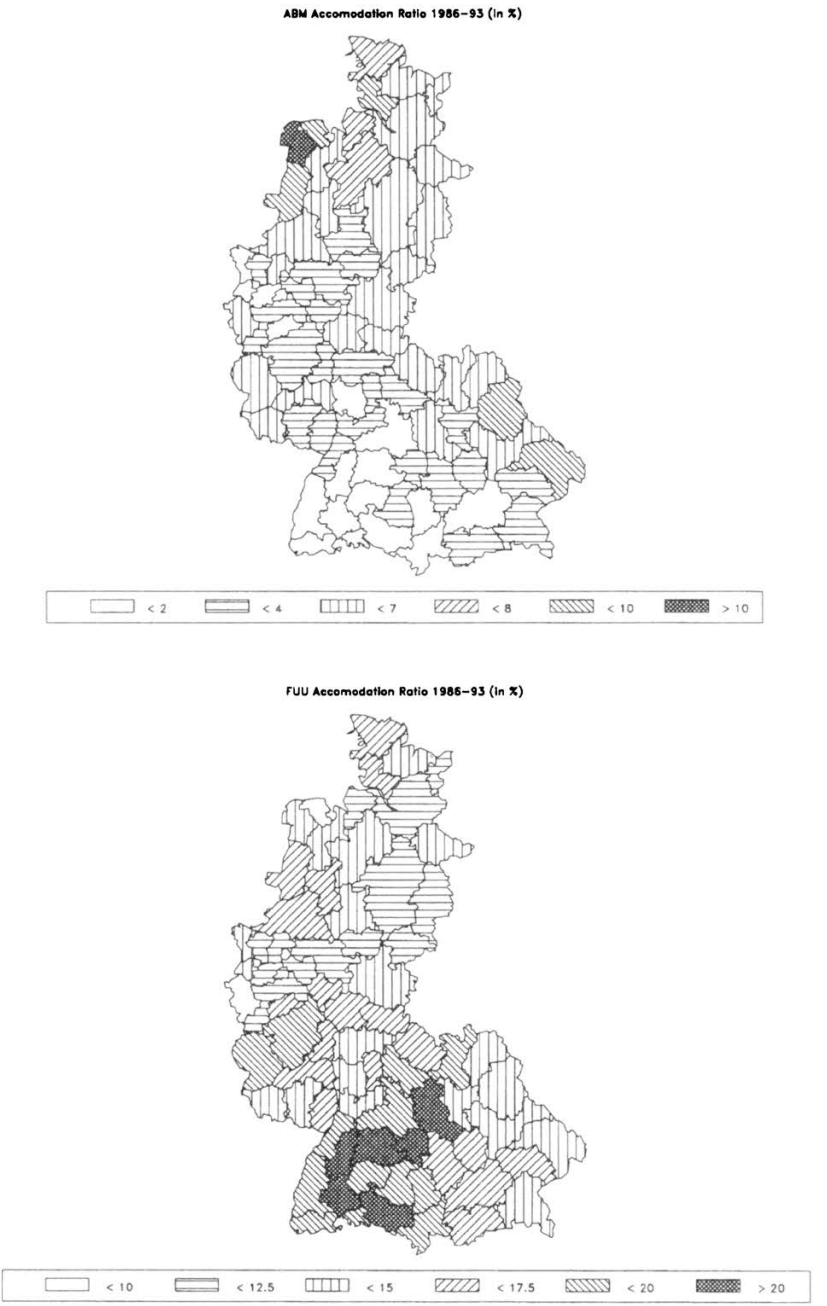

Figure 3: Accomodation in ALMP Measures, Average 1986 - 1993

5. ALMP and Regional Labor-Market Mismatch

Following Calmfors and Skedinger (1995) the local activity in labor-market programs can be measured by the share of program participants in the total number of jobless. The jobless, in turn, are defined as the registered unemployed plus the program participants. Calmfors and Skedinger (1995) refer to this indicator as the accommodation ratio. We will follow this notation and refer to our ABM and FUU variables as ABM accommodation ratio and FUU accommodation ratio in the remainder.

Figure 3 depicts the average regional accomodation ratios. They clearly show regional variation in the policy mix, since the south-western regions are engaged in FUU, whereas northern regions favor ABM. Comparing figures 3 and 2, a noticeable regularity emerges, which points to a relationship between the accommodation ratios and the SRU across the Planning Regions. In the south of Germany FUU accommodation ratios are high and the SRU is low. In the north one finds high ABM accommodation ratios along with a high SRU. This might imply that ABM are less successful in reducing structural unemployment than FUU. But it might also be the case that in regions with high SRU policy reacts with increasing ABM. Two types of policy reaction can be distinguished. On the one hand, programs are targeted on those suffering from unemployment, and, thus, participation reacts passively to an increase (decrease) in unemployment as more (less) people become eligible to program participation. On the other hand, depending on the institutional characteristics of ALMP, local authorities may also react to unemployment for political or personal reasons and directly change the ALMP implementation.

Financial support for ALMP programs is tied to individual characteristics. But there are a few regulations which suggest a possible influence by local authorities. For example, a local parliament can decide on the provision of institutions eligible for financial support, therefore encouraging unemployed persons to participate in ALMP programs. Also, there is the possibility that local authorities initiate labor-market programs (FUU, ABM), overtake some of the costs, and then receive additional financial support from the federal employment service – even if not all of the participants fulfill the requirements.[3] According to the Labor Promotion Law support for ABM schemes can only be granted if the activity is augmentative and not substituting regular jobs. But there is some room for interpretation which can be exploited, locally. The administrative order for ABM contains a pas-

[3] For example, Huebner et al. (1992) describe the case of Bremen, where the authorities cooperated with the local employment service. They started a program for fighting long-term unemployment, where one third of the participants would not have been eligible by normal standards („Sozialhilfeempfänger", welfare recipients), cf. Huebner et al. (1992), p.35.

sage advising the preferred inclusion of unemployed persons into ABM who have serious problems finding a job. Thus, the director of the local employment service may declare further persons not necessarily fulfilling the requirements for financial support as being eligible, if there are serious labor-market problems within the region (see ABM-Anordnung 1984, § 2, par. 2, no. 5). The consequences of this administrative order depend on the balance of power within the local policy area. In some cases, this passage has been used by local political authorities to influence the structure of program participation (see, for example, Huebner et al. (1992), p. 34), as they included persons into the programs who would normally not be eliglible, for example welfare recipients or university leavers. This also points to the often mentioned occurence that local governments try to put welfare recipients into labor-market programs, thus shifting the cost of welfare aid from the local community to the federal employment service.

Considering these incentives and the options of local governments to influence the structure of program participants and the expenditures for ALMP programs within the region, we included two groups of variables into our set of instruments: those which reflect the structure of the population and labor supply and those which reflect the local propensity to implement instruments of ALMP, e.g., political majorities and the proportion of welfare recipients in the population. One might argue that local political majorities are also influenced by a tight labor-market situation as voters may vote for those politicians or parties which they think have the best labor-market policy. A similar argument can be applied to the inclusion of welfare recipients into our set of instruments, as their local number might be related to the local unemployment problem. However, we use lagged variables as instruments and test for their validity.

6. Empirical Results

Testing for the effects of ALMP is done by augmenting the equation for the matching-efficiency parameter (7) by a linear function of the accomodation ratios:

$$\rho_{r,t} = \alpha_0 + \alpha_r + \beta_t + \gamma^{ABM} accr_{r,t}^{ABM} + \gamma^{FUU} accr_{r,t}^{FUU} , \quad \text{with:} \sum_r \alpha_r = 0 \text{ and } \sum_t \beta_t = 0 , \tag{9}$$

where $accr^{ABM}$ and $accr^{FUU}$ denote the two accomodation ratios. If ALMP contributes to an increase in the matching efficiency, we would observe a positive impact on $\rho_{r,t}$ which is inversely related to the SRU (see equation (2)).

Table 2

The Effect of ALMP on Labor-Market Matching Efficiency

Dep. Variable	$\rho_{r,t}$				$\ln LT_{r,t}$
Method	LSDV	LSDV	LSDV (IV)	GMM	NL2SLS
Observations	592	518	444	444	444
	(1)	(2)	(3)	(4)	(5)
δ					0.13 (4.87)
$\rho_{r,t-1}$				0.51 (6.19)	
$accr_{r,t}^{ABM}$	8.27 (1.25)				
$accr_{r,t}^{FUU}$	7.37 (1.52)				
$accr_{r,t-1}^{ABM}$		31.74 (3.71)	84.65 (4.57)	58.98 (2.61)	59.73 (2.72)
$accr_{r,t-1}^{FUU}$		-4.02 (-0.74)	1.80 (0.11)	3.79 (0.25)	-20.30 (-0.96)
$\Delta accr_{r,t}^{ABM}$				-6.67 (-0.31)	
$\Delta accr_{r,t}^{FUU}$				4.23 (0.49)	
$GB \times$ 1991-93	1.05 (3.23)	1.13 (3.45)	1.48 (4.02)	0.46 (1.10)	1.97 (3.30)
$\chi^2[\alpha_r = \alpha]$	4169(73)	4818(73)	3804(73)		4322(73)
$\chi^2[\beta_t = \beta]$	101(7)	82.9(6)	51.9(5)	32.1(5)	26.1(5)
χ^2[overrid. restr.]			30.0(20)	48.2(37)	26.4(20)
1st order				-4.848	
2nd order				-0.068	

Notes: t-statistics in parentheses are based on heteroscedasticity robust standard errors following White (1980). Estimates in columns (1),(2),(3), and (5) are obtained from estimation with regional fixed effects, statistics for their joint significance are denoted with $\chi^2[\alpha_r = \alpha]$. The corresponding degrees of freedom are in parentheses. Estimates in column (4) are obtained from estimation in differences, applying the procedure proposed by Arellano and Bond (1991). The estimates displayed are the one-step estimates. All estimations also employ time effects, statistics for their joint significance are labelled with $\chi^2[\beta_t = \beta]$. At the lower part of columns (3)-(5) statistics for the overidentifying restrictions are displayed with degrees of freedom in parentheses. In column (3) and (5) they are computed following Davidson and McKinnon (1993, p.236). The statistic in column (4) is the counterpart suggested by Arellano and Bond (1991), who also proposed the test for serial correlation. See text for further explanations.

When employing the static CES function (see equation (6)) the estimation can be separated in two steps. In the first step, for each triple of labor-market observations $(LD_{r,t}, LS_{r,t}, LT_{r,t})$, $\rho_{r,t}$ can be solved by numerical methods. In the second step, the estimation can be carried out using $\rho_{r,t}$ as the dependent variable. As it allows to circumvent the nonlinear least squares estimator this separation makes estimation more transparent and facilitates the

testing of specification. However, when using the dynamic CES function (see equation (8)) this separation is not possible.

Table 2 shows the results of our analysis. The table starts with a basic specification. In the first column, results of a regression are displayed where the matching-efficiency parameter is regressed on the contemporaneous accommodation ratios. To account for average differences among regions and years, we included regional and time specific fixed effects. As regions close to the German Border might be more strongly affected by unification we also control for a region-specific time effect, as this is not related to ALMP. This is captured by the interaction term between regions situated at the German Border and the after-unification period ($GB \times 1991 - 93$). Because the Breusch-Pagan test revealed the presence of heteroscedasticity, inference is based on heteroscedasticity robust standard errors by using the method of White (1980). According to the χ^2 statistics the regional as well as the time effects are highly significant. Also, the time specific border dummy is significant, indicating that ρ has increased in those regions. This might be seen as counter intuitive, because actual labor-market problems have increased in those regions after unification. However, the elimination of the border provided those regions with a less peripheral situation, which might explain the decrease in the structural rate of unemployment. Also, labor supply in these regions increased because of migration and commuting from former East Germany. This might have put strong pressure on the reservation wages of job seekers. Turning to the accomodation ratios column (1) does not show any significant effects. Since ALMP programs last for a longer time, the impact might not be visible in the same year while people are still participating in the program. Moreover, the endogeneity of the ALMP programs renders it difficult to identify the effects. As the participants are to a large extent recruited from the pool of unemployed, the accommodation ratios at time t might merely reflect the region's previous unemployment problem, and not the effect of the program. Because unemployment is negatively correlated with the parameter ρ, we expect the coefficients of the accommodation ratios to be downwards biased if an endogeneity problem exists. This hypothesis is confirmed when looking at column (2) of Table 2 where the lagged ALMP variables, i.e. the values of the previous year, enter the ρ-equation. In the case of ABM there is a significant positive effect, whereas the coefficient of FUU is not significantly different from zero. The estimation therefore supports a positive effect of ABM on the matching efficiency ρ. Recalling that the parameter ρ is inversely related to the SRU (see equation (2)), on basis of this estimation it can be deduced that those measures decrease the SRU.

The issue of the endogeneity of ALMP is further explored by the application of an instrumental variable approach, where the accommodation ratios

are instrumented by a number of exogenous variables. Following the suggestions in the previous section, two groups of instrumental variables are employed. One group reflects the structure of the labor supply with respect to sex and age. The second group consists of variables which determine the propensity of local authorities to press for labor-market policies, namely the proportion of welfare recipients in the population and a variable indicating whether the majority of votes is given to specific political parties within a Planning Region. Since the individual contribution of most instruments as explanatory variables for both types of ALMP is weak, the contemporaneous as well as the lagged values of the instruments were employed. (The results of regressions of the accommodation ratios on the set of instruments used for the estimates are presented in Table 4 in the appendix.) The effect of this instrumental variable approach on the estimate of the matching efficiency can be seen in column (3) of Table 2. According to the test of overidentifying restrictions, the set of instruments cannot be rejected at the 5 % level of significance. Whereas the coefficient of the ABM accommodation ratio increases, the FUU accomodation ratio still shows no effect. As the instruments have weaker explanatory power in case of FUU, the latter result should not be overemphasized. However, the instrumental variable procedure supports the above result, that ABM tend to increase ρ and, thus, decrease the labor-market mismatch.

Allowing for one or more lags in the response to the labor-market policy by employing lagged accomodation ratios might capture only part of the dynamics on the labor market, if there is sluggish adjustment in the labor market. To see, whether this is relevant for the results, we specified a dynamic model, where ρ is assumed to adjust slowly to its long-run level. Under this hypothesis, if higher order lags can be neglected, the equation for the matching efficiency becomes:

$$(10)\quad \rho_{r,t} = \gamma_1^{ABM}\Delta accr_{r,t}^{ABM} + \gamma_1^{FUU}\Delta accr_{r,t}^{FUU} + \eta\rho_{r,t-1} + \alpha_0 + \alpha_r + \beta_t + \gamma_2^{ABM} accr_{r,t-1}^{ABM} + \gamma_2^{FUU} accr_{r,t-1}^{FUU} + \varepsilon_{r,t}\ .$$

Now $\rho_{r,t}$ evolves according to an error-correction process with γ_1 capturing the short-term impact of ALMP, η reflecting the adjustment speed, and γ_2 capturing the long-run impact of ALMP on the matching efficiency parameter. As standard estimation is biased in a dynamic panel data setting with only a short-time period, we take resort to the Arellano and Bond (1991) instrumental variable approach in order to instrument for the lagged endogenous variable. Due to computational restrictions in the number of instruments employed, we could not, however, apply the Arellano and Bond (1991) procedure of using all conditional moment restrictions also to the instrumentation of the accomodation ratios. Instead, beside lagged values of ρ, with the purpose of identifying effects of the accomodation ratio the same

set of instruments is employed as in column (3). The results are displayed in column (4). Lagged changes in the accomodation ratios did not show any significance and are excluded. The lagged value of ρ is highly significant, indicating that there is indeed an adjustment process of ρ towards its equilibrium level. But, the estimation again shows a significant positive effect of ABM.

An alternative approach to deal with labor-market dynamics is to directly account for them in the measurement of the matching parameter ρ. It was already discussed, that instead of dealing with the matching efficiency of the standard Beveridge curve, this formulation gives a concept of matching efficiency in the long-run Beveridge curve. Therefore, the estimated parameter ρ should display no short-run fluctuations. Yet, when employing the dynamic version of the CES function the ρ equation and the dynamic CES function have to be estimated simultaneously by nonlinear least squares techniques. In order to deal with the endogeneity of ALMP in the same way as in column (3) and (4) the nonlinear instrumental-variable estimator of Amemiya (1974) with the same set of instruments as in column (3) is appropriate. As displayed in column (5), the adjustment parameter δ is significant, indicating that growth of employment cannot exceed 13 %. According to the test of overidentifying restrictions, the validity of instruments cannot be rejected at the 10 % level. The results concerning ALMP support the findings from the static CES function, since the positive effect of the ABM and the insignificant effect of the FUU are confirmed.

To summarize our results, irrespective of whether the static or the dynamic CES concept of mismatch is applied, we find that an increase in ABM reduces the structural rate of unemployment. However, no effects are found for the FUU.

7. Summary

This paper has analyzed the macroeconomic impact of two prominent instruments of active labor-market policy (ALMP), namely programs to support training and job-creation schemes, on the labor-market matching efficiency in West Germany for the period from 1986 to 1993. We suggest to evaluate the effect of ALMP on labor-market mismatch by using a disequilibrium approach. It is based on the notion that single segments of the labor market may be in a temporary disequilibrium. The aggregation of those micro markets delivers an indicator of labor-market mismatch and implies a well defined structural rate of unemployment. The disequilibrium approach not only provides an operational concept of labor-market mismatch, but

may also be embedded into a larger macroeconomic framework, where also other effects of labor-market policy such as effects on labor demand and labor supply can be taken into account.

However, the present study has focused on the direct effects on the labor-market matching efficiency in the West German regions. As suggested by the discussion of the terms and conditions of labor-market policy and in particular of local policy options, lagged values of welfare recipients, votes, female participation, and other characteristics of the population are used as instruments in order to identify the effects of ALMP. The results of our investigation give a disappointing picture of training programs, as we do not find any effect of those programs on the matching efficiency for the period under consideration. Yet, for job-creation schemes the estimates reveal positive effects on the mismatch parameter, indicating that they contributed to a reduction of the labor-market mismatch. However, for two reasons this result is not sufficient for a final judgement of ALMP. First, the institutional design of the measures may favor the identification of the effects of job-creation schemes rather than of training programs. And, furthermore, other effects of ALMP on labor demand, labor supply, and wages have not been taken into account, Therefore, our investigation should be regarded as a first step into the systematic discussion of macroeconomic effects of active labor-market policy in Germany.

Appendix

1. Descriptive Statistics

The upper part of Table 3 is concerned with variables employed in the estimation of mismatch, the lower part reports statistics of the instruments. The last three variables report the votes for the districts. For each district the share of votes accruing to the Social Democrats (SPD) has been computed. A dummy variable has been constructed, representing whether more than half of all votes went to the Social Democrats. The district level value of the dummy was then weighted with the district's population share to get observations for Planning Regions. The other variables report whether the sum of the votes for the Social Democrats and the Green party, or the Liberal party additionally makes up the majority of all votes in a Planning Region. Note that the variables are defined exclusively: for example, if the Social Democrats received more than 50 % of all votes in a region, only the SPD dummy was set to unity.

2. Sources of Data

- Registered employment and female registered employment at the district level are taken from the statistics of employees (Beschäftigtenstatistik). It covers all employees which are obliged to contribute to the social-security system. It is referenced on June 30th of each year.

Table 3

Descriptive Statistics for Pooled Observations

Observations	74 regions, 8 years				
Variable	Mean	Std.dev.	Coeff. of Var.	Min.	Max.
ABM Participants*)	1.159	1.268	1.094	0.019	8.206
FUU Participants*)	4.143	3.102	0.749	0.997	18.53
Registered Unemployment*)	24.98	22.53	0.902	4.515	137.4
Registered Vacancies*)	3.336	3.344	1.002	0.419	28.35
Registered Employment*)	288.0	233.0	0.809	63.2	1137.1
Joblessrate	0.098	0.035	0.357	0.039	0.221
Accomodation Ratio ABM	0.039	0.027	0.692	0.002	0.160
Accomodation Ratio FUU	0.152	0.042	0.276	0.070	0.279
Welfare Rec. per Tot. Pop.	0.037	0.015	0.405	0.011	0.077
Share of Women in Labor Supply	0.416	0.027	0.065	0.327	0.477
Share of Women in Population	0.516	0.005	0.010	0.504	0.532
Share of Young in Work. Pop.	0.207	0.024	0.116	0.152	0.296
Share of Old in Work. Pop.	0.097	0.227	2.340	0.000	1.000
Maority of Votes: SPD					
SPD-GREEN	0.192	0.272	1.417	0.000	1.000
SPD-GREEN-FDP	0.093	0.166	1.785	0.000	0.730

Note: *) in thousands.

- The registered vacancies, the registered unemployed, as well as the participants in FUU (Maßnahmen zur beruflichen Fortbildung und Umschulung) and ABM (Allgemeine Maßnahmen zur Arbeitsbeschaffung) are taken from the statistic of the federal employment service. They refer to the 141 employment service districts (Arbeitsamtsbezirke). They have been assigned to Planning Regions (Raumordnungsregionen) by a key, obtained from the federal office for regional planning (Bundesforschungsanstalt für Landeskunde und Raumordnung) in Bonn. All data are referenced on September 30th of each year.
- Female unemployment has been computed from registered unemployment by using the share of female unemployed as reported at district level in the Eurostat-Regio database.

- The population of working age is defined as the population between the ages of 15 and 65. The younger population of working age refers to the ages 15-25, and the elder working population refers to the ages 50-65. The data source is the official statistic on population, and data have been obtained from the federal office for regional planning as well as the statistical office of Nordrhein-Westfalen. The data are referenced on December 31st of each year.
- The share of welfare recipients (Empfänger laufender Hilfe zum Lebensunterhalt außerhalb von Einrichtungen) in the population have been obtained from the federal office for regional planning. The data are referenced on December 31st of each year.
- The data on votes for the district communities have been obtained from the statistical offices of the states (Statistische Landesämter). They generally refer to the last election of the district parliament (Kreistagswahlen).

Table 4

Instrumenting ALMP

Dep. Variable	Accomodation Ratio ABM		Accomodation Ratio FUU	
		Lag		Lag
Welfare Rec. per Tot. Pop.	-0.05 (-0.27)	0.28 (1.32)	-0.83 (-2.39)	-0.42 (-0.11)
Share of Women in Labor Supply	0.10 (0.55)	-0.49 (-2.76)	0.23 (0.71)	-0.56 (-1.66)
Share of Females in Population	0.78 (1.19)	0.54 (1.66)	1.76 (1.42)	-0.96 (-1.57)
Share of Young in Work. Pop.	-0.33 (1.23)	0.44 (2.08)	-0.40 (-0.78)	-0.01 (-0.35)
Share of Old in Work. Pop.	0.48 (1.55)	0.22 (0.67)	-0.29 (-0.51)	0.58 (0.94)
Majority of Votes: SPD	0.01 (0.57)	-0.04 (-2.08)	-0.01 (-0.24)	0.04 (1.23)
SPD & GREEN	-0.03 (-2.60)	-0.02 (-1.24)	0.00 (0.11)	0.00 (-0.07)
SPD & GREEN & FDP	-0.01 (-0.80)	-0.01 (-0.77)	-0.02 (-0.65)	0.03 (1.17)
Welfare Rec. per Tot. Pop. times Majority of: SPD	-0.07 (-0.20)	0.65 (1.80)	0.60 (0.85)	-0.77 (-1.13)
SPD & GREEN	0.51 (1.76)	0.32 (1.07)	0.73 (1.34)	-0.30 (-0.52)
SPD & GREEN & FDP	-0.01 (-0.05)	0.40 (1.26)	0.37 (0.37)	-0.91 (-1.53)
F (all) (22,343)	5.65		2.01	
F (subset) (11,343)	2.54	3.65	2.01	1.67

Notes: OLS estimates based on 74 observations in 6 consecutive years. Both regressions contain a full set of time- and regional fixed effects. *t*-statistics in parentheses. At the bottom of the table F Statistics (degrees of freedom in parentheses) are displayed for the hypothesis that the joint influence of all instruments or a set of instruments is zero.

3. Instrumenting the Accommodation Ratios

In order to deal with the endogeneity problem of active labor-market policies, the accommodation ratios in the estimates of the matching efficiency were instrumented with a set of contemporaneous and lagged variables.

As can be seen from Table 4, the effects of the instruments on the FUU accommodation rate and the ABM accommodation rate differ considerably. With the exception of social security recipients single instruments fail to have a significant effect on the accommodation ratio of FUU. However, the F-test reveals the joint significance both of current and lagged instruments. The ABM accommodation ratio is significantly affected by population composition and policy variables. The policy variables itself have negative effects on the ABM accommodation ratio whereas the interaction of the policy variables with the share of welfare recipients in the population reveals positive effects. This points to a lower propensity of the conservative parties to implement ABM programs.

References

Amemiya, T. (1974), The Nonlinear Two-Stage Least-Squares Estimator, Journal of Econometrics, 2, 105 - 110.

Arellano, M. / S. R. *Bond* (1991), Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, Review of Economics Studies, 58, 277 - 297.

Bellmann, L. / R. *Jackman* (1996a), Aggregate Impact Analysis, in: Schmid, G. (ed.), International Handbook of Labour Market Policy and Evaluation, Cambridge.

– (1996b), The Impact of Labour Market Policy on Wages, Employment, and Labour Market Mismatch, in: Schmid, G. (ed.), International Handbook of Labour Market Policy and Evaluation, Cambridge.

Blanchard, O. J. / P. *Diamond* (1989), The Beveridge Curve, Brookings Papers on Economic Activity, 1, 1 - 76.

Burda, M. C. / M. *Lubyova* (1995), The Impact of Active Labour Market Policies: A Closer Look at the Czech and Slovak Republics, in: Newbery, D.M.G. (ed.), Tax and Benefit Reform in Central and Eastern Europe, London.

Calmfors, L. (1994), Active Labour Market Policy and Unemployment: A Framework for the Analysis of Crucial Design Features, OECD Economic Studies, 22, 7 - 47.

Calmfors, L. / P. *Skedinger* (1995), Does Active Labour-Market Policy Increase Employment? Theoretical Consideration and Some Empirical Evidence from Sweden, Oxford Review of Economic Policy, 11, 91 - 109.

Davidson, R. / J. G. *MacKinnon* (1993), Estimation and Inference in Econometrics, Oxford.

Eichler, M. / M. *Lechner* (1998), An Evaluation of Public Employment Programs in the East German State of Sachsen-Anhalt, unpublished manuscript.

Fitzenberger, B. / H. *Prey* (1996), Training in East Germany: An Evaluation of the Effects on Employment and Wages, Center of International Labor Economics, Konstanz, Discussion Paper 36.

– (1997), Assessing the Impact of Training on Employment: The Case of East Germany, Ifo-Studien, 43, 69 - 114.

Franz, W. (1993), Unvollkommene Arbeitsmärkte in makroökonomischen Modellen: Eine Übersicht, in: Gahlen, B., H. Hesse, and H. J. Ramser (eds.), Makroökonomik unvollkommener Märkte, Tübingen.

Franz, W. / K. *Siebeck* (1992), A Theoretical and Econometric Analysis of Structural Unemployment in Germany: Reflections on the Beveridge Curve, in: Franz, W. (ed.), Structural Unemployment, Heidelberg.

Franz, W. / W. *Smolny* (1994), The Measurement and Interpretation of Vacancy Data and the Dynamics of the Beveridge Curve: The German Case, in: Muysken, J. (ed.), Measurement and Analysis of Job Vacancies, Aldershot.

Hübler O. (1994), Weiterbildung, Arbeitsplatzsuche und individuelle Beschäftigung: Eine ökonometrische Untersuchung für Ostdeutschland, Zeitschrift für Wirtschafts-und Sozialwissenschaften, 114, 419 - 447.

– (1997), Evaluation beschäftigungspolitischer Maßnahmen in Ostdeutschland, Jahrbücher für Nationalökonomie und Statistik, 216, 21 - 44.

Huebner, M. / A. *Krafft* / G. *Ulrich* (1992), Das Spektrum kommunaler Arbeitsmarktpolitik, Berlin.

Hujer, R. / K.-O. *Maurer* / M. *Wellner* (1997a), Estimating the Effect of Training on Unemployment Duration in West Germany-A Discrete Hazard-Rate Model With Instrumental Variables, Johann Wolfgang Goethe Universität Frankfurt, Frankfurter Volkswirtschaftliche Diskussionsbeiträge, Arbeitspapier Nr. 73.

– (1997b), The Impact of Training on Unemployment Duration in West Germany-Combining A Discrete Hazard-Rate Model With Matching Techniques, Johann Wolfgang Goethe Universität Frankfurt, Frankfurter Volkswirtschaftliche Diskussionsbeiträge, Arbeitspapier Nr. 74.

Kraft, K. (1994). An Evaluation of Active and Passive Labour Market Policy, Wissenschaftszentrum Berlin für Sozialforschung, Discussion Paper FS I 94 - 208.

Kraus, F. / P. A. *Puhani* / V. *Steiner* (1998), Do Public Work Programs Work? Some Unpleasant Results from the East German Experience, Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim, Discussion Paper 98 - 07.

Jackman, R. (1995), What Can Active Labor Market Policy Do?, Centre for Economic Performance, London, Discussion Paper 226.

Lambert, J.-P. (1988), Disequilibrium Macroeconomic Models, Theory and Estimation of Rationing Models using Business Survey Data, Cambridge.

Layard, R. (1986), How to Beat Unemployment, Oxford.

– (1990), Wage Bargaining and Income Policy: Possible Lessons for Eastern Europe, Centre for Economic Performance, London, Discussion Paper 2.

Layard, R. / S. *Nickell* / R. *Jackman* (1991), Unemployment, Macroeconomic Performance and the Labour Market, Oxford.

Lechner, M. (1996a), An Evaluation of Public Sector Sponsored Continuous Vocational Training Programs in East Germany, Institut für Volkswirtschaftslehre und Statistik, Universität Mannheim, Beiträge zur angewandten Wirtschaftsforschung 539.

– (1996b), The Effects of Enterprise-related Continuous Vocational Training in East Germany on Individual Employment and Earnings, Institut für Volkswirtschaftslehre und Statistik, Universität Mannheim, Beiträge zur angewandten Wirtschaftsforschung 542.

– (1996c), Earnings and Employment Effects of Continuous Off-the-job Training in East Germany after Unification, unpublished manuscript.

Multhaupt, T. (1996), Strukturelle Arbeitslosigkeit und Mismatch, Messung und Erklärung für die Arbeitsmarktregionen Nordrhein-Westfalens, Münster.

OECD (1993), Employment Outlook, Chapter 2 (Active Labour Market Policies: Assessing Macroeconomic and Microeconomic Effects.), Paris.

Pannenberg, M. (1995), Weiterbildungsaktivitäten und Erwerbsbiographie: Eine empirische Analyse für Deutschland, Frankfurt and New York.

Pannenberg, M. / J. *Schwarze* (1996), Unemployment, Labor Market Training Programs and Regional Wages: An Extended Wage Curve Approach, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Discussion Paper 139.

Pfeiffer, F. / J. *Brade* (1995), Weiterbildung, Arbeitszeit und Lohneinkommen, in: Steiner, V. and L. Bellmann (eds.), Mikroökonomik des Arbeitsmarktes, Beiträge aus der Arbeitsmarkt- und Berufsforschung, Band 192, Nürnberg.

Pischke, J.-S. (1996), Continuous Training in Germany, NBER, Working Paper 5829.

Prey, H. (1997), Beschäftigungswirkungen von öffentlich geförderten Qualifizierungsmaßnahmen: Eine Paneluntersuchung für Westdeutschland, Center of International Labor Economics, Konstanz, Discussion Paper 41.

Schmid, G. (1995), Institutional Incentives to Prevent Unemployment: Unemployment Insurance and Active Labour Market Policy in A Comparative Perspective, The Journal of Socio-Economics, 24, 51-103.

Smolny, W. (1993), Dynamic Factor Demand in a Rationing Context: Theory and Estimation of a Macroeconomic Disequilibrium Model for the Federal Republic of Germany, Heidelberg.

Staat, M. (1997), Empirische Evaluation von Fortbildung und Umschulung, Baden-Baden.

Steiner, V. / F. *Kraus* (1995), Haben Teilnehmer an Arbeitsbeschaffungsmaßnahmen in Ostdeutschland bessere Wiederbeschäftigungschancen als Arbeitslose?, in: Steiner, V. and L. Bellmann (eds.), Mikroökonomik des Arbeitsmarktes, Beiträge aus der Arbeitsmarkt- und Berufsforschung, Band 192, Nürnberg.

White, H. (1980), A Heteroskedasticity-Consistent Covariance Matrix and a Direct Test for Heteroskedasticity, Econometrica, 48, 817 - 838.

Zusammenfassung

Im Rahmen eines Ungleichgewichtsansatzes wird untersucht, welchen Einfluß die aktive Arbeitsmarktpolitik auf die Leistungsfähigkeit des Arbeitsmarktes im Sinne der Matching-Effizienz ausübt. Empirische Basis der Studie sind die 74 westdeutschen Raumordnungsregionen in den Jahren 1986 bis 1993. Auch wenn die Endogenität der arbeitsmarktpolitischen Maßnahmen berücksichtigt wird, werden keine Effekte der Fortbildungs- und Umschulungsmaßnahmen gefunden. Allerdings zeigen die Resultate eine Verbesserung der Matching-Effizienz der regionalen Arbeitsmärkte durch den Einsatz von Arbeitsbeschaffungsmaßnahmen (ABM). Demnach wurde die strukturelle Arbeitslosenquote in Westdeutschland durch den Einsatz von ABM im betrachteten Zeitraum gesenkt.

Abstract

The study is concerned with the impact of active labor-market policy on the unemployment problem in the case of West Germany. Based on a disequilibrium approach the focus is on the effects of continuous training programs and job-creation schemes on the labor-market matching efficiency. Using data for 74 regions in the period 1986 to 1993 and taking care of the endogeneity of those measures no effects of training programs are found. But, for job-creation schemes the estimates reveal positive effects on the matching efficiency, indicating that these measures contributed to a reduction in the structural rate of unemployment in West Germany during the time period considered.

JEL-Klassifikation: E 24, J 64, J 68, R 23